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# **Economic Restructuring and Vocational Education and Training in Korea**

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## **. Country Profile**

Located east of the Asian Continent, the Republic of Korea is a democratic state with a five thousand years of history. Korea belongs to the north temperate zone; however, its climatic differences in temperature between summer and winter are affected by the continent and seas surrounding the Korean peninsula. Summer lasts from June to August, the monsoonal climate brings 50-60 percent of the annual precipitation of about 1,200mm. Its winter, from December to February is generally cold and dry with occasional heavy snow and northwesterly winds. In between these extremes, the spring is mild and the autumn is cool and serene with clear, balmy skies.

The Korean peninsula shares a border with China and Russia in the north across the Amnokkang and Tumangang Rivers. It faces Japan to the east separated by the East Sea and China to the west separated by the Yellow Sea. Approximately 70 percent of the peninsula is mountainous, particularly in the north and along the eastern coast of the Peninsula. The Korean peninsula as a whole has a total landmass of about 220 thousands square kilometers (85,000 square miles), which is a little smaller than Great Britain.

The peninsula is divided into the Republic of Korea in the South and North Korea in the north by the demilitarized zone at roughly 38 parallel Latitude north of equator. The Republic of Korea covers 45 percent of the Korean peninsular with a total land area of about 99 thousands square kilometers.

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 7<sup>th</sup> 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 10<sup>th</sup> century, the Koryo Dynasty reigned on the Korean peninsula, followed by the Chosun Dynasty in the 14<sup>th</sup> 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 the 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, which are seven metropolitan cities and nine provinces.

Ethnically, Koreans belongs to the Mongolian race and they are a homogeneous race speaking one language. In addition, they possess their own culture and customs which differ from those of their nearest neighbors, China and Japan. They also have their own unique Korean phonetic alphabet, the Han-Gul, which is regarded as one of the most original and yet the most scientific of the various phonetic writing systems.

The Republic of Korea has an estimated population of 46.1 million with an annually decreasing rate of 1.5 percent in 2000. About 74.8% of the total population lives in urban area. The population density is one of the highest in the world, accommodating 471 persons per square kilo meter.

Approximately 53.6% of Korean adhered to one type of religion or another, Buddhists forming the largest group with 49.0%, Christians representing 47.7% (Protestant: 34.7%, Catholic: 13.0%) and Confucians representing 1.2% (National Statistical Office, Social Indicators in Korea, 2000).

### **. Social-Economic Contexts**

Over the past three decades, the Korean economy developed at a remarkably fast 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 established 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 Korean government began to undertake a



fundamental structural change towards the development of heavy-chemical industries. The government used commercial loans through the nationalized banks to reward companies conforming to state policies. After the early 1970s these 'policy loans' incentives were provided to firms to invest in state-targeted heavy manufacturing industries. In response to such growth-minded policies, these firms expanded their economic activities, most of them following strategies based heavily on low product costs.

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

From 1970 to 2000, the labor force in Korea more than doubled from 10 million to 22 million. The labor force participation rate increased from 47.6 per cent to 60.7 per cent (table 1).

Over the past 30 years, Korea's economic growth has been spectacular. From 1970 to 2000, the gross domestic product (GDP) rose at an annual rate of nearly 8 per cent from a per capita income level of US\$ 650 in 1970 to US\$ 9,675 in 2000. This growth resulted in a 15-fold increase in per capita GDP in the last three decades.

## **1. Changes in the Manner of Employment**

The rapid advancement of new technologies and the globalization of trade and labor markets are having a significant impact on the nature of work, the way it is organized and the skills it requires. These changes comprise the growth of the service sector, including

**Table 1: Background statistics**

	1970	1980	1990	1997	1998	1999	2000
Population(thousands)	32,241	38,124	42,869	45,991	46,430	46,858	46,136
GDP per capita(US\$) <sup>1</sup>	650	2,324	7,751	10,363	6,843	8,660	9,675
Unemployment rate	4.4	5.2	2.4	2.6	6.8	6.3	4.1
Labour force (thousands)	10,062	14,431	18,539	21,604	21,390	21,363	21,950
Labour force Participation rate <sup>2</sup>	47.6	59.0	60.0	62.2	60.7	60.5	60.7

1) Using current purchasing power parties, at current prices.

2) Population aged 15 and over

Sources: National Statistical Office (1997, 1981, 1991, 1998, 1999, 2000, 2001), Population Projections for Population estimates; Annual report on the Economically active population survey, various issues.

A shift to casual or part-time work; occupational change and the emergence of new occupations. During the rapid industrialization in the last three decades, the proportion of high-skilled workers increased, while the proportion of unskilled workers declined.

A majority of Koreans are employed in small and medium-sized firms. In 1999, about 81.9 percent of the total labour force was employed in small sized firms in small and medium sized firms. There were 2.77 million small and medium-sized firms representing 99.7 percent of Korean businesses and employing 8.87 million persons.<sup>1)</sup>

A large proportion of Koreans are employed in 'non-regular' jobs of short duration. In 2000, more than half of all employees had

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1) National Statistics Office, Republic of Korea (1999), Report on the Census on Basic Characteristics of Establishments.

either a temporary or a daily contract, and the proportion of employees with a 'regular' contract was therefore less than half. The proportion of employees in 'non-regular' jobs has continued to grow in the last two decades.

A detailed analysis of employment by status suggests a degree of labour market duality by gender, age and education level, with younger and higher-educated men performing most regular jobs. The incidence of non-regular work is high among women, older workers and the lower-educated. Among OECD countries in 2000, Korea had the lowest number of workers holding a permanent job, followed by Turkey. In 2000, about 29.7 per cent of Korean workers had a regular job, less than half the figure of those in regular employment in most other OECD countries.

## **2. Unemployment**

With its high economic performance, Korea has succeeded in absorbing the massive new labor force which entered the market. Korea has experienced very low unemployment rates in spite of its rapid economic growth.

The financial crisis which started at the end of 1997 brought the growth process to a sudden, unexpected halt. The crisis forced the government to agree to a rescue package with the International Monetary Fund (IMF). The unemployment rate rocketed from 2.6 per cent to a peak of 8.5 per cent in early 1999, and more than one million Koreans were thrown into poverty. The difficult economic and social situation forced the authorities to implement quickly a wide range of macroeconomic and structural reforms, notably in the areas of labor market policies and social safety nets. In response to these reforms, the economy has now turned the corner, permitting the

unemployment rate to fall rapidly to about 4 percent, while short-term prospects point to a continuation of the economic recovery.

First, it would seem that youth unemployment is structural in nature and that it will require policy attention. Unemployment rates of young Koreans aged 15 to 24 have tended to grow, and they reached high levels 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 of the lower-educated have recorded a marked upward trend. Unemployment rates among workers with high-school educational attainment are relatively high, suggesting that high-school and vocational-training curricula might not adequately match labor market requirements.

## **. Vocational Education and Training**

Vocational education and training are separated in Korea. Vocational education is implemented under the formal education system which is administered by the Ministry of Education and Human Resources Development.<sup>2)</sup> Vocational training is carried out as non-formal training which is administered by the Ministry of Labour.

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2) The Ministry of Education was reorganized as the Ministry of Education and Human Resources Development in January, 2001.

## 1. Education System

Korea uses a school 'ladder' following a similar track of 6-3-3-4, providing six years of compulsory primary education, three years of middle school, and three of high school, followed by two or four more years in colleges and universities.

Middle school education with a duration of three years is offered for students aged 12-15. All applicants from primary schools are accepted and allocated by lottery to schools within their residential districts. Regular activities are divided into required and elective subjects.

High school education aims at providing advanced general and specific education on the basis of middle school education. High schools are classified into academic, vocational, and other high school's foreign language, art & athletic, and science high schools.

Students in academic high schools, where advanced general education is practiced, select a major in the second year from the areas of humanities and social sciences, natural sciences, and vocational education. Their selections are based on the students' aptitude and interest, in turn, which provides a link with the school courses and their 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 at the beginning of the third grade.

The higher educational institutions are divided into four categories: colleges and universities; universities of education and colleges of education; junior colleges, the Air & Correspondence University, polytechnic universities<sup>3)</sup> and other schools (including

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3) Open university was renamed polytechnic university based on the Higher Education Law which came into operation in March, 1998. However, open

theological colleges and seminaries). Most higher educational institutions are under the supervision of the Ministry of Education. The Ministry of Education and Human resource Development has control over such matters as student quotas, qualifications of teaching staff, curriculum and degree requirements.

Korea has a unique education system characterized by much larger private sector representation and investment, and a relatively small publicly financed sector compared to other industrialized nations. In the past three decades, the government has, through its highly regulated and centralized governing system, attained remarkable educational achievements. Since 1970, Korea has maintained full enrolment in primary education. Illiteracy declined from over 10% in 1970 to virtually nil in 1997 (World Bank, 1999a). Gross enrolments in secondary education increased from 40% in 1970 to become almost universal by 1997. At the tertiary level, Korea ranks third among the OECD countries in the educational attainment of its population, and 84% of its academic high-school graduates entered a university or a college in 2000 (42.0 per cent of vocational high school graduates entered a university or college in the same year). Schools around the country have very low drop-out rates: 0.8% for middle school, 2.1% for high school and 2.5% for higher education. Due to this rapid expansion in schooling, gender disparities have been eliminated at both the primary and secondary levels, although they still exist at the tertiary level. At the same time, class sizes have fallen for all levels of education and pupil teacher ratios have become smaller, although they remain considerably higher than the average in certain OECD and other advance countries.

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universities are named in various ways depending on the mission and objectives of the university.

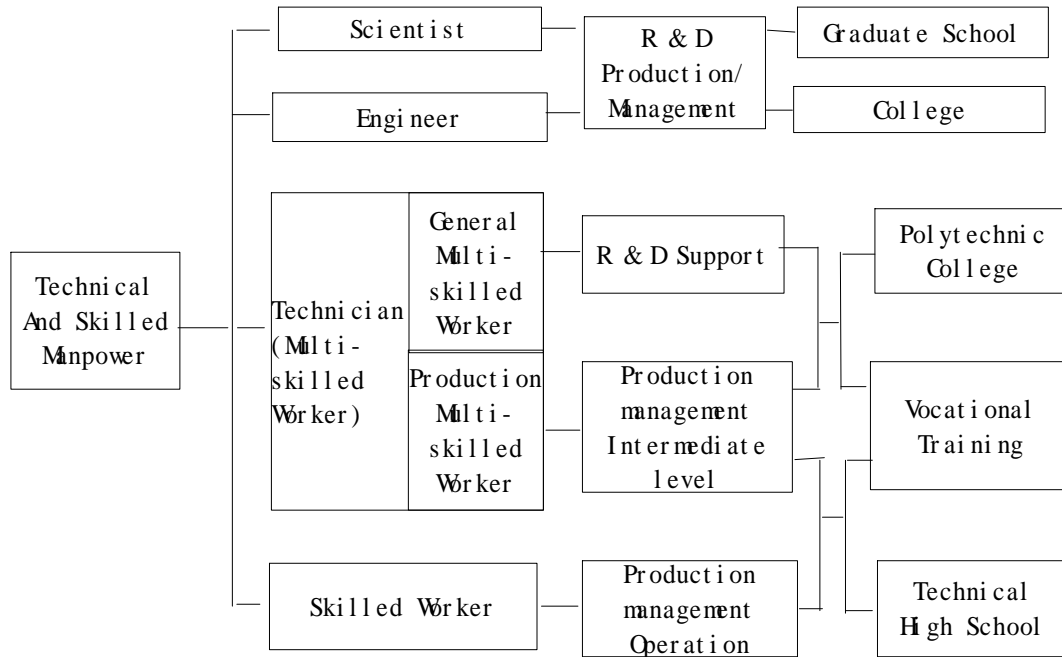
## **2. Vocational Education**

The largest element of Korea's system of vocational education and training is the system of vocational education at schools. Initial training (pre-employment training) is provided at the senior secondary level (vocational high schools) and post-secondary level junior colleges.

Vocational education aims at providing advanced general education as well as vocational education in the fields of agriculture, technology, commerce, and marine & fisheries. In 2001, there were 759 vocational high schools with a total enrollment of 651,198 which accounted for about 34.1 per cent of total high school enrollment. Most vocational students were taking programs in senior high schools of business/commerce and technology.

The curriculum of vocational high schools is composed of general and vocational subjects. Students are required to take between 204 and 216 units during the three years of study period or six semesters. Of the 204-216 units, students are required to take 104-154 units of general subjects and 88-122 units of vocational subjects. Of the 82-122 units allocated to vocational subjects, at least 50 percent of the units or 41-61 units should be allocated for practical sessions in the case of technical high schools.

The required period of study in all national, public, and vocational high schools is three years. The schools operate effective field training programs in cooperation with individual industries. One to twelve months of field training is required for technology majors; one to six months for agriculture and commerce majors; one to twelve months for fishery and maritime majors.



**Figure 1: Supply System of Skilled Manpower**

Source: Ministry of Labour (2001). The Current Status of Vocational Training Programs, p. 20.

The purpose of junior college education is to produce middle-level technicians equipped with a solid base of theories and skills. Their specialized courses are grouped into technical, agricultural, nursing, fishery, health, commercial and business, home economics, arts and athletics, and so on with two or three year programs depending on the courses. The nursing, clinical pathology, physical cure, radiation, fishing, navigation and engineering programs require three years of education. The communication program is the only one requiring two and a half



years of study and the rest require two years of education.

Since their establishment in 1979, the number of junior vocational colleges has grown to 158 as of 2001 with a total enrollment of 952,649 (including students on leave of absence).

The participation rate of adults in post-secondary vocational education is low. Only 9.1 per cent of junior college students and 19.7 per cent of polytechnic university students were aged over 25 years old in 1999.

### **3. Vocational Training**

In the 1960s the Korean government established a vast economic development plan and restructured the vocational education and training system in order to supply the manpower necessary to implement the plan. As a result, most formal vocational education was provided within the state education system, and was systematically planned and standardized. The government rapidly expanded enrollment in vocational schools in the 1960s. However, the formal vocational schools were not able to train sufficient technical manpower for the rapidly industrializing country. In order to train enough workers to meet the increasing industrial demands, the government enacted *the Vocational Training Law* in 1967 as a result of which many new vocational training institutes were established.

The vocational training programs are classified into initial training, upgrade training and job transfer training; which depend on the curriculum, duration and trainee profiles. However, it does not make clear distinctions between the last two categories. In most cases, further training or in-service training is used to include both.

Initial training aims to train basic competencies that are required

in the workplace and is intended for those newly seeking employment or prospective reemployment workers, such as high school graduates, former soldiers and the unemployed. This type of training lasts for at least one month. Programs of initial training should include (1) general education which is coordinated with practical training, (2) basic training in knowledge and skills common to related occupations which is given by a training institution or in an undertaking on or off the job, and (3) special skills to assist workers' employability.

Upgrading instruction is provided for workers who have already completed initial training (or those who are deemed to already possess basic skills) and wish to acquire further skills. The duration of the training required must be longer than 20 hours.

Job transfer training aims to assist those who are seeking to transfer jobs or unemployed workers to develop new skills. The duration of the training program must be longer than two weeks.

Training methods are classified into three categories: institutional training, on-the-job training and on-line (web-based) training.

#### **4. Public Training**

Vocational training in Korea assumes two forms depending on the type of training institute,: public and in-plant vocational training. Public training is undertaken by the Human Resources Development Services of Korea (HRD Korea), the Korean Chamber of Commerce and Industry (KCCI), governmental agencies, local autonomies and the Korea Employment Promotion Agency for the Disabled (KEPAD). It aims to train semi-skilled and skilled workers in programs lasting from three months to two years. In-plant training is undertaken by firms.

The HRD Korea, KCCI and KEPAD are concerned with trades that are commonly required by manufacturing industry (die-making and machine work), export oriented trades (gem-cutting, dyeing and weaving etc.), and trades in advanced and new technology (CAM). Governmental agencies concern themselves with trades such as carpentry, bricklaying and electronic welding, aiming at training for the self-development of prisoners and incumbents, while local autonomies concern themselves with trades necessary for increasing the income of farm households.

In 1999 there were 95 public vocational training institutes of which 40 public vocational training institutes came under the jurisdiction of HRD Korea. Also included were 23 polytechnic colleges which were placed under the authority of the Korean Foundation for Polytechnic Colleges in December 1998.

## **5. In-plant Training**

If an employer chooses to train, there are three different ways of doing so: (1) independent training at his/her own in-plant training institute, (2) cooperative training with other employers, or (3) commissioned through a third party to undertake actual training on his or her behalf.

Korea suffers from an under-provision of enterprise training, particularly among small enterprises. The system of training for the employed, which exists under the EIS, has helped improve the situation somewhat, but major problems remain.

The rapid economic development recorded since the 1960s and a shortage of skilled workers prompted the government to set up a training levy system in 1976. Firms were required to provide in-plant training or to pay a levy. After some initial success, the

proportion of firms opting for training their workers, rather than paying the levy, fell steadily from over two-thirds of eligible firms during 1977-80 to less than one-fifth during 1991-93. In 1995, a new training system was established as one component of the Employment Insurance System (EIS).

Data on expenditures and number of participants for the year 2000 show that, among the five programs, in-plant vocational training is the most important one (table 2). The programs are financed by way of employers contributions to the EIS. The EIS supports 40 to 90 per cent of the cost of the training and, additionally, in the case of the paid leave scheme, also one-third to one-half of the wage for courses that last over 30 days.

**Table 2: Training programs for the employed: participation and expenditures, 2000**

	Total	In-plant vocational training	Paid training leave
Number of firms providing training	86,680 (100)	73,411 (84.68)	309 (0.36)
Number of trained workers	1,246,932 (100)	1,220,334 (97.87)	7,756 (0.62)
Program expenditures (Million Won)	180,750 (100)	140,475 (77.43)	5,589 (2.96)
	Subsidies for course attendance	Loans for school fees	Loans for facility and equipment
Number of firms providing training	N.A.	12,960 (14.95)	12 (0.01)
Number of trained workers	252 (0.02)	18,590 (1.49)	N.A.
Program expenditures (Million Won)	59 (0.3)	34,626 (18.35)	7,978 (4.23)

Source: Ministry of Labor 2001, Current status of vocational competency development program, p. 44

## 6. Participation in VET Programs

There are little data on the participation of adults in vocational education and training in Korea. The most reliable data existing in Korea are from "*The Social Statistics Survey*", which was conducted by the National Statistics Survey in 1996.

In the survey, participation in training program is categorized into workplace learning and job training.<sup>4)</sup> The participation rate of people in workplace learning was 9.1 per cent and in job training was 2.24 per cent (Table 3). Overall, more men participated in education and training. People who are male, young, employed, with a high educational level are more likely to participate in workplace education and a longer period of training than old, unemployed, and with a low educational level. People who are old and poorly educated are more likely to participate in job training.

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4) There is no clear differentiation between workplace learning and job training in the questionnaire. It is reported that workplace learning included training in corporate culture, training by target group, foreign languages, etc undertaken at the workplace. Job training included initial training, and job upgrading training undertaken at the workplace as well as in other institutions.

**Table 3: Participation in vocational training**

	In-house training		Vocational training	
	Rate	Day	Rate	Day
<b>Total</b>	9.1	12.3	2.2	8.9
<i>Age</i>				
15-19	10.8	1.9	1.4	0.3
20-24	13.5	1.5	2.0	0.5
25-29	15.3	2.2	1.6	0.3
30-34	13.4	1.7	1.7	0.2
35-39	11.4	1.5	2.1	0.2
40-44	8.2	0.8	2.5	0.2
45-49	7.4	0.9	3.3	0.2
50-54	5.6	0.6	2.9	0.2
55-59	4.0	0.4	3.3	0.1
60-64	2.4	0.2	3.5	0.1
65+	0.4	-	1.3	-
College graduates	27.5	14.4	2.0	12.7
High school graduates	9.1	10.2	2.2	11.9
Middle school graduates	2.3	6.5	2.4	7.8
Primary school graduates	0.5	8.4	2.4	3.0
<i>Gender</i>				
Men	13.2	12.6	3.7	7.4
Women	5.3	11.7	0.9	14.7

Source: National Statistical Office 1997, Report on the social statistics survey.

## **7. The Major Organizations Involved in VET**

The Ministry of Education and Human Resource Development (MOE) is the central government organization responsible for the formulation and implementation of policies related to academic activities, the sciences and public education. MOE integrates and coordinates educational policies, publishes and approves textbooks, provides administrative and financial support for all levels of

schools, supervises local educational agencies and national universities, operates the teacher training system and takes charge of the function of non-formal education.

Within MOE, the Lifelong Vocational Education Bureau is responsible for the administration of technical and vocational education at secondary and post-secondary level schools and colleges. The Vocational and Professional Education Policy Division within the Lifelong Vocational Education Bureau is the central government level office dealing with upper-secondary and tertiary technical-vocational education. The Junior College Support Division is looking after the administrative and academic related matters for junior colleges.

Non-formal vocational training is administered by the Ministry of Labor. Headed by the Minister and Vice Minister, the Ministry has two offices and four bureaus: Planning and Management Office and Employment Policy Office, and Labor Policy Bureau, Labor Standard Bureau, Industrial Safety & Health Bureau and Women Workers Bureau. In addition, eight professional officers are responsible for offices of professional concerns.

The office in charge of vocational training in the Ministry of Labor is the Ability Development Officer under which there are three divisions: Training Policy Division, Human Resource Development and Qualification support Division.

Under the Ministry of Labor, the HRD Korea (former Korea Manpower Agency) was established in 1982. The HRD Korea is a public corporation subsidiary responsible for vocational training. Its main functions are (i) vocational training, employment guidance, and follow-up service, (ii) development of vocational training materials, (iii) National Qualification Testing and Registration, (iv) skill encouragement and competitions, (v) employment promotion,

and (vi) promotion of private vocational training.

The Korea Research Institute for Vocational Education and Training (KRIVET) is a national government VET body in Korea. KRIVET has responsibilities for developing and implementing Korea's national VET research and evaluation effort, together with the collection and reporting of national VET statistics. KRIVET also provides career information services through its affiliated career information center.

## **. Recent Reforms in Vocational Education and Training**

### **1. New Vocational Education System**

Vocational education has the reputation of being a "second class" education system chosen only by those who have failed to get accepted at a college. The educational content does not meet the needs of the practical world, it has long been a source of complaint for businesses with some going as far as to disregard the various diplomas awarded by vocational schools. This current underdeveloped state of the nation's vocational education is due to the lack of cooperation between the schools and businesses, central and autonomous provincial governments and among the various government agencies.

PCER proposed the Second Educational Reform Program including the vocational education reform in 1996. The main objective of this vocational education reform is to establish a "Lifelong Vocational Education System" to realize a "Lifelong Open Learning Society." It will ultimately lead to the development of



each individual according to his or her unique talent and interest as well as nurturing high-quality human resources that reflect the needs of labor market.

The reform of vocational education will be promoted in the following four directions:

(1) From a closed door to open access - graduates of vocational high schools will be given opportunities to continue with their studies through polytechnic university, junior college, polytechnic college, a new University and even up to graduate school while they continue to work. To achieve this, the government will increase the budget for vocational education.

(2) The education system will be based on competition and cooperation. The foundation will be laid for the realization of cooperation between schools and industries. At the same time, schools will be encouraged to compete with each other.

(3) Vocational education will be "useful" for industries. It will open the way for industries to participate in the evaluation and management of vocational education. Reorganization of the system will allow the active exchange of human and material resources between schools and companies.

(4) The system will move from an "inefficient" educational system to an "efficient" one. The government's role here will be:

A) To revise the qualification system to link schools with businesses, thereby integrating education and training.

- B) To promote effective use of the latest multi-media and telecommunications technology to provide learners with low-cost but high-quality vocational education
- C) Increase the autonomy of each school
- D) Strengthen the role and finances of the local autonomous entities.

With the introduction of a lifelong education system, junior college education was expanded. Between 1979 and 1997, the enrollment in junior colleges increased 11 times and the programs saw an increase from 91 to 361. Based on the Educational Reform Program, the "*customized training system*", responding to industrial demands was implemented in more than ninety junior colleges' of which 59 colleges were provided financial support from the government in 2000. In order to strengthen the junior colleges' capacity for vocational education, programs linking the curriculum of the second and third years of vocational senior secondary schools with that of the vocational college (2+2) 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. From 1996, graduates of junior colleges receive associate degrees.

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 HRD Korea with the approval of the Ministry of Education during early 1998. Beginning February 1998, graduates of polytechnic colleges could attain Industrial Associate Degree.

## **2. Vocational Competency Development Programs**

The Korean state has attempted to correct market failure in the training market by imposing a levy system, by implementing a national technical qualification system, and providing public vocational training. Compulsory training and test systems in Korea, however, did not encourage firms to undertake training and upgrade training programs voluntarily. The most visible evidence of this was the lack of upgrade programs in enterprises. Training programs for blue-collar workers thus far were concentrated in the basic skill training of pre-employed trainees or new entrants to the workforce, and they lacked established channels for existing employees to improve their technical knowledge and skills to enable them to attain higher-level technical certificates.

The concentration of training programs in basic skills training can be attributed to the training policy designed to channel unemployed individuals into the industrial sector during the economic expansion of the 1970s. Even though training contributed to the early increase in company based training, it did not meet the training demands of private firms during the currently changing environment in the Korean economy. State regulations concerning the use of training funds and the qualifications of trainers, training materials, and equipment have not provided employers with the incentives and assistance they need to invest in the further education and training of their workers or to pursue high productivity forms of work organization.

This compulsory in-plant training system, which was designed to concentrate on the basic training for new entrants to the labor market at the embryonic stage of industrial development,

contributed to the provision of necessary manpower thereby sustaining the rapid economic growth of Korea. It was pointed out, however, that the system should have been changed to accommodate the new trends, especially during structural adjustment and industrial restructuring.

Entering the 1990s, voluntary training by companies has increased greatly. At the same time the number of youths undertaking vocational training has decreased markedly, due to sheer reduction per ratio in the young population and the increasing number of youth entering universities. In designing the Employment Insurance System (EIS) of Korea, one of the hottest issues was how to encourage the private sector to provide training on a voluntary basis and to boost upgrade training and retraining of in-service workers and job transfer training of the unemployed. Some people contend that in order to promote voluntary training in the private sector, the compulsory training system should be abolished as soon as possible.

However, the Korean government decided that it is premature to completely abolish the current compulsory system which has existed for almost two decades and for the time being it is desirable to apply the system to companies with 1,000 or more employees which still need a large number of trained workers. As a result, enterprises with less than 1,000 employees were exempted from the compulsory vocational training system from July, 1995, consequently they fall into the Employment Insurance System. The implementation of training is under the discretion of the employer and financial support for training is based on the training costs.

The vocational competency development scheme under EIS is not a compulsory but an incentive system to induce voluntary training by providing financial support to employers and

employees from the EIS fund. There are two main categories of financial support available in the scheme. One is the support to employers who implement the vocational competency development programs, namely, support for in-plant training, other education and training, and paid leave for education and training. The other is support to employees under education and training, namely, training incentives for the elderly and tuition loans. The unemployed can be provided with various training activities they wish to undertake regardless of their eligibility for unemployment benefits. It is needless to say that re-employment in secure jobs through opportunities to acquire appropriate skills should be preferred to the passive protection of unemployment benefits.

Should an employer establish training facilities and/or purchase equipment, he or she can apply for a loan or subsidy from the Employment Insurance Fund. With the intention of promoting training within small & medium sized firms, the program will induce joint vocational training by groups and support their financing in order to harness the initiatives and ingenuity of the private sector to provide training programs catering to the diverse and changing needs of firms. In providing the above services, more emphasis is placed, by stipulation in the law, on small and medium sized firms.

In 2000 the numbers of firms and persons who were entitled to the vocational competency development programs was 693,414 and 6,747,263 respectively. Of the 6,747,263 persons, about 39 percent were in the manufacturing industry, 0.01 percent were in the agricultural sector, and 61 percent were in the service sector. This ratio indicates that the focus of vocational training will shift from the manufacturing industry to the service sector.

In the same year, 1,246,932 persons were afforded support from

EIS funds: 1,220,334 persons (97.0 %) encompassing in-plant upgrade training, 7,756 (1.0 %) taking paid leave for education and training, 252 (0 %) financing taking college courses and 18,590 (1.0%) being given a tuition loans. The total amount provided for financial support for the programs was about 181 billion won.

### **3. Enactment of the Act on Promoting Workers' Vocational Training**

As discussed before, the Basic Vocational Training Act including the compulsory training system, contributed to the training of skilled manpower, but it did not meet the changing demands for industrial manpower. In addition, the law constrained enterprises from providing upgrade training to their employees.

The government enacted the Act on Promoting Workers' Vocational Training in 1997 to establish a system for vocational competency development and to encourage enterprises to provide further training for the employed on a voluntary basis. The act has put into effect since January 1999. With the enforcement of the act, the Basic Vocational Training Act was abolished.

According to the act, the Minister of Labor provides financial support to employers who implement vocational competency development programs. The Minister also supports employees who make an effort to develop their vocational competency, i.e., undertaking vocational competency development training programs, wanting to acquire a certificate or undertaking programs designated in the Education Law. Governmental agencies or local autonomies may provide training for the unemployed.

The enactment of the law provides a momentum for another take-off in vocational training. Under the act, restrictions on

in-plant training practices were removed, while encouraging voluntary training, demand-oriented training, and upgrading job competency for the employed. The government has played a supportive role as an assistant in encouraging vocational training.

The number of workers trained has increased since implementation of the new training policy under the EIS. In addition, most in-plant training schemes include "advanced" courses, instead of basic training as tended to be the case under the levy system (table 4).

**Table 4. Proportion of people undertaking initial training and further training, 1990-99>**

Unit: %

	Total	Initial training		Subtotal	Upgrade T		Subtotal
		Public	Private		Public	Private	
1990	44,852 (100.0)	45.4	29.8	75.2	0.7	24.1	24.8
1991	78,552 (100.0)	32.6	32.1	64.7	0.4	34.9	35.3
1992	132,608 (100.0)	17.6	30.9	48.5	2.1	49.4	51.5
1993	127,314 (100.0)	18.6	29.0	47.6	2.0	50.4	52.4
1994	159,979 (100.0)	2.0	44.0	46.0	5.2	48.8	54.0
1995	175,767 (100.0)	11.5	21.5	33.0	5.8	61.2	67.0
1996	170,427 (100.0)	10.2	19.5	29.7	11.3	59.0	70.3
1997	199,981 (100.0)	7.8	14.2	22.0	16.6	61.4	78.0
1998	750,137 (100.0)	4.0	5.5	9.5	14.7	75.8	90.5
1999	913,718 (100.0)	4.0	1.0	5.0	9.0	86.0	95.0

Source: Ministry of Labor, The current status of vocational training programs, 1991-2000.

However, despite these encouraging results, it would appear that current training programs for the employed suffer from certain deficiencies:

Only a small proportion of the firms which pay contributions to the fund actually provide training for their workers. To take the example of in-plant training, which is the most common, during 2000 only 10.6 per cent of the insured firms provided in-plant training (table 5). During the same period, only 18.1 per cent of all insured workers received in-plant vocational training. The take-up of the other programs of training for the employed is even lower.

Furthermore, large firms are the main beneficiaries of the training programs for the employed. As shown in table 5, in 2000, the participation rate of firms with less than 150 workers in in-plant vocational training was negligible, while it came close to 1640 per cent in the case of firms with over 1000 workers. This high participation rate is explained by the fact that firms may claim support more than once over a given period of time. Only about 4 per cent of those employed in small firms received in-plant training, compared with 62.5 per cent in the case of large firms. Other programs of training for the employed are mainly used by large firms.



*Table 5. Beneficiaries of in-plant vocational training programs, by firm size, 2000>*

Unit: %

	Firm size (number of workers)			
	Total	Less than 150	150 - 1000	1000+
Subsidized firms	100 (73,411)	77.2	17.4	5.4
Firms paying contributions	100 (693,414)	94.0	0.8	0.1
Firms' participation rate	10.6	8.7	233.3	1239.6
Subsidized workers	100 (1,220,334)	13.6	25.9	60.5
Insured workers	100 (6,747,263)	61.2	19.9	17.5
Workers' participation rate	18.1	4.0	23.5	62.3
Amount of subsidized	100 (180,749,711)	14.0	32.1	53.8

Note: Construction is dealt with separately given that special contribution rules, not based on firm size, apply to firms in this sector, but not shown in the table. In the section of firms paying contributions, construction contributed 5.1 per cent. And in the section of insured workers, construction accounted for 1.4 per cent.

It would therefore appear that training under the EIS has not succeeded in increasing substantially training provided by small enterprises. As large firms would, in any event, tend to train workers in the absence of specific policies, it seems highly likely that the training subsidies yield large 'windfall' gains to large firms. Although the provision of training is likely to increase with economic recovery, the system's effectiveness suffers from the excessive number of programs and the fact that training tends to be concentrated in large enterprises. As in other OECD countries, there is a risk that workers in small firms, once trained, are hired by either another small firm or a bigger one. This risk may be higher in Korea, given the unusually large gap in terms of wages and working conditions between large and small firms.

#### **4. A scheme to promote training in Small and Medium size Enterprises (SME)**

In order to supply skilled labor to SMEs and upgrade the skills level of employees of SMEs, the Ministry of Labor introduced a pilot program which is called "the SMEs training consortium" in June 2001. The program takes three forms depending on sector and region: SME-employer association type, SMEs-large enterprise and SMEs-public training institutes.

The program has been implemented in 6 model training institutes (implementing agencies) since June 2001. As of January, 2002, 597 SMEs participated in the program, with a total 33,335 persons. Most of participating firms are in the sectors of shipbuilding and mechanics, which suffer from the shortages of skilled labor.

The characteristics of SME training consortium include providing training on the basis of demands of participating SMEs. The implementing agency conducts surveys of employers of SMEs on the employment needs and skills needs. Based on the survey results, they develop training programs based on job analysis. As a result, they provide diverse training programs, with flexible time schedules so that those who wish to take training, do so anytime and on any program. This demand-oriented approach encouraged SMEs to participate in training programs.

Since the operation of the program, the participation of SME workers in training has increased. Compared to the year 2000 when the program was not operating, the number of training programs increased from 32 to 178 and the number of workers participating in training increased from 921 to 5,393, during the period between July 2001 and January 2002.

The government plans to expand the pilot program to include other sectors and regions upon evaluating the implementation of the program after one-year of operation.

## **V. Issues and Concerns in VET**

### **1. Relevance of VET**

According to Robert Reich, the three jobs of the future include routine production services (performing repetitive tasks); in-person services (providing person-to person services); and symbolic analytical services (problem-solving, problem-identifying and strategic brokering activities). In Korea, the overarching need is to develop critical-thinking skills, communication skills, computer skills, quantitative reasoning and social interaction among students so that they can become successful knowledge workers for the future. These new skills are very different from those traditionally taught at schools. Although the quality of Korean education at the primary and secondary levels has been praised around the world, how well can Korean schools perform and how good will be the quality of Korean education when measured against these new skills requirements? Until now, the main purpose of secondary education in Korea has been to prepare students to enter prestigious colleges and universities. Even though a number of reforms have been instigated in this area, the college entrance examination system still tends to give priority to students who do better in all fields on average, rather than to those who possess creativity and problem-solving capabilities. The gap between what currently exists and what is required for the future needs to be

bridged for Korea's successful transition to a knowledge-based economy. There are distortions in the labor market in Korea with respect to wage premiums for different types of education/ degrees, partly fueled by the traditional sense of educational elitism. In its transformation to an advanced, knowledge-based economy, Korea must analyze its education system not only from the supply side, but also from the demand side as well.

## **2. The "Mismatch" between demand and supply**

There is an imbalance between the demand and supply of a skilled workforce in both academic and industrial areas. Higher education began to focus on humanity studies, which increased from 84% in 1981 to 29% in 1997. On the other hand, science and engineering studies dropped from 61.5% to 38.1% in the case of vocational junior colleges. In the case of colleges, humanity studies increased from 28.7% in 1981 to 40.6% in 1997 which exceeded the ratio of science and engineering studies. In the case of quota and academic subject control of colleges (including junior vocational colleges) the government policy rationality and market failure occurred concurrently, despite the educational level of students, inevitably underemployment has taken place. In spite of structural unemployment, a labor shortage deepens in some industrial sectors.

## **3. Labor market information system**

Labor market data are not comprehensive enough to identify skills demand. Another weakness is that there is a limitation of linkages in labor market information. For example, data on employment insurance, occupation and qualification are not

integrated. Furthermore labor market data are not well utilized in planning education and vocational education.

The education market and the labor market are separated. Even within the education market, education market information (EMI) is not accumulated. In Korea, the MOE does not have the capacity to make policy decision independently. In general, education policy is formulated because of special external shock, rather than by input based on accumulated information.

#### **4. Linkage between School and Industry**

The original function of VET is to provide people with opportunities to learn the skills and knowledge required in the labor market, skills and knowledge often not provided by the general education system. For this reason, the nature of linkages between VET institutions and industries is critical in determining the outcome of vocational education and training. The nature of the linkages is affected by various institutional factors (historical background and funding sources). Currently, linkages between school and industry are very loose in Korea.

Few formal linkages between school and industry and enterprises are found. At the national level, no board (or council) exists for overseeing the development, implementation and evaluation of national training policy. At the provincial level, there are no industry advisory committees to discuss training needs in the provinces. At the VTE school level, no employer advisory committees exist. Some schools have informal meetings with employers to exchange ideas and information on training. There is no formal course advisory committee to advise school on how to develop and implement curriculum.

Also, the government should encourage industry to support partnership in active ways. The initiatives of industries and enterprises can strengthen the linkage and should be encouraged.

### **5. Rigidity of VET system**

There is limited continuing education and retraining opportunities for adults. On the other hand, the criteria for selection and the curricula of polytechnic colleges and vocational junior colleges are mainly focused on regular students and it restricts opportunities for industrial workers to attend colleges and universities. Especially, due to the low rate of adult workers' participation in education, which is compounded by the age-restriction to enter higher education institutions, the participation rate of adults in regular higher educational institutions is low. It is only 20.1% among college students aged over 25, which is significantly lower than the USA's 45.9%.

### **6. Lifelong learning**

In advanced countries, a proliferation of institutions and mechanisms focus on lifelong learning at work and at home. New forms of learning are becoming available, such as the Internet, increased use of TV, distance learning, virtual universities, and others. These trends can only intensify in the knowledge based economy.

The lifelong education system is not well developed in Korea. Information and Communication technologies (ICTs) are not fully exploited in areas such as distance learning and virtual universities, and Korea lags its OECD peers in the provision of

learning opportunities for adults. While the training opportunities provided by the private sector are limited in comparison to other advanced countries, those that are available could lead to a risk of social polarization, as those who are better qualified may have the most opportunities for further training. However, there will be no incentive and motivation for lifelong learning if the improved or newly learned skills are not appreciated in the workplace. Such recognition and reward are important because in Korean culture, rewards are often based on seniority rather than on increased productivity derived from improvements in workers' skills.

Since educational needs and motivations change over a lifetime, the knowledge based economy needs to cater to the growing diversity of learning needs, both formal and informal. This is important for developing an informed citizenship, strengthening the foundations of democracy and developing a consensus for the knowledge based economy. Thus, the issue of access to knowledge and information for all, and especially for the poor, needs to be stressed.

The Korean Government has recognized the importance of this issue and has begun to expand a high-speed Internet network, offer free public access to computers, provide training in information delivery and promote English proficiency. With regard to the digital divide existing among the children of poor families, the government has set up a special program to teach Internet and basic PC skills to nearly half a million students from poor families. It will also give free PCs and five years of free Internet access to some 50,000 children from lower income families.

These measures are important, but not sufficient. For example, teaching children how to use the Internet is only the first step. The Korean Government should adopt some of the more efficient

solutions that have been adopted by many countries, both developed and developing ones.

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# **Human Resources Development Strategies for Korea**

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## **I. Background of the Human Resources Development Policies at the National Level**

### **1. The Crisis and Challenge of the Korean Economy**

From the early 1960s to the late 1980s, the Korean economy grew on average by 8% every year. However, Korea was not so successful in its response to the globalization of economies and the result was the foreign currency crisis (which led to the IMF loan crisis) in late 1997. Before the economic crisis, the massive inputs of labor and capital brought rapid growth to the Korean economy. However, it became clear that this conventional strategy was no longer working for the knowledge-based economy. Such a realization has led to the determination that in order to secure new momentum for further growth, there should be more emphasis on human resources equipped with creative knowledge rather than increasing labor and capital input.

## **2. Changes in the Labor Market and Growing Demand for Lifelong Learning**

Since the foreign currency crisis in 1997 which caused massive layoffs, public faith in lifetime occupations became faded. Instead, the importance of lifetime employment or future employability has emerged in Korean society. In particular, job creation and destruction has become frequent in knowledge based industries. As a result, an increasing number of workers are moving across occupations and industries as well as within occupations. Moreover, coupled with the slowdown in population growth rate, the demand for re-educating and training of adults, including women, is growing rapidly. On the other hand, flexibility in the labor market, along with the change of knowledge and skills required in the workplace, have raised the need for a national initiative to establish a new human resources development system. Therefore, the HRD system puts too much emphasis on lifelong learning and voluntary competency building by the individual worker.

## **3. Re-definition of the Government Role to Meet New Demands**

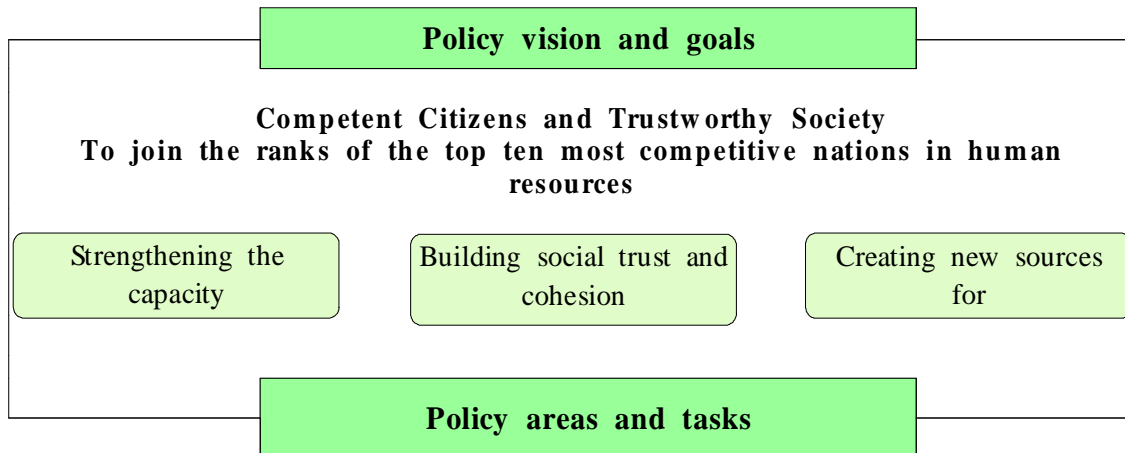
In the course of overcoming the foreign currency crisis, the Korean government tried hard to restore the market system by deregulation and decentralization. By now it seems that the Korean government should be aware of the possibility of “market failure.” It should be pointed out that the HRD is more of a governmental responsibility than of the market system. In this regard, the role of government is being re-defined to meet the new

demands. Particularly, the Korean government finds its role in the provision of infrastructure for the HRD.

### **. Human Resources Development Policy at the National Level**

The Korean government has set an ambitious goal to become one of the world's top ten nations in terms of HRD and knowledge by 2005. In order to achieve this goal, four major policy areas have been identified: developing key work competencies for all Koreans, making knowledge and human resources the new driving force for further growth, upgrading the level of utilization and management of human resources, and building the infrastructure for human resources development.

Under the four policy areas, 16 relevant tasks are outlined as follows:



<p>Developing the key work competencies for all Koreans</p> <ul style="list-style-type: none"> <li>· Guaranteeing basic education for all citizens</li> <li>· Fostering a youth culture that is forward-looking and creative</li> <li>· Invigorating lifelong learning</li> <li>· Supporting ability development of the socially marginalized groups</li> <li>· Forming social trust and a democratic citizenship</li> </ul>	<p>Making knowledge and human resources the driving force for further growth</p> <ul style="list-style-type: none"> <li>· Developing talented human resources</li> <li>· Developing workers for nation's strategic areas</li> <li>· Strengthening cooperation among businesses, universities, and research institutions</li> <li>· Developing human resources for service industries</li> <li>· Training professionals for arts and cultural areas</li> </ul>	<p>Upgrading the level of utilization and management of human resources</p> <ul style="list-style-type: none"> <li>· Promoting professionalism of human resources in the public sector</li> <li>· Improving utilization of human resources in the private sector</li> <li>· Expanding participation of human resources of women</li> </ul>	<p>Building the infrastructures for human resources development</p> <ul style="list-style-type: none"> <li>· Constructing the information infrastructure for human resources</li> <li>· Improving the system of knowledge distribution</li> <li>· Strengthening effectiveness of the human resources policy</li> </ul>
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## **1. Developing the Key Work Competencies for All Koreans**

We cannot expect a country to be competitive without developing the key work competencies of its people. The most urgent task is to raise the knowledge and skill levels of each individual by innovating the education system. In doing so, an equally important task is to secure social assets by building social trust and developing citizenship. Four proposals are addressing this purpose.

1-1. Primary and secondary education is the critical stage to develop the basic knowledge and attitudes that will be required for participating in social activities. Most of all, every child should be guaranteed to reach the basic academic achievement level as well as the standards of democratic social behavior. Also, Korean schools should be given more autonomy to develop creative minds as well as to cultivate sound youth culture. The Korean government plans to renovate educational administration so as to make individual schools more autonomous, while introducing an institutional framework that facilitates stronger ties between schools and local communities.

1-2. Lifelong vocational education and training should be available to all Koreans to develop the capabilities that will enable them to respond to the changes in labor market. In this regard, schools should provide students with courses which help them learn about various occupations and develop the ability to pursue their own lifelong education after graduation. Specifically, the curriculum of vocational high schools needs to respond to the demands of businesses and industries. Also, universities are

encouraged to introduce more vocational training programs as well as lifelong learning for adults. With the proliferation of online education and training, more opportunities for continuous education should be offered to adults. The government is supposed to reinforce the “ Educational Credit Bank System ”, the program that authorizes the giving of academic credits for learning experiences gained outside schools. Cities and provinces should be encouraged to develop into “ lifelong learning cities ” aiming at strengthening the role of local governments in enhancing the lifelong learning of their residents.

**Credit Bank System**

( [http:// edubank.kedi.re.kr](http://edubank.kedi.re.kr) )

Introduced on January 13, 1997, the Credit Bank System (CBS) purports to promote lifelong learning in Korea. Diverse learning experiences that are gained not only in formal schools but also outside them are recognized and deposited as academic credit by the authorization of the Credit Bank. When the learner accumulates the necessary CBS-approved credits, he/ she can be awarded an appropriate college level academic degree.

1-3. It is another challenge for social stability building to develop the disadvantaged. The government should offer more educational and training opportunities to the disadvantaged ; low-income families, handicapped people, and unemployed youth. The newly proposed “ productive welfare policy ” puts much emphasis on providing vocational training that enables disadvantaged people to become self-reliant. At the same time, in order to prepare for an aged society, measures should be taken to support employment, lifelong learning and voluntary activities of the elderly.

1-4. For our children to grow up with a community-oriented mentality and self-imposed sense of responsibility, active participation in social activities will be encouraged in elementary and secondary education. Teachers and parents should emphasize self-control and responsibility, fair competition and cooperation, and social trust. Also, in line with the trend of globalization, schools should stimulate students' understanding of the global society through international education and various exchange programs, particularly, through the Internet.

## **2. Making Knowledge and Human Resources the Driving Force for Further Growth**

New sources for further growth of Korea should be found in knowledge creation and high quality human resources. Gifted children should be identified as early as possible to be given appropriate education. Both public and private investments should be increased to supply the R&D and production manpower for the six strategic technological areas. And the roles and functions of universities should be upgraded to establish a system for continuous knowledge innovation.

2-1. The government is reinforcing education for the gifted. Various educational programs, for instance, schools for gifted children and education centers for the gifted are now operated by national agencies, local governments, universities and government-funded research institutes. The government's efforts to build a supportive system for gifted children, for instance, securing the best teachers, reducing the size of classes, improving the learning environment, developing teaching methods, learning



materials and so forth, should be continued.

### **The Education Act for the Gifted**

"The Education Act for the Gifted" was enacted on January 28, 2000, in Korea, setting the legal foundation to identify gifted children as early as possible and provide education tailored to develop their potential. The educational programs for the gifted currently offered are as follows:

**Classes for the gifted:** non-permanent programs operating in 151 schools, and community classes for the gifted operated by 63 Offices of Education

**Special-purpose schools:** science high school (16 schools, 2,700 students), foreign language high school (18 schools, 21,330 students), arts high school (12 schools, 9,300 students), physical education high school (12 schools, 9,300 students)

**Education centers for the gifted:** education centers for the gifted established at universities (15 centers, 2,300 elementary, middle and high school students enrolled, centers designated by the Ministry of Science and Technology)

2-2. The Korean government has designated six high value-added technologies (i.e. IT, BT, NT, ET, ST, CT) as strategic priorities for further growth. The government will establish an infrastructure that supports the supply of high quality human resources and concentrate the administrative and financial resources in these areas. Particularly, through the three-way cooperative arrangements among industry, universities, and R&D institutes, the core manpower for the strategic areas will be efficiently developed. At the same time basic sciences should be promoted by attracting highly talented minds with strong support from the government. In some areas with difficulty in developing high quality human resources domestically, joint projects with other countries will be encouraged, including establishment of overseas research centers.

2-3. Universities should be made the center of the tri-party cooperative arrangements among industries, academic communities, and research institutions. The Korean government is planning to build large scale technological parks centering on universities, at least one in each of the major cities and provinces. In this regard, universities are encouraged to renovate their management rules and practices to allow the introduction of an independent organization for the three-way cooperation with industry and R&D institutes. Such an institutional arrangement will facilitate the establishment of for-profit organizations and incubators for new businesses on the campuses. In addition, research-oriented universities will be designated to carry out specialized HRD programs in key fields. Also, concentrated investment will be made to vitalize the knowledge innovation framework. Under the vision to globalize university education, prestigious foreign universities or graduate schools and programs will be imported to Korea.

2-4. The liberalization of trade in services by the Doha Development Agenda declared at the 4th WTO Ministerial meeting poses a serious problem to the Korean economy in securing competitive edge in the service sector. Particularly, training and the qualification system of professional services, such as law, finances, and business counselling should be reformed to meet the challenge. On the other hand, in an effort to make vocational training for service industries more competitive, the government plans to introduce a new qualification system for educational and training institutions that will facilitate the transition from school to work and from work to school.

### **3. Upgrading the Level of Utilization and Management of Human Resources**

A knowledge based society needs a strategy to allocate human resources in the right place in order to maximize the utility effect. A reformative framework for human resources management should be established both in the public and in private sectors. Also, without developing and maximizing the use of human resources of women, Korea cannot join the ranks of countries that are strong in human resources. Transforming the social environment and creating institutional arrangements will help Korean women work to their fullest abilities.

3-1. It is important to secure competent manpower in the public sector to lead various policies of a knowledge-based society. The current recruitment system should be reformed in order to verify the qualifications of public officials for a knowledge based government. The reform emphasizes creativity, learning skills and the ability to respond to change as well as expertise for the specific job. The practice of public sector employment should be made more flexible by increasing the number of contract based government posts. Particularly, in order to increase the ratio of female employees in the public sector, the introduction of a quota system for government positions will be considered. The skill level of public employees should be improved through performance oriented personnel management programs and practices. Sabbatical leaves will offer further learning opportunities to government officials. Also, officials should be allowed to experience business in the private sector through personnel exchange programs. Such exchanges are expected to work as a catalyst stimulating the sharing of expert knowledge between the public and private sectors.

3-2. The Korean economy expects to pursue new labor management relations, in which vocational education and training for workers are among the key agenda items in collective bargaining. Three-way cooperation among labor, management and the government to support career development for workers should be further emphasized. In order to encourage workers to take the lead in developing their work capabilities, more technical colleges and in-company colleges should be established. For those working in small and medium businesses that are incapable of providing their own development programs, the government plans to encourage joint training programs between large and small firms as well as among small and medium enterprises themselves.

3-3. The Korean government will take an evermore aggressive stance toward building a foundation for the development and utilization of female resources. First, paid leaves and training programs will be encouraged to enable more female workers, including those in part-time and temporary positions, to receive education and training. Various programs will be developed to help female population to have work opportunities. Secondly, education will be offered to full-time homemakers seeking employment in order to assist them to develop their skills. Thirdly, for highly talented females, the government will provide support to help them advance into promising occupations in emerging industries and knowledge-intensive fields.

#### **4. Building the Infrastructures for Human Resources Development**

In order to develop, utilize, evaluate, and manage human

resources at the national level, a nationwide information infrastructure must be established. Also, an effective system to manage the production and circulation of knowledge should be arranged as a part of the infrastructure for HRD.

4-1. In order to relate the labor market to education and training, an incentive system should be introduced, for instance, the Learning Account for Individuals that will make it possible to manage and evaluate the learning experiences at schools and workplaces throughout ones' lifetime. The information system should be improved in order to reflect the needs of industry to schools as well as the supply and demand of the labor market. It will accumulate information on learning, career development, and employment individually offered by various institutions. The government should set up a comprehensive statistics system at the national level for HRD information, which will also enhance the policy making capabilities.

4-2. The utilization and diffusion of knowledge is vital to HRD and the protection of intellectual property is a prerequisite for it. The protection of intellectual property, particularly, the patent rights of R&D outcomes, should be fortified to the level of advanced countries. While intellectual property should be protected, it should be also widely circulated to benefit as many as possible. A copyright trust system on behalf of the individual copyright holders will increase the use of the copyrights as well as the protection of the rights. Creation of new knowledge requires a sharing of existing knowledge. A knowledge network system should be established among government, universities, and R&D institutes that will facilitate joint research by combining and

sharing knowledge. Researchers, government officials, and business leaders will benefit greatly from this network of knowledge sharing.

## **. Organizational Scheme for Successful Implementation of Human Resources Development Policies**

So far, policies related to the development and utilization of human resources, such as education, training, research and development, employment and social welfare have been implemented separately by different ministries without a comprehensive framework to integrate and coordinate them. Therefore, it was unlikely to expect cooperation between ministries. Recently, the central government organization was reshuffled and the Ministry of Education and Human Resources Development (MOEHRD) was launched to oversee and coordinate various policies related to human resources. In December 2001, the MOEHRD announced the National Human Resources Development Strategies for Korea as a mid and long-term strategic plan for HRD at the national sphere.

### **1. Launching the Ministry of Education and Human Resources Development**

1-1. In February 2001, Ministry of Education was transformed into the Ministry of Education and Human Resources Development with the upgraded rank of its head to deputy prime minister. The MOEHRD is empowered to oversee and coordinate all major

policies related to the development and utilization of human resources, such as vocational training, research and development, unemployment plans, and social integration. On the other hand, the Presidential Commission on Education and Human Resources Policy was established to set mid and long-term policy visions on development and utilization of human resources. It submits evaluative reports regularly to the President on the status of policies implemented by various government agencies.

## **2. Developing 'the National Human Resources Development Strategies for Korea'**

2-1. The National Human Resources Development Strategies for Korea which sets policy objectives and implementation strategies regarding the development and utilization of human resources, will be revised every five years by law. For each of the policy tasks identified in the strategies, respective implementation plans are being prepared by the responsible ministry forming policy networks of relevant ministries, local governments, businesses and civic groups.

2-2. "The Human Resources Development Act" will be enacted to support HRD policies by legally empowering the Deputy Prime Minister to oversee and coordinate the related ministries. The Act includes periodic revision of the National Human Resources Development Strategies for Korea, formation and operation of the Ministerial Commission for Human Resources Development, evaluation of policy outcomes based on analysis of investment in human resources development, and overall management of HRD information.

### **3. Networking the Related Organizations for Human Resources Development Policies**

A policy network among the government, government funded research institutes and private research centers for the exchange of knowledge and policy collaboration is in place. Organizations can effectively conduct joint studies to develop and implement a policy agenda, thus, creating a synergy effect.

In particular, the government will create a knowledge foundation, so that policies concerning human resources can be developed and implemented scientifically and effectively.



### **The Ministerial Commission for Human Resources Development**

Since March 2000, the Minister of Education has presided over the Ministerial Commission for the Human Resources Development, which was proposed by the President. The commission is composed of 11 ministers and 2 presidential Secretariats related to HRD policy.

### **Networking Between Organizations on Human Resources Policies**

Korean Educational Development Institute (KEDI)

<http://www.kedi.re.kr>

Korea Research Institute for Vocational Education and Training (KRIVET)

<http://www.krivet.re.kr>

Korea Institute of Curriculum & Evaluation (KICE)

<http://www.kice.re.kr>

Korea Development Institute (KDI)

<http://www.kdi.re.kr>

Korea Labor Institute (KLI)

<http://www.kli.re.kr>

Human Resources Development Service of Korea

<http://www.hrdkorea.or.kr>

Korea Employment Promotion Agency for the Disabled

<http://www.kepad.or.kr>

# Vocational Training System in Korea

*Chul-Gyun Jung*  
*Ministry of Labour*

## . History of Vocational Training

○ Since the enactment of the 『Vocational Training Act』 in 1967, vocational training has played a pivotal role in the economic development of Korea by supplying skilled human resources in the process of industrialization.

○ With the enactment of the 『Basic Law on vocational training』 in 1976, a framework of compulsory vocational training system was established.

○ The law stipulated that employers conduct in-plant training for their employees every year and, if not, pay a certain amount of money as a training levy.

○ Since the introduction of the 『Employment Insurance System』 in July 1995, vocational training has become a part of Vocational Competence Development Program based on the employment insurance.

○ The point of vocational training has shifted to the development of employees' life-long vocational competence rather than training craftsman since then.

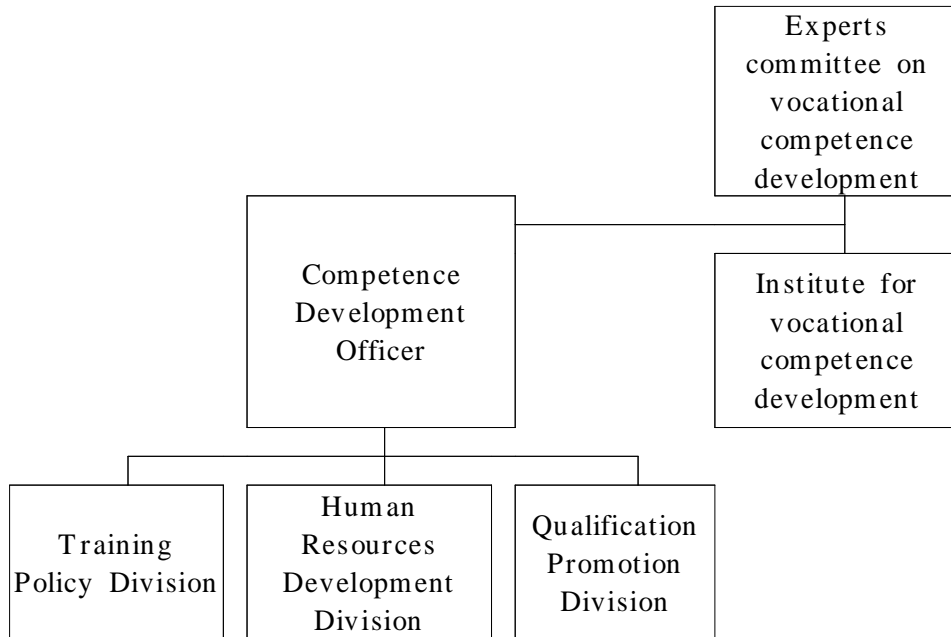
○ With the implementation of 『The Vocational Training Promotion Act for Employees』 in January 1999, the previous obligatory system of vocational training was abolished and flexibility in vocational training has increased considerably.

○ Participation from private sectors has increased and previous training centered on manufacturing industry has expanded to various fields such as office management and tertiary industries.

## . Vocational Training System

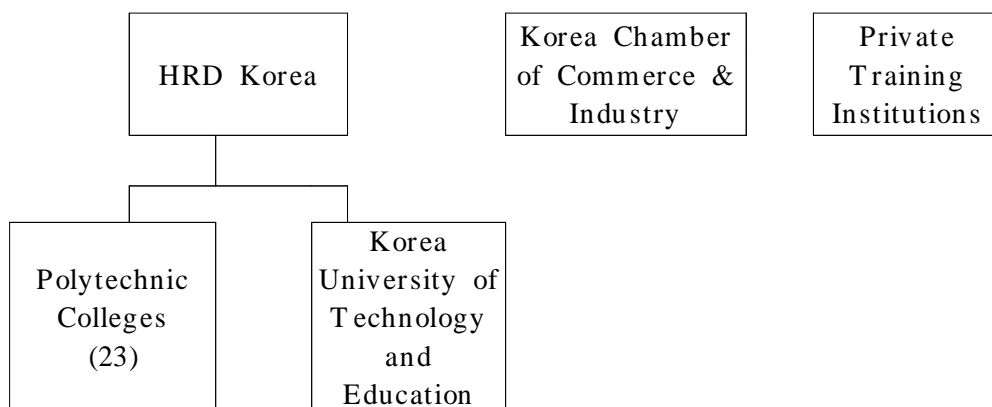
### 1. Organizational structure of vocational training

#### < Ministry of Labour >



Regional office : labour office(46), employment security center(168)

#### < Public and Private Sectors >



## **2. Public Vocational Training**

### **HRD Korea**

○ Established in 1982, it is responsible for comprehensive management of public vocational training.

○ Main functions lie in technical vocational training, employment promotion, R&D on vocational training and conducting national qualification test, etc.

○ There are 21 vocational training institutes and 22 regional offices as well as polytechnic colleges and Korea University of Technology and Education under the HRD Korea.

### **Polytechnic College**

○ Established in 1997, it aims at training multi-skilled technicians. Under the headquarters of Polytechnic Colleges, there are 23 regional polytechnic colleges. Graduates are awarded industrial associate degree upon completion of 2-year-course.

○ As many as 45 courses such as multi-media, mechatronics, information and telecommunication etc. are available.

### **Korea University of Technology and Education**

○ Established in 1992, it aims at training vocational training teachers well versed in both theories and practical skills. It also

provides upgrade and refresher training for the incumbent instructors and other authorities concerned in vocational competence development.

### **Vocational training institutes run by Korea Chamber of Commerce and Industry**

○ KCCI runs 8 training institutes carrying out government-commissioned training as well as training for the unemployed

### **3. Categories and Standards of Training**

#### **<1> Categories**

##### **Classification according to training contents**

- Basic training(one month or longer)
- To assist newcomers to the labour market or job seekers acquiring basic knowledge, skills and techniques for a job.
- Upgrade training(20 hours or longer)
- To improve and upgrade vocational competence of in-service workers.
- Job conversion training (2 weeks or longer)
- To support workers who plan to change jobs.

##### **Classification according to training methods**

- In-plant training, on-the-job training, tele-vocational training.

## **<2> Training Standards**

○ Subdivided into 『standard training』 and 『non-standard training』 according to whether the training complies with training criteria such as facilities, equipments, and teachers, etc.

○ Vocational training institutes providing standard training receive preferential treatment in terms of training subsidies and designation of training facilities.

## **<3> Training Instructors**

○ Standard training is conducted by training instructors with a certificate of training instructor. Training instructors are primarily educated at Korea University of Technology and Education(KUTE). Those who completed the course of teaching profession at the KUTE are able to apply for a training certificate to the Ministry of Labour.

○ Training instructors are classified into 3 grades according to the level of qualifications.

**< Classification of Training Instructors >**

	Qualification Criteria
1st grade	<ul style="list-style-type: none"> <li>· 2nd grade training instructor + more than 3years' job experiences in education and training</li> </ul>
2nd grade	<ul style="list-style-type: none"> <li>· 3rd grade training instructor + more than 3years' job experiences in education and training</li> <li>· professional engineer or master craftsman + vocational training designated by the Ministry of Labor</li> <li>· Full-time lecturer at over junior college level + more than 2years' job experiences in education and training</li> </ul>
3rd grade	<ul style="list-style-type: none"> <li>· University diploma in vocational training areas + a certificate of industrial technician</li> <li>· University diploma + 3years' job experiences in education and training</li> <li>· More than 7years' job experiences in education and training in occupation areas designated by the Ministry of Labor</li> </ul>



## . Program Contents

### 1. Vocational Competence Development Program of Employment Insurance

#### <1> Application Status(2001)

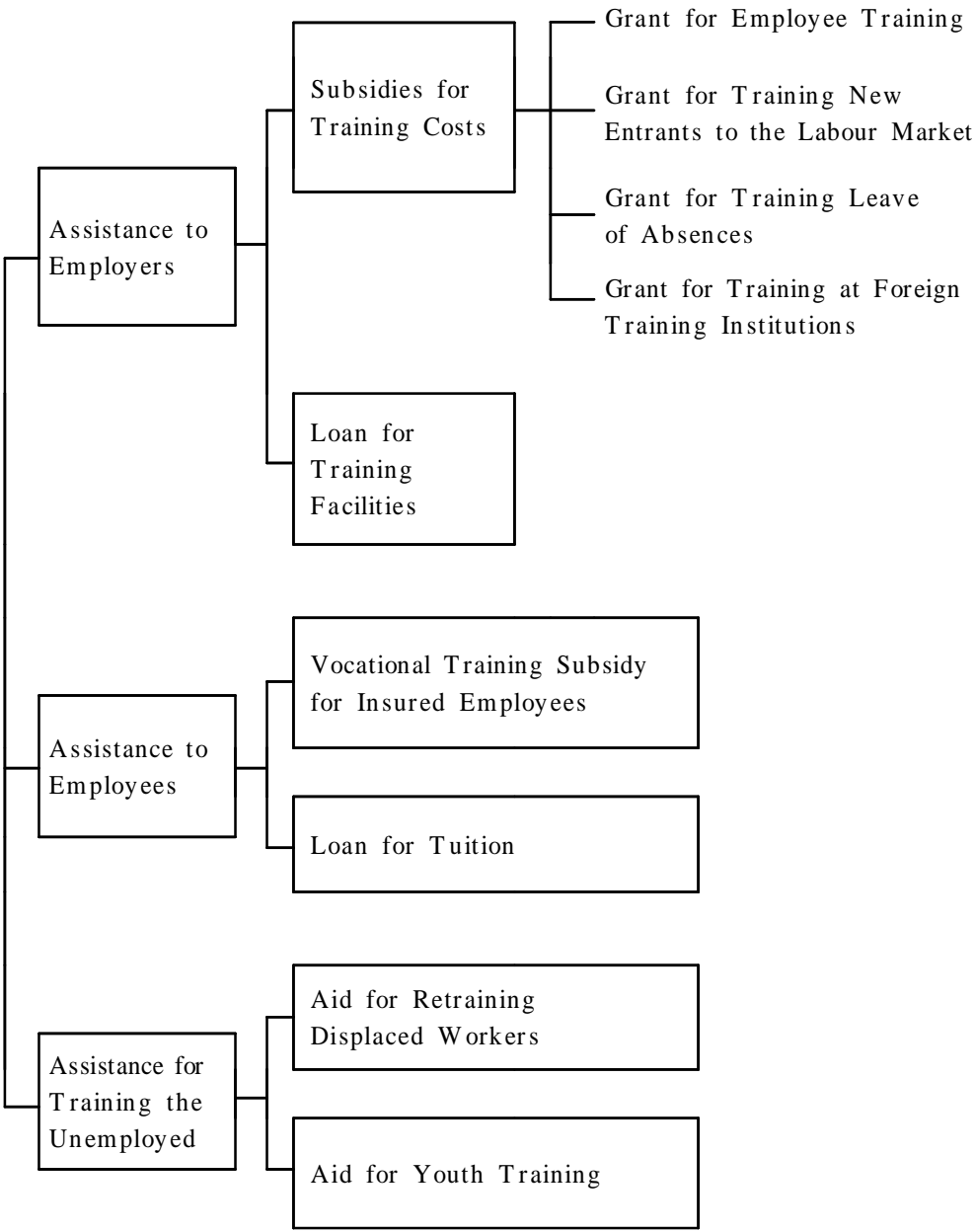
Unit : (%)

By size	Subtotal	Less than 5 workers	5 49	50 99	100 499	500 999	Over1,000
# of firms	806,962	552,928	225,375	14,616	12,101	1,161	781
# of workers	6,908,888 (100)	1,107,993 (16.0)	2,290,590 (33.1)	615,034 (8.9)	1,346,776 (19.5)	424,456 (6.2)	1,124,039 (16.3)

#### < Trends of Application Expansion >

	95. 7. 1	98. 1. 1	98. 3. 1	98. 7. 1	98. 10. 1
unemployment benefits	more than 30 workers	more than 10 workers	more than 5 workers	more than 5 workers	more than 1 worker
employment security job competence development	more than 70 workers	more than 50 workers	more than 50 workers	more than 5 workers	more than 1 worker

**<2> Structure of Vocational Competence Development Program**



### **<3> Support for Employers**

#### **Support for Vocational Competence Development Program**

○ Programs are offered by employers directly or professional training agencies. In this case, all training courses should be authorized or designated by regional labour officer beforehand.

○ Employers are able to conduct vocational training classified into basic training, upgrade training, and job conversion training according to the program contents. Employers can also conduct vocational training subdivided into in-plant training, on-the-job training and tele training according to training methods.

#### **Grant for training leave of absences**

○ If employers provide their employees with training on paid leave more than 30 days, the training costs and 100% to 120% of the minimum wages are subsidized for the employees.

#### **Loans for training facilities and equipments**

○ Employers or employers organizations are provided loans for training facilities and equipment installation expenses up to 90%(within the limit of 4 billion Won)

#### **<4> Support for employees**

##### **Training subsidies**

○ To support vocational competence development of workers who are to quit jobs involuntarily or are over 50 years old, subsidy is provided to cover 100% of their training expenses.

○ Maximum subsidy amount is 1 million won per person.

##### **Student loans**

○ Employees who entered or are currently attending junior college or university are provided student loans to cover their tuition at an annual interest rate of 1%.

##### **Re-employment training for the unemployed**

○ Workers, who were dismissed from companies covered by the Employment Insurance, are provided training expenses and allowances when they receive training for reemployment.

**<Performances of Vocational Competence Development Program(2001) >**

Unit : million won, (%)

Category	Total	Support for Owners		Support for the Insured		
		Vocational competence Development Training	Paid Leave of Absence Training	Tuition Grant	Workers' School Expenses-Loans	Re-employment training for the unemployed
# of firms participated	94,409	80,860	271	-	13,278	-
# of workers	1,728,821	1,555,402	8,611	40,045	21,658	103,105
Amount paid	379,646 (100)	170,413 (44.9)	10,145 (2.7)	3,543 (0.9)	43,036 (11.3)	152,509 (40.2)

**< Participation Rates by Firm Size(2001) >**

	Total	Less than 5 workers	5 ~ 49	50 ~ 299	300 ~ 999	more than 1000 workers
Insured workers	6,908,888	1,107,993	2,290,590	1,610,710	775,556	1,124,039
workers participated in Training	1,564,013	21,876	84,820	276,404	217,875	963,038
Rate of participation (%)	22.6	2.0	3.7	17.2	28.1	85.7

## 2. Other training support for unemployed workers

○ If unemployed workers, who are not covered by employment insurance, intend to find a job or start up their own business, financial support is available for the training financed by 『general accounts』 of the government.

○ Trainees are supported with training expenses and allowances(commutation allowances, meals expenses, family allowances etc).

## 3. Performances of Vocational Training(total)

(Unit : 1,000 persons, 100 million won)

Item	2000		2001	
	Number of trainees	Budget	Number of trainees	Budget
<b>Total</b>	<b>1,516</b>	<b>7,629</b>	<b>1,871</b>	<b>7,186</b>
Training for the unemployed	216	3,384	189	2,739
○ Training for reemployment	189	2,845	158	2,053
○ Training for human resources development	27	539	31	686
Upgrade Training for workers	1,239	1,751	1,617	2,170
○ Training for incumbent workers	1,220	1,405	1,555	1,704
○ Training subsidies and student loans	19	346	62	466
Training for skilled manpower	61	2,494	65	2,277
○ Training for multi-skilled technicians	59	2,294	63	2,082
○ Training for vocational training instructors	2	200	2	171

## **. National Qualification Testing System**

### **1. History of Qualification Testing System**

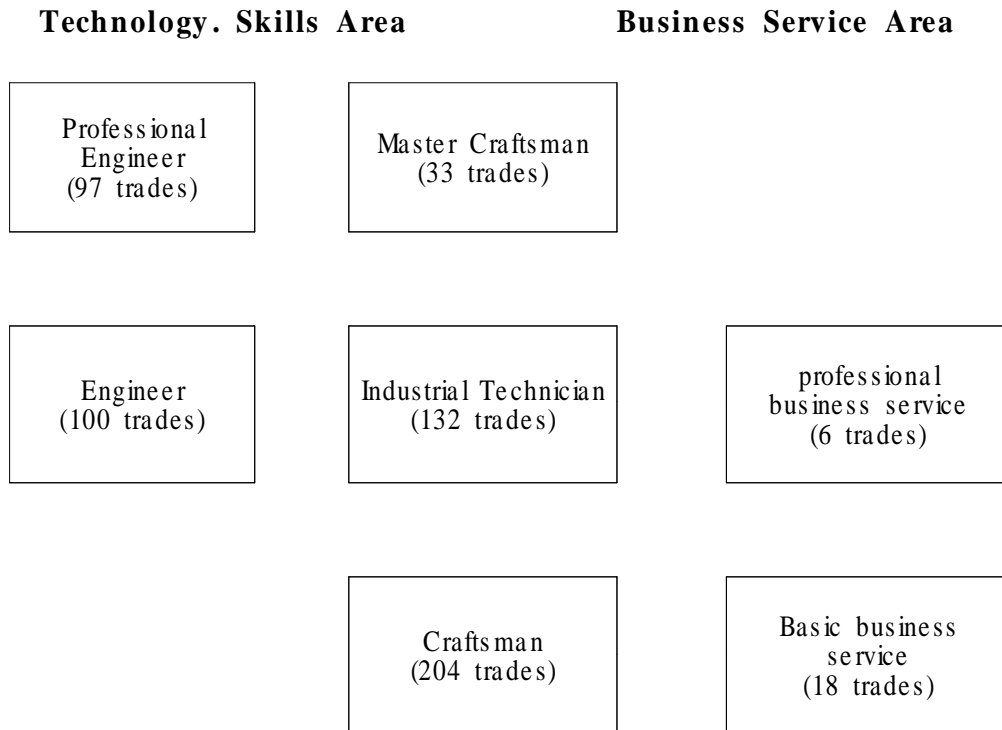
○ As economic development set out in earnest in the early 1960s, the qualification system in Korea entered into its initial stage in line with creation of various qualifications based on individual laws.

○ With the enactment of the National Technical Qualification Act in 1973, criteria and titles of technical qualifications were standardized to lay trustworthy grounds for national qualification system.

○ With the enactment of the Basic Law on Qualification in 1997, the qualification system was categorized into national qualifications and private ones, and managing subjects of the qualification system became varied.

## 2. Qualification System

### <1> National Qualifications : 590 trades



### <2> Private Qualifications

○ The introduction of the Basic Law on Qualification in 1997 activated private qualifications. There are various certificates in 248 trades such as credit analyst, stock market analyst, etc.



## . Financing Vocational Training

### 1. Sources of Funds

#### <1> Employment Insurance

##### Composition of Premium

○ The Employment Insurance System is composed of unemployment benefits, vocational competence development program and employment security program. When it comes to financing, the subjects of financing vary according to the contents of the program.

○ As for unemployment benefits, insurance premium is financed by both employers and employees at 50% respectively, while vocational competence development & employment security programs are financed by employers only.

##### Premium Rate

(percentage of total wage)

Classification	Employees	Employers
Unemployment Benefits	0.5	0.5
Employment Security Program		0.3
Vocational Competence Development Program		0.1 0.7 (depending on the size of firms)

## <2> General Accounts

○ For the unemployed not covered by the Employment Insurance System, the government provides financial support with funds of general accounts.

### 2. Budget(for the year 2002)

(Unit : 1,000 persons, 100 million won)

Classification	Number of beneficiaries	Budget		
		Total	Funds	General Accounts
<b>Total</b>	<b>1,751</b>	<b>8,445</b>	<b>6,293</b>	<b>2,152</b>
○ Training for the unemployed	150	<b>3,174</b>	2,518	656
○ Upgrade training for workers	1,537	<b>2,711</b>	2,711	-
○ Training for skilled manpower	64	<b>2,560</b>	1,064	1,496

## **. Future Directions for Vocational Training**

### **1. Recent Changes in the Labour Market**

During the financial crisis, the unemployment rate reached its peak in February 1999, at 8.6% or 1.78 million unemployed people.

The labour market situation has currently become stable in terms of unemployment level, approaching the pre-crisis unemployment rate of about 3 percent (As of May, 2002 unemployment rate 2.9%, unemployed people 0.66 million)

In the wake of the financial crisis, on the one hand and with the development of the knowledge-based economy, on the other, the Korean labour market has undergone drastic changes.

Globalization and technological development create new opportunities for economic development while, at the same time, they bring about an increasing demand for human capacity and pose new challenges for human capacity development.

### **Imbalances between demand for and supply of labour**

○ With the economy becoming more knowledge-intensive, the demand for highly skilled workers is increasing while the demand for low skilled workers is diminishing, creating an imbalance in the supply of human resources to the labour market.

**< Employment Outlook by Technology Level in Manufacturing Sector >**

Unit: 1,000 employees(%)

Category	2000	2005	2010	Annual average growth rate
Medium to highly skilled / ICT Manufacturing	1,516 (36.0)	1,728 (39.4)	1,877 (42.6)	2.15
Low to medium skill / technology manufacturing	1,065 (25.3)	1,079 (24.6)	1,027 (23.3)	- 0.37
Low skill / light-heavy manufacturing	1,630 (38.7)	1,579 (36.0)	1,502 (34.1)	- 0.81
Total	4,213 (100)	4,388 (100)	4,406 (100)	0.45

Source : Knowledge Economy and Prospects for HR Demand(KLI, 2000.10)

**Employment patterns become varied**

○ With the advancement of information society, production organization and decision-making methods have transformed into more flexible systems with increased responsiveness to market changes.

○ Horizontal and slim organizational structures, decentralization of decision making structures, etc.

○ Diversification of employment types including tele-working, contracting, short-term employment, etc.

In the EU community, approximately 9 million people(6% of all workers) were working from home, based on 1999 data.

In the U.S., about 16 million(13% of all workers) were working from home in 1998.<OECD, June 2001>

### **Changes in labour force supply**

○ The population growth rate has diminished, the labour force has become older and more educated with the number of female workers increasing.

Continuous decline in productive age(15 to 64) ratio per national population is expected to diminish from 71.2% in 2000 to 70% by 2010 and 65% by 2030.

○ Due to increased higher education advancement, the target of initial vocational training has declined dramatically.

### **< Trends in High School Graduates Entering College >**

Category	1970	1985	1995	2000
College Entrance Rate(average)	26.9%	36.4%	51.4%	68.0%
Academic high schools	40.2%	53.8%	72.8%	83.9%
Vocational high schools	9.6%	13.3%	19.2%	42.0%

Source : Ministry of Education and Human Resources Development, Educational Statistics Yearbook for each year

### **Reductions in HRD investment**

○ Due to high workforce turnover rate and other external factors(poaching, wage inflation, etc.), businesses have reduced investment in human resources development and have preferred recruit skilled workers from the external labour market.

○ Due to unstable employment environments, particularly for low-skilled workers, businesses tend to avoid investments in human resource development.

○ In the knowledge economy, the need for workers to develop competence on their own has increased due to external market factors.

#### **<Expenditures on education and training out of total labour costs>**

'95	'96	'97	'98	'99	2000	2001
1.5%	2.1%	1.9%	1.2%	1.4%	1.4%	1.4%

Report on labour costs in enterprises

### **Knowledge Gap**

○ Barriers to access to knowledge and information may result in poor employment opportunities and income inequalities, possibly causing vicious circle of poverty.

○ Income gaps between workers become widened as unemployment periods become longer due to skill shortages. The less educated and less skilled the worker, the higher the risk of unemployment.

**<Correlation Between Unemployment by Skill Level and Market Condition Changes>**

○ · According to ILO analysis of correlation between unemployment by skill level and market condition changes in OECD member countries from 1985-1996, when GDP declined by 1% during economic recession the unemployment rate for low-skilled workers increased by about 23% while those highly skilled remained essentially unaffected.

○ · Further analysis showed that in times of flourishing business unemployment rate for low-skilled workers reduced by about 4.8% with a 1% GDP increase whereas that of highly skilled workers decreased by about 2.1%.

○ Labour market polarization becomes deepened due to winner-takes-all principle and vicious poverty cycles etc.

**< Current Internet Usage Rate  
Status (May 2000) >**

- Age : Users in their twenties(60.0%) / over fifty(4.9%)
- Income : Over 4 million won per month(53.4%) / less than 1 million won per month(25.4%)
- Occupation : Office workers(64.0%) / agriculture and fishery workers(7.3%)
- Education : above graduate school(62.4%) / lower than middle school(1.9%)

Source : Administration and Computer Science, March 2001

## **2. Policy Issues for Further Development**

### **<1> Expansion of the training infrastructure**

○ The government has strengthened Human Resources Information system(HRIS) to help trainees access to information on training courses or qualifications.

○ Given the rapidly changing industrial needs, training facilities and equipments need to be upgraded toward knowledge based trades. In addition, attaining qualified training instructors becomes an urgent policy concern to improve the effectiveness of vocational training.

### **<2> Coordinating roles of public training and private training**

○ The public sector should play a role of infrastructure in vocational training by training workers needed for sophisticated industries along with the disadvantaged in the labour market. In addition, it should collect and disseminate information of vocational training for the private sector.

○ Meanwhile, the private sector should meet the ever changing training needs promptly, through training for various trades.



### **<3> Support for life long learning**

#### **Support for employers**

○ Due to rapid technological development and globalization, employers tend to be reluctant to invest in human resources development. Instead they prefer to employ readily available workers. Against this backdrop, employers' efforts to develop human resources need to be encouraged with various incentives.

○ Benefits of employment insurance should be extended and various incentives including tax credit should be offered to employers in a bid to attract investment in training.

○ A variety of supporting activities are necessary in building HRD system in enterprises and establishing 『vocational training consortium』 for small and medium-sized enterprises is also recommended.

#### **Support for employees**

○ Training subsidies by means of employment insurance need to be expanded for employees and public vocational training institutions can also play a role of life-long learning center for the sake of community residents.

○ Taking advantage of the digital environment, various services including 『distance-learning』 via internet are also encouraged.

### < Broadband Internet Access Rate >

(Unit: %)

Korea	Canada	U.S.A	Japan
9.20	3.91	2.25	0.5

Access rate : the number of Internet users to 100 persons(as of the end of 2000)

Source : OECD, 2001. 5.

#### <4> Increase in public recognition of the qualification system

○ In order for the qualification system to function properly, it is imperative to keep up with rapid changes in occupations. In this respect, participation from industries, trade unions and field experts is encouraged to make new qualifications and training criteria meet current industrial trends.

○ National recognition is necessary to activate the private qualification system. Also, qualifications approved and recognized within industries should be developed.

#### <5> Bridging the digital divide

○ Under the knowledge based economy, unequal access to new technology and to learning has become a major policy concern. To close the digital divide the followings are recommended:

○ · expanding continuous education and training opportunities for workers in small and medium-sized enterprises in particular;

○ · assisting human resources development for the disadvantaged in the labour market such as women, the handicapped, school dropouts etc;

○ · improving the effectiveness of vocational training for the unemployed with in-depth counseling and target specific training.

**< Continuous education rate for adult(25-64 years old) >**

(Unit: %)

Korea	U.S.A	Canada	France	Germany
5.4	34.0	28.0	40.0	33.0

Source : OECD, Education at a Glance, 1999.

**<6> Strengthening Partnership between Shareholders**

○ The changing nature of the labour market needs a new approach to human resources development. Enhanced involvement of shareholders in HRD offers the potential to bring about better outcomes.

○ Major shareholders : trade unions, employers, training providers, communities etc.

○ The Tripartite Commission composed of the representatives of labour, management and government, reached an agreement on vocational training reform in July, 2001.

○ Providing trade unions with training fund to facilitate vocational training

○ Enhancing the involvement of labour and management in the decision making process for vocational training etc.

○ Regarding to partnership, cooperation between industries and educational institutions, these relationships are especially important to make education and training meet the industrial demands.

# **Training and Management of Vocational Training Instructors 5)**

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*Korea University of Technology & Education*

## **I. Qualification System of the Vocational Training Instructors**

### **1. A brief history of the qualification system for vocational training instructors**

As shown in the table I-1, in 1967, there's only one grade level for vocational training instructors. To be a training instructor, a candidate must have a "first level craftsman certificate" or they have to pass the national exam for vocational instructors.

In 1987, several types of vocational instructors were identified and grouped into five areas training such as: craftsman , clerical & service, supervisor, manager, and training instructors. Among them, the main area of vocational instructor was craftsman training courses. Note: Qualification standards of each type of vocational instructors are in table I-1.

In 1994, all types of vocational training instructors were further simplified to be categorized as a 'specialty instructor'. To cope with the rapid change in industry structures and in technology development, a "speciality" instructor system was introduced into the regular training system. New job types were created and many companies needed to apply for the new technology. In this

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5) This report is the copy from the research "Oh, Young hoon, et. el, (2000). The Improvement of Qualification System in Vocational Training Instructor. KRIVET"

situation, various types of training instructors were in demand and it was very complicated to classify the types of training instructors and the grade levels of the trainers.

Therefore, Ministry of Labor determined to simplify the types and the levels of training instructor.

In 1999, according to the "Worker's Vocational Training Promotion Act", the classroom training instructors and workplace instructors were united as "training instructors of vocational competency development". The types of vocational training were divided into 'standard training' and 'training for vocational competency development'. Note: Concerning the 'standard training', the qualification standards of training instructors were affected by this regulation.

In case of 'training for vocational competency development', it was decided that anyone who has knowledge and skills in training subjects could be a "training instructor of vocational competency development". Observing this background of these regulations, it seems that a free market system was introduced into the businesses in order to get around governmental control over the company. Therefore, companies could implement their own training programs by using the experienced workers as a training instructor and they could easily acquire government funds for vocational training.

**Table I-1. Change of qualification standards in vocational training instructors >**

	Types of Instructors	Grade Level	Qualification Standards
May 10, 1967	Vocational Training Instructor	One grade	- 1st class craftsman certificates holders - Persons who pass the exam for vocational instructors
Jan. 1, 1987	Craftsman Course	Specialty Instructor (I)	Three - 1st Class craftsman certificates holders + 1st Class engineer certificates holders
		Specialty Instructor (II)	Three - 1st Class craftsman certificates holders + work experience
		General Instructor	Three - Univ. graduates + educational experience
	Clerical & Service Instructor	Three	- Poly-tech college graduates + work experience.
	Supervisor Training Instructors	One	- Univ. graduates + educational, work experience
	Manager Training Instructors	One	- The same above
Training the Training Instructors	One	- Univ. faculty regulated by 'Education Law'	
June 27, 1994	Specialty Instructor	No grades	- Specialty instructor system was introduced against the training to be conducted in difficulty by training instructors, such training as new technical field, new job types, etc. - College or Univ. faculty members - Researchers or educational staffs in research institutes - Professional engineer, master craftsman, 1st class engineer certificate holders. - Company workers who has work experience related to the training courses.
Jan. 1, 1999	Training instructor of vocational competency development	Three	- The names of specialty and general instructors(both are three grades), are changed to "training instructors of vocational competency development"(three grades) - The details of instructor qualifications are regulated by "Worker's Vocational Training Promotion Act"
	Workplace training instructors	Three	- Changed to 'training instructor of vocational competency development'

source: 1) Oh, Young-hoon.(1994). The present and future issues in basic training and retraining of vocational training instructors. KUT.

2) Ministry of Labor(1999), guidelines of qualification 'training instructor of vocational competency development'

## **2. The Qualification System for Vocational Training Instructors**

As mentioned II-1, training instructors are divided to "training instructors of vocational competency development" and basically, "the person who has knowledge and skills in training subjects". There are 95 job titles for training instructors, which encompass 23 occupation areas. Qualification standards of the "training instructors of vocational competency development" are as the following table (see, table II-2).

Basically, to be a training instructor, a candidate should have a engineer (or craftsman) certificate and have certain teaching competencies. Also, they should have some educational (training or work) experience. To obtain these teaching competencies, (generally) a candidate needs to complete the teaching courses offered by the KUT (Korea Univ. of Technology & Education) recognized by the MOL (Ministry of Labor). In case of clerical & service job or the general subjects, secondary school teacher certificate, which is managed by the Ministry of Education & HRD (Human Resources Development), replaces the teaching courses.

Of the job titles for training instructors, 38 job titles are occupied by the persons who have over bachelor degrees, more than the 3 years of educational (training or work) experience and/ or complete training course regulated by the Ministry of Labor. In addition, 74 job titles are occupied by the persons who have more than 7 years educational(training or work) experience recognized by the Ministry of Labor plus have completed a training course regulated by the Ministry of Labor.

Regarding the qualification of training instructors, the so called " person who has knowledge and skills in training subjects", generally, they might be a graduate from junior college or



university, who has educational (training or work) experience or has research experience or get a national certificate, etc. Technically speaking, it is regulated that anyone, who has more than 1 year experience (education, training, work, etc), could be a training instructor.

### **. Training Courses of the Vocational Training Instructors**

The first training institute for vocational training instructors in Korea was the Central Vocational Training Institute (present; changed to In-Cheon Poly Tech College), which was established in 1968. This institute offered a two year specialty course(s) to make technician and short term course to make vocational teachers. To train the quality vocational teachers, Korea University of Technology and Education (KUT) was established in 1991. In relation to courses for training instructors, KUT offered basic training courses (4years), upgrade training courses (4weeks) and license courses (4weeks).

**Table 1-2. Qualification standards of 'training instructors of vocational competency development' (executing code, 5. Ministry of Labor)**

grade level	qualification standards
1st grade	the 2nd grade training instructor + more than 3years educational(training) experience + completing upgrade training course
2nd grade	the 3rd grade training instructor + more than 3years educational(training) experience + completing upgrade training course professional engineer certificate or master craftsman certificate + completing training course regulated by the Ministry of Labor full time instructor in junior college or poly tech college + more than 2years educational (training) experience.
3rd grade	graduates of Korea Univ. Technology & Education + industrial engineer certificate. bachelor degree relating to the training field recognized by the Ministry of Labor + more than 3years educational(training) experience + completing training course regulated by the Ministry of Labor secondary school teacher relating to the clerical & service job types, or the person who has the practice teacher certificate. bachelor degree relating to the general subjects + more than 3years educational(training or work) experience + completing training course regulated by the Ministry of Labor, or the person who has the secondary school teacher certificate relating to the general subjects(or training fields) engineer certificate + more than 1year educational(training or work) experience + completing training course regulated by the Ministry of Labor, industrial engineer certificate + more than 3years educational(training or work) experience + completing training course regulated by the Ministry of Labor, certificate relating to craftsman or clerical & service job + more than 5years educational (training or work) experience + completing training course regulated by the Ministry of Labor more than 7years educational(training or work) experience recognized by the Ministry of Labor + completing training course regulated by the Ministry of Labor Fit to the standards published by the codes of the Ministry of Labor + completing training course regulated by the Ministry of Labor

## **1. Basic training course for a vocational instructor**

The Korea University of Technology and Education(KUT) has been established with the purpose of training instructors well versed in both theory and practice in their respective fields. There are 4 schools including 12 programs, 6 departments in KUT. The more details are as follows:

School of Mechanical Engineering: Program of Automobile · environment · energy, Program of Information Applied System,

School of Mechatronics Engineering: Program of System Design, Program of Nano- Technology

School of Information Technology: Program of Electrical Engineering, Program of Electronics Engineering, Program of Information & Communication Engineering, Program of Computer Engineering, Program of Multi-Media

School of Industrial Management: Program of Technology Management, Program of Human resource Management, Program of e-business

Department of Control Systems Engineering, Department of Industrial Design Engineering, Department of Architectural Engineering, Department of Materials Engineering, Department of Applied Chemical Engineering, Department of Liberal Arts & Education

Note: All graduates from KUT will not received the training instructor's certificate. Only those who obtain the industrial engineer or engineer certificate can obtain an instructor's certificate at the 3rd level.

**Table . Training institutes, entrance requirements, training term by training courses for training instructor**

<b>Courses</b>	<b>Training Institutes</b>	<b>Entrance Requirements</b>	<b>Training Period</b>
Basic Training	KUT funded by HRD Service of Korea	Those who are entitled to take a college entrance exam regulated by 'High Level Education Law'	4 years
Upgrade Training	KUT funded by HRD Service of Korea Training institutes approved by Ministry of Labor	Those who obtained the training instructor's certificate and are engaging in the training for vocational competency development Those who obtained the training instructor's certificate and try to get the certificate of higher level grade	More than 1 week
Teaching/ Profession Training	KUT funded by HRD Service of Korea Training institutes approved by Ministry of Labor	See <table I- 1>, 3rd grade level	More than 1 week

## **2. Professional Training Courses for Teachers (Instructors)**

### **2-1. Management**

Notably, 80% of the total training instructors completed this training course. The objects of this course are for those who have already knowledge and skills in their "training" fields. This course mainly includes education related subjects such as training methods, theory and practice in vocational education, etc. Training term is more than 4 weeks(140 hours) and less than 6 weeks(210 hours) for the specialty instructors.

**Table -1. Contents of the professional training course for teachers**

**(Notification 99-39, Ministry of Labor)**

Course	Subjects/ Organizations			Standards of Training Facilities
	Area	Contents	Term(s)	
Specialty Instructors Course	General subjects (20%)	Vocational training & related act	4weeks (140hours)	Classroom Audio-Visual room Educational Materials.
	Teaching Profession Subjects (80%)	· Overview of training for vocational competency development · Training methods · Methods in teaching practice	-  6 weeks (210hours)	
	General Subject (20%)	Vocational training & related act	1week (35hours)	
General Subjects Instructors Course	Teaching Profession Subjects (80%)	· Overview of training for vocational competency development	- 2 weeks (70hours)	

**2-2. Present situation in completion of teaching profession training course**

From september 1998 to september 2000, 1,794 persons completed this course. Among them, male (51.1%) was slightly more than female(48.9%). Regarding the age, 30s were 50.2%, 40s were 29.3%, over the 50s were 8.6%. Overall, 30s and 40s comprised around 80%, the average age was 37.9.

**Table II-2. Teaching profession training course by gender and age**

Gender	20s	30s	40s	50s	Over 60s	Mean	Total
Male	90(10.2)	516(57.3)	224(24.9)	62(6.8)	8(.9)	37.4 yrs old	901(100)
Female	118(13.7)	370(42.9)	293(34.0)	71(8.2)	11(1.3)	38.5 yrs old	863(100)
Total	210(11.9)	886(50.2)	517(29.3)	132(7.5)	19(1.1)	37.9 yrs old	1764(100)

source: KUT(2000), unpublished documents.

**Table II-3. Numbers and types of professional training courses**

Job Types	1998	1999	2000	Total
Metal Materials & Manufacturing	73(21.9)	179(18.6)	61(13.1)	313(17.7)
Metal Processing	2(.6)	2(.2)	1(.2)	5(.3)
Chemical Engineering & Ceramics	1(.3)	3(.3)		4(.2)
Electricity	21(6.3)	24(2.5)	11(2.4)	56(3.2)
Electronics	10(3.3)	15(1.6)	12(2.6)	37(2.1)
Communications	3(.9)	15(1.6)	9(1.9)	27(1.5)
Airplanes	2(.6)	11(1.1)		13(.7)
Civil Engineering	1(.3)	3(.3)		4(.2)
Construction	28(8.4)	39(4.0)	13(2.8)	80(4.5)
Textiles	12(3.6)	41(4.3)	24(5.1)	77(4.4)
Mining	3(.9)			3(.2)
Information Processing	36(10.8)	144(14.9)	58(12.4)	238(13.5)
Agriculture & Forestry		3(.3)	1(.2)	4(.2)
Handicrafts	1(.3)	10(1.0)	9(1.9)	20(1.1)
Industrial Appliances	9(2.7)	39(4.0)	22(4.7)	70(4.0)
Service	127(38.1)	418(43.4)	225(48.2)	770(43.7)
Clerical (Office Workers)	2(.6)	10(1.0)	16(3.4)	28(1.6)
Bank & Insurance		2(.2)	1(.2)	3(.2)
Medical Work	1(.3)	3(.3)	3(.6)	7(.4)
General Subjects	1(.3)	3(.3)	1(.2)	5(.3)
<b>Total</b>	333(100)	964(100)	467(100)	1764(100)

As shown on the <table II-3>, service area was the top, which appeared 43.7%, and machinery was 17.7%, information processing area was 13.5%. Observing the more detailed data in terms of the job level, hair designer was 29.0%, information processing was 13.5%, car repair and maintenance was 7.5%, cooking was 7.4%, confectionary was 5.2%, fashion was 4.1%, respectively.

Analyzing the trends of increase rates by year, service, industry, textile, and clerical job types were shown increasing continuously, on the other hand, machinery, information processing, construction areas declined in numbers of participants.

### **. The Present Situation in Upgrading & Updating Training of Vocational Training Instructors**

The total number of vocational training instructors was 29,141, from 1968 to 1999. Among them, 38.7% were from basic training course(2-4year course) and 61.3% were from teaching profession course(more than 4weeks).

**Table . total number of vocational training instructors by course**

Basic Training Course	Professional Teaching Course	Total
11,284(38.7%)	17,858(61.3%)	29,141(100.0%)

source: Ministry of Labor(2000). Vocational training in Korea, pp 84-85.

HRD Service of Korea(1997). unpublished documents

KUT(2000). unpublished documents.

The training for vocational training instructors could be divided into two areas, upgrading training and updating training for current instructors.

### **1. Upgrade Training**

Upgrade training is designed for training instructor upgrade to a higher grade level certificate. The term of this training ranges from 2 weeks (70 hours) to 3 weeks (105 hours), which is regulated by notifications of the Ministry of Labor. Currently, this training is conducted for 2 weeks (70 hours) course, and consisted of general subjects (20%), education related subjects (40%), and specialty subjects (40%). (see <table III-1>).

As shown on the <table III-2>, compares the total number of training instructors. Only small parts of the instructors participated in the upgrading training. One of the reasons is that there is little advantage such as payment, promotion, etc. after completing this course. In case of the private training institute, the upgrading training showed less advantages than the public training institute.



**Table -1. Contents of the upgrade training course**

**(Notification 99-39, Ministry of Labor)**

Subjects/Organizations			Standards of Training Facilities
Area	Contents	Term(s)	
General Subjects (20%)	<ul style="list-style-type: none"> <li>· Issues in vocational training</li> <li>· Employer-employee related actions</li> </ul>		Classrooms Audio- Visual Rooms Educational material etc..  Practice Room Equipment
Teaching Professiona l Subjects (80%)	<ul style="list-style-type: none"> <li>· Practice in Educational Psychology (I, II)</li> <li>· Subjects Teaching Methods (I, II)</li> <li>· Campus Life Guidance Methods (I, II)</li> <li>· Administration &amp; Management in Vocational Competency Development Training (I, II)</li> </ul>	2 weeks (70hours)  -  3 weeks (105hours)	
Specialty Subjects (40%)	<ul style="list-style-type: none"> <li>· Theory and Practice</li> </ul>		

**Table -2. Participants in upgrade training**

Grade Level	1999	2000	Total
1st Grade	107(46.7)	62(36.3)	169(42.3)
2nd Grade	122(53.3)	109(63.7)	231(57.7)
<b>Total</b>	229(100)	171(100)	400(100)

## 2. Update training

Update training is designed for training instructors to acquire new knowledge and skills for their specialties. It is regulated that the term of this training is more than 1 week, however, every training institute can determine the contents and schedule flexibly by their own needs.

<table III-3> shows that new technology training program appeared 90.7% among all Update Training Programs conducted in KUT, for the last three years. The participants of this program consisted of the workers from business and industry as well as teaching staff. These teachers were from vocational education institutes and vocational training institutes such as: training instructor, faculty members in junior college, poly- tech college, universities, and vocational high school teachers, etc. Training costs of this program are all free except transportation cost of each participants.

**Table -3. Participants of update training programs in KUT**

(Unit: numbers of participants, %)

<b>Programs</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>Total</b>
HRD Staffs Training		157	78	235(2.4)
Training for Training Instructor	148	167	378	693(6.9)
New Technology Training	299	4,243	4,599	9,071(90.7)
<b>Total</b>	<b>377</b>	<b>4,567</b>	<b>5,055</b>	<b>9,999(100.0)</b>

Training for HRD (human resources development) staff is designed for training instructors in vocational training institutes and trainers

in business & industry to develop the training programs. This course includes: "needs" analysis, planning, developing, implementing, evaluating, and analysing of outcomes of the training program. This program requires 3days.

Training for training instructor includes short term programs such as language course for 4 weeks, career guidance and counselling course for 5 days and teaching methods course for 3 days.

## **. Discussion**

The qualification methods for vocational training instructors and the promoting vocational training has been widely discussed as well as revised throughout the years. The alleviating regulation of eligibility requirements by allowing, in addition to certified training instructors, individuals who are able to meet certain requirements (professionally, social position or otherwise). These variables have further raised the questions of how far regulation should be expanded, contracted or be left in its current condition.

The current qualification system of training instructors is classified into three levels, but with the exception of public institutions instructors, most institutes hold the lowest grade of qualification. In private training institutions, it is estimated that 80% of instructors have not completed training for acquiring higher grade qualifications mainly because there exist no incentives for them to do so.

In terms of their social positions, training instructors are not recognized by the Ministry of Education & Human Resources Development as regular teachers under the national law. This problem hinders the growth of professionalism among training

instructors. In conclusion, the training instructor qualification system must work to ensure professionalism and raise social credibility as well as support from the government concerning these matters.

# **Management of Vocational Training Institution**

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## **I. An Overview of the Vocational Training Institutions in Korea**

Vocational Training(VT) is defined as the activities aiming at providing the skills, knowledge and attitudes required for employment in a particular occupation. In this point of a view, Vocational Education(VE) has the same feature as VT, even though VE is much more emphasizing basic concept and personal than VT. But these two terminologies are used generally in the same meaning, therefore many international organizations, ILO, UNDP and OECD etc., are utilizing VET(Vocational Education and Training) as a unified terminology.

In Korea, traditionally, VE and VT are governed by the Ministry of Education (MOE) and the Ministry of Labor (MOL) respectively, same features in France and East Asian Countries. MOL of Korea performs a role of controlling of labor market and, if there is a mismatch in the demand and supply of the market, the Ministry analyzes the reasons and stands as a countermeasure.

In order to deal with this circumstance, the MOL intervenes actively into the market sometimes. As a part of these activities, various types of the public vocational training institutions(VTIs) are

established to train vocational manpower by the central or the local governments. The private VTIs are a well-known institutions in Korea and most of them belongs to the enterprises, the business owners or the association of them as shown in <Table 1>.

**Table 1. Types of VTIs in Korea**

Type		Number	Feature
<b>Total</b>		2,637	
<b>Public VTI</b>	Sub-Total	97	
	Public Org.	54	Run by Public Organizations: - HRD Korea, KOPO, KCCI, KEPAD
	Local Govern.	7	Seoul City, Gyeonggi and Gyeongnam Province
	Min. of Justice	36	Inmates' Vocational Competency
<b>Private VTI</b>	Sub-Total	2,540	
	Trg. Corporation	84	Run by Non-Profit Corporations
	WRD Center	24	Run for Women's Vocational Competency
	MOL Designated	278	Individual Designated as Training Facilities
	Others	2,154	Business Owners or Associations. etc.

<Remarks> HRD : Human Resources Development  
 KOPO : Korea Foundation of Polytechnic College  
 KCCI : Korea Chamber of Commerce and Industry  
 KEPAD : Korea Employment Promotion Agency for the Disabled  
 WRD : Women Resources Development

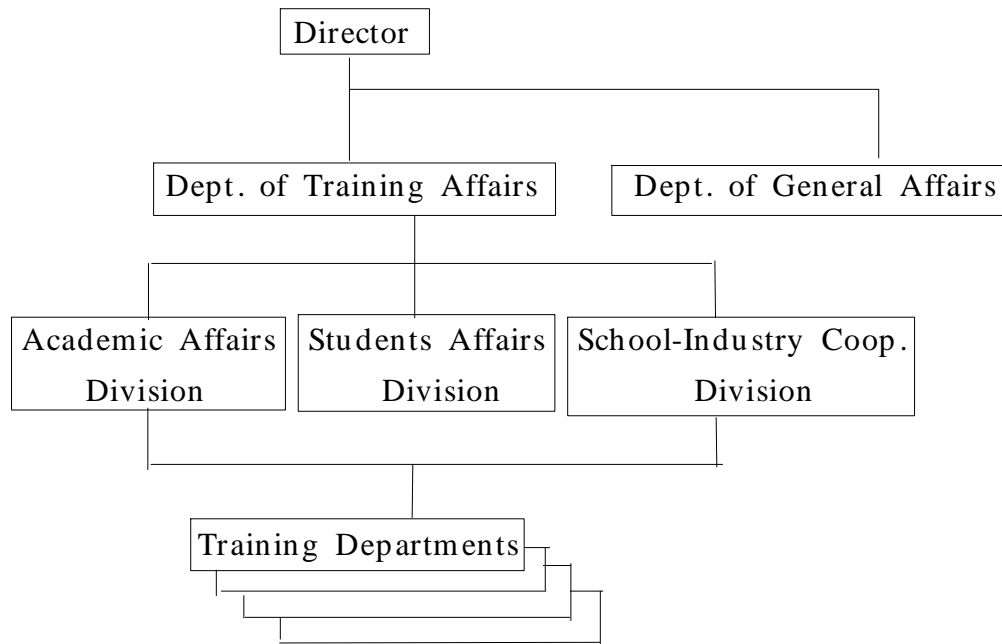
All the types of vocational training are performed and supported by the Vocational Training Promotion Act for Employees enacted in 1999, which replaced the Basic Law for Vocational Training. With the new Act, the obligatory vocational training system was abolished. A new vocational training system was then established; encompassing the vocational competency development project under the Employment Insurance System(EIS). EIS is the most

active unemployment insurance system including employment security project and vocational competency development project.

An organization of VTI is formed with the willing to develop and to manage efficiently the institution, sometimes depends on its scale related to the number of students. Generally Korean VTIs, whether a public VTI or not, have similar aspects as shown in (Fig.1).

The training affairs department performs a role of all kinds of training affairs, including: development of training curriculum, entrance affairs of students, management of training, acquiring jobs for students and cooperation with industries. While the general affairs department performs all kinds of general support affairs, including: management of facilities, accounting and purchasing materials for the training, etc. A director or a principal is the representative of the institution and a director of training affairs department manages all the training affairs as a deputy director of the institution.

There are three divisions in the training affairs department they are: academic affairs division, students affairs division and school-industry cooperation division. In these divisions, affairs are performed by the some instructors dispatched from training departments, while the general affairs department by general affair staffs.

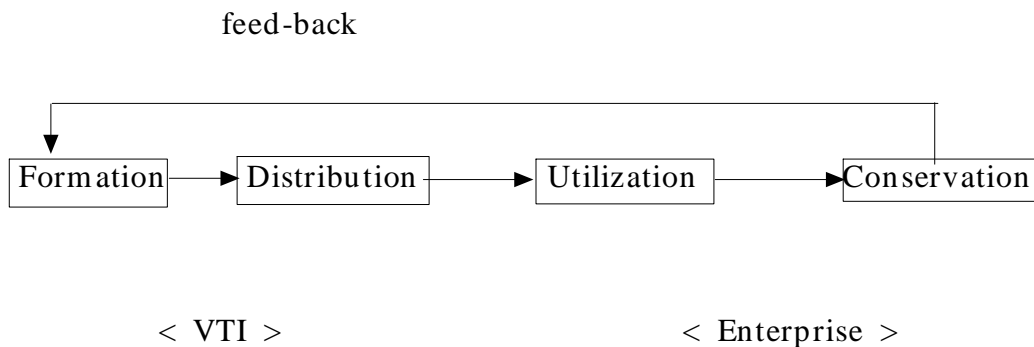


**(Fig.1) The Organization of VTIs**

**. Consideration for the General Roles of VTI**

Generally VTI performs many roles, the most important role of them is to train the vocational manpower who are needed by the industrial societies. In (Fig.2) a basic paradigm related to vocational education and training is shown. Here, formation means training in VTI, distribution means sending the graduates of the institution to the industry, utilization means all kinds of the employee's activities in the industry and conservation means accumulation of experiences including all types of the training, re-training and upgrade training for the development of personal competency continuously. If some needs appear in the process, it should be sent(feed back) to the initial step.





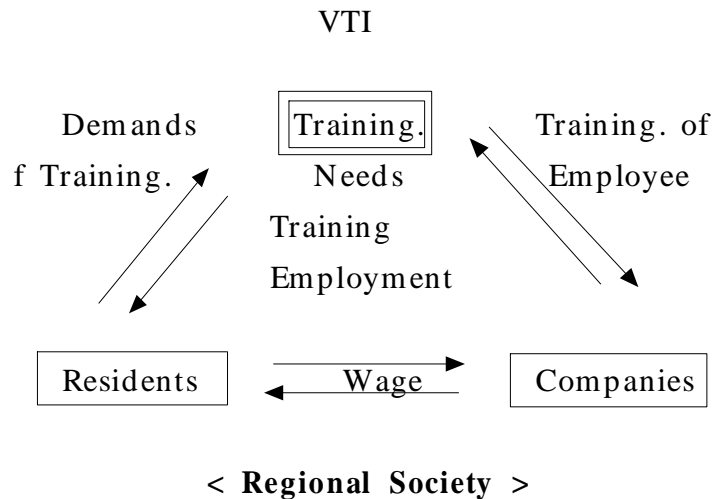
**(Fig.2) A Paradigm of VET**

To train vocational manpower, the most of VTIs open various train courses. The initial training course is the main course in the most of VTIs, because of the high demands from industry. This course is implemented in the type of school-based training for one or two years, including some on-the-job training in the company. In this course a student can be a vocational manpower who has a vocational competency, knowledge, skill and attitude. Many VTIs have been established in the beginning of the period of economic development in Korea, therefore most of training trades in the VTIs were concentrated to heavy industry related technologies. But now many private VTIs' training in industrial trades are changing to office and service related ones to reflect the society's youth. In spite of this like changing, public VTIs maintain those trades till now, therefore public VTIs' training would be told to move to technology-centered training.

It is important in VET how the training courses satisfy the demands of industry. To adapt to this requirement, the development of training curriculum has a very important meaning and therefore, to develop an effective curriculum we have to

analyze the needs of industry by utilizing the job/task methods (analysis discussed in the next chapter). Besides the curriculum development, a production of training materials including text and teaching aids belongs to the VTIs' another role. To maximize an effect of the role, VTI has to have concerns to develop the competency of instructors. Instructors' study in the production company or research center should be a main issue for an effective training.

The next main role of VTI would be to instill cooperation with the regional society and companies in the regional area. Basically these two groups are the biggest customer for VTI, because VET's basic purpose is to adapt to the demands of society as shown in (Fig.2). Firstly, VTI can establish various life-long training courses, in this case:



**(Fig.2) An Ideal Role of VTI**

Often workers can learn simple technology, for example, car maintenance or wood working, in the part-time courses. Concerning the cooperation with companies it is necessary to make a contract for school-industry cooperation, and then VTI send students to the company for the on-the-job training. Sometimes employees of the company come to enter up-grade training courses of the VTI. In case of the small-medium size companies, they don't have an R&D organization and the technical manpower in the company. In this case, VTI's competent instructors can give some advice concerning technology in the production process. In addition, every companies' production line could be the ideal place for instructors and students to teach as well as learn.

***Table 2. A Case of Regional Activities of the KOPO Colleges(2001)***

<b>Classification</b>	<b>Description</b>	<b>Outputs</b>
Short-term Training.	· Training. for residents and employee, part-time courses	13,322 per.
Tech. Guidance	· Advices & cooperation in the production process	2,555 ea.
OJT Contract	· Contract for on-the-job training for students in the companies	23 clg.
BI Center	· Establishment of business incubator in every college	23 clg
Computer N/W	· Information exchange net-work with companies	19 clg.

## **. The Essentials of VTI Management**

### **1. Proper Curriculum Development**

To manage VTI, we should have some specialized and professional knowledge concerned with training as well as the general activities discussed in chapter II. As the above mentioned, VTI's first function should be manpower training in order to satisfy the demands of industry. To adapt to this demand, we have to have a well designed training curriculum. To accomplish this task, analyzing real technology and the production process in the companies becomes essential. There are many methodologies in the job/task analysis and will be explained in the body of this text.

#### **1-1. Job/Task Analysis**

##### **Observation Method**

Informal observation will be an essential component of almost any study. It will usually be incorporated with any of the other techniques described to ensure that reality is maintained. In observing any job, we rapidly establish some parameters concerning the component tasks. More formal observation methods such as task analysis, method study and work measurement, can provide accurate information. They are particularly useful for studying "operator" jobs. While a description of the execution of a task will include information about the training requirements for that task as well as other information. Although task analysis is popular because of its low cost, speed and apparent simplicity, it

is a much more complex method than researchers realize.

### **Interview Method**

Interviews are the most easily applied job/task analysis. The informal, unstructured one-to-one interview is useful for obtaining information quickly and inexpensively, provided that the interviewees are few in number and readily accessible. Formal, structured interviews involving a large number of geographically dispersed respondents, can be expensive and time-consuming. Telephone interviewing may be a less expensive alternative, but requires special interviewer skills. The main problems with this approach:

- o Generation of opinion rather than fact
- o Lack of consistency when applied to larger populations.

### **Questionnaire-based Method**

Survey methods for research are commonly used in job analysis. They are used to collect quantitative data on jobs. When using questionnaire-based methods, you will need to :

- o Define the population
- o Select the sample
- o Develop data collection instruments
- o Collect data
- o Process and analyze the data

Questionnaire based methods, like other methods, have a number of strength and weaknesses. A single study may therefore combine two or more methods to yield optimum results. For example, a

survey conducted by mail may be integrated with a set of interviews. The interviews could be used to refine the mail questionnaire in a pre-test phase, and/or the interviews could be used to supplement the quantitative data from the mail survey's qualitative data.

### **CODAP Method**

CODAP stands for Comprehensive Occupational Data Analysis Programs. Although CODAP refers specifically to a suite of fifty computer programs, the term is also used to describe the associated data gathering method. The CODAP method involves :

- o Constructing an inventory of all the tasks likely to be undertaken in the job
- o Developing a questionnaire which incorporates the task inventory
- o Surveying a sample of the job incumbents
- o Analyzing the data using the CODAP programs
- o Reporting the results.

CODAP studies may vary considerably in size, but compared to other methods, CODAP generally requires a moderate to large amount of time and resources. The most time-consuming stages of a CODAP study include the development of the task inventory and the administration of surveys.

### **Delphi Method**

This technique forms a bridge between survey techniques and group process methods. The Delphi method assumes that society is

directed towards goals and that these goals are determined by the actions of various interested groups. The methodology employed by this technique is based on an examination of future trends. Then a selected panel of experts using a series of questionnaires, create a picture that can be used to form information patterns of likely or desirable future events. In addition, results of previous surveys are given to the panel for reaction and refinement.

This type of survey from the beginning process can be accomplished in as little as forty-five days. Group size may vary between ten and thirty but if the responses of sub-groups are identified, then in theory, information from large group sizes should be easily obtainable.

### **Brainstorming**

This is a technique of small group discussion designed to encourage the generation of an unrestricted flow of ideas. Often certain members of a group lack the confidence to put forward good ideas whereas more confident members are able to impose their point of view irrespective of value. Brainstorming is a process which encourages group participation, but it does require a chairperson that is an expert in the particular field. However, the chairperson should be someone skilled in the technique of brainstorming. This technique works most effectively with a group of 5 to 12 people and is ideally suited to consideration of issues like job performance, job design deficiencies, quality control and problems solving.

## **DACUM Method**

DACUM is an acronym for Design A Curriculum. This is another group centered approach which uses brainstorming to produce a set of behavioral objectives plus skill inventory for a given job or range of jobs. It works best with a group 8 to 14 participants, producing initial information in one to three days. A DACUM conference usually consists of five phases :

- o Introduction and orientation
- o Clarification of the jobs to be analyzed
- o Identification of general areas of competence
- o Identification of tasks within each job
- o Analysis of data

Participants should be carefully selected on the basis of their occupational knowledge, creativity, industry background and availability for the duration of the process. DACUM's success relies on the ability of the group members to generate new ideas creatively. All competencies identified are written on index cards by the recorder and placed in sequence on a wall facing the group. During the analysis stage the contributions are given to two or three teaching specialists for comments and an estimate of the instruction time required to cover each subject. The competencies are then regrouped into the order that they would normally be found in a job situation. Finally a draft sequence of topics is developed and submitted to the training provider. The main advantages of DACUM are :

- o Speed of initial information gathering
- o Group discussion is more likely to achieve consensus
- o There is more control over input than in a questionnaire



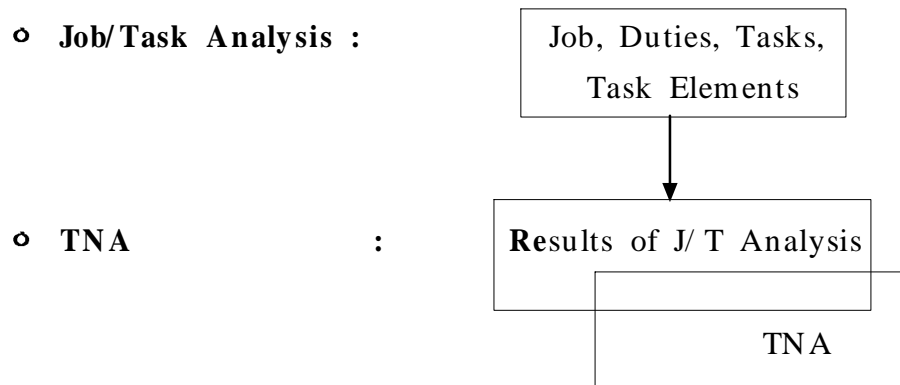
approach

- o Outcomes are behavior-orientated rather than information-oriented
- o Issues are assessed and analyzed at the discretion of the participants, rather than a researcher
- o Positive feedback is provided to participants who can see how their input is utilized throughout the process

## **1-2. Training Needs Analysis and Curriculum Design**

The purpose of the job/task analysis is to realize the working contents in the companies. Therefore all the results of job/task analysis are not adaptable for a proper curriculum because some contents of the work may not related to teaching subjects. Training Needs Analysis (TNA) is an another analyzing technique concerned with finding of competency produced in the results of job/task analysis, while job/task analysis is related to job, duties and tasks.

TNA specialists, researchers and teachers have to find competencies from the results of the job/task analysis. After which, the contents are placed into the TNA sheet(see Appendix) which is formed of name of task, related knowledge, skill, safety and environment.



**(Fig.3) TNA Process**

All the contents of curriculum can be produced from the TNA results. In this process the teaching contents such as the teaching subjects is emphasized, while a competency is shown in the TNA. In this case we have to consider a designing systematic diagram for the teaching subjects as shown in the Appendix, because every subject has a systematic relation and subject ladder, especially in case of the technical subjects.

A curriculum should be modified annually or every 3 years, as to comply with the rapidly changing technology/ methodology. It is not necessary to perform the job/ task analysis whenever we want to modify the curriculum. Because all the analyzing activities cause high cost and all the technical contents may not be changed. Therefore, when we want to modify the curriculum it will be a good way utilizing this type of task-force including some industrial specialists.

## **2. Evaluation**

### **2-1. Training Institutions**

Nowadays various types of evaluation are performed regularly as well as irregularly. Example, if a man gets a medical examination it commonly in spite of his healthy body. In some ways, a training institution is the same as human's body, it lives and acts, therefore it is necessary to get an evaluation in order to find and analyze some strength and weakness of the institution. If we would like to make a perfect and correct evaluation we have to develop a proper evaluation index as shown in <Table 3>, developed and used in KOPO.

**Table 3. An Evaluation Index for the Polytechnic Colleges**

<b>Evaluation Area</b>	<b>Description</b>	<b>Score</b>
	Total	330
	Sub Total	160
Evaluation for Education and Training	• Appropriateness and effectiveness of curriculum	5
	• Acquisition ratio of national qualification certificate	30
	• Recruitment ratio of students	30
	• Output of professors' research	5
	• Output of professors' field-study	5
	• Training ratio of students	25
	• Output of guidance of students' personality and morality	5
	• Company's demand for graduates	5
	• Employment ratio of graduates	15
	• Wage of graduates	15
	• Analysis of employment condition	5
	• Supporting results for re-employment of graduates	5
	• Condition of training equipments	10
	Sub Total	70
Evaluation for Management	• Output of scholarship	10
	• Output of implementation of long-term development plan	5
	• Output of fund raising	5
	• Output of gaining business	5
	• Computerizing ratio	5
	• Computer utilizing status	10
	• Managing status of facilities	15
	• Output of budget frugality	10
	• Transparency of budget utilization	5
	Sub Total	50
Evaluation for the Roles in the Region	• Action output of cooperation committee	10
	• Output of technical guidance	20
	• Devotion output for regional society	20
	Sub Total	50
Evaluation of Customers	• Evaluation of students	10
	• Evaluation of graduates	10
	• Evaluation of parents	5
	• Evaluation of companies	20
	• Evaluation of cooperative companies	5
Evaluation for special results		(± 25)

This evaluation index is formed of five sectors, i.e., education and training, management, roles in the regional society, customer and optional evaluation, and which is constructed of the essential roles concerned with polytechnic colleges' main functions. This evaluation is performed in the statistical and visiting analysis for the last year's outputs of a college. A result of the evaluation is utilized in a decision of support amount for the college from the KOPO's budget. This like evaluation system cause some competitive relation among 23 colleges and through this mechanism every colleges can create new ideas and best ways to develop for the future.

## **2-2. Training Instructors**

It is said that all kinds of the success or failure of the VTIs depend on the abilities and the attitudes of the training instructors. It means that a instructor's role is critical in VTI, therefore a manager of VTI has various concerns how he/she supports the development of the instructors' competencies.

To achieve a successful training every instructors should have the best attitude as well as the knowledge and experience. Inspired lectures, moderated behavior and a love for the students are essential attitude traits. As we can see <Table 4> was designed to reflect the above factors concerning instructors' quality, and is currently utilized in the polytechnic colleges. A result of the evaluation is influenced to decide the wage and the promotion of the professor. If a college professor marks below 60%, he/she can not make a contract for the re-employment with the KOPO.

**Table 4. An Evaluation Index for the Instructors**

<b>Evaluation Area</b>	<b>Description</b>	<b>Score</b>
Total		100
Education and Guidance for Students	Sub Total	50
	· Students' evaluation for the lecture	10
	· Lecture hours	5
	· Deputy director's evaluation	5
	· Recruitment ratio of students	5
	· Training ratio of students	7
	· Acquisition ratio of national qualification certificate	10
	· Employment ratio of graduates	8
Professor's Competency Development	Sub Total	25
	· Output of the professor's research and creative activity	20
	· Output of the professor's field-study	5
Contribution for the College	Sub Total	25
	· Contribution for a development of the college	10
	· Output of cooperation with companies	8
	· Output of out-side activities	7
Positive Points	· Gaining business, Language, prize, etc.	(+10)
Negative Points	· Skipped lecture, punishment, etc.	(- 10)

**Appendix 1. <Task Sheet>**

<b>Name of Task : Automatic Programming</b>		<b>No. of Task : C-3</b>	
Competency			
Description		Level I(1 yr. trg.)	Level II(2 yrs. trg.)
Related Knowledge	Mathematics	- Rectangular coordinates - Trigonometry	- Polar coordinates - Trigonometry
	Theory	- MS-DOS, Windows - Simulation - 2D Modeling - CNC	- MS-DOS, Windows - Simulation - 2D, 3D Modeling - DNC, CAD/ CAM
	Language	- CAD/ CAM - Postprocessing - Simulation	- CAD/ CAM - Postprocessing - Simulation - CL file
Skill	- Installing CAM S/ W - Data input and output - 2D modeling	- Installing CAM S/ W - Data input and output - 2D modeling	- Installing CAM S/ W - Data input and output - 2D, 3D modeling - Model simulating - Calculating cutting cond. - Producing CL file and NC data - Confirming output data - DNC controlling - Sample cutting and modifying
Safety and Environment	- Maintaining CAD/ CAM - Classification and Custody of data	- Maintaining CAD/ CAM system and S/ W - Classification and Custody of data	- Maintaining CAD/ CAM system and S/ W - Classification and Custody of data

**Appendix 2. <TNA Sheet>**

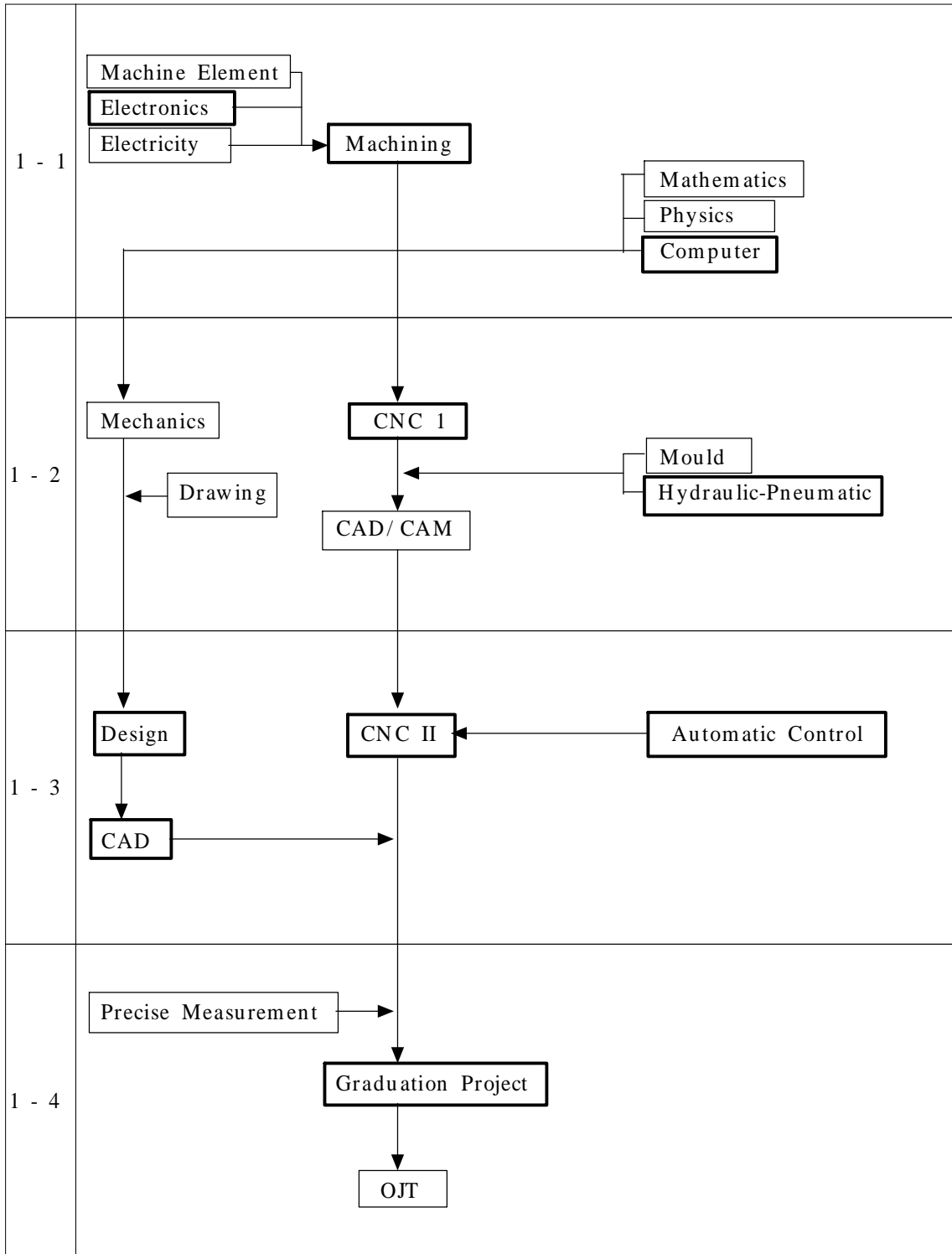
<b>Name of Task : Automatic Programming</b> <b>No. of Task : C-3</b>		
Industrial Needs	Beginning	A worker should 1-2
	Over 3 yrs exper.	A worker should 1-9
<b>Task Elements</b>		
<ol style="list-style-type: none"> <li>1. Acquiring drafting sheets and programs</li> <li>2. Modeling (2D, 3D)</li> <li>3. Model Surfacing</li> <li>4. Simulating</li> <li>5. Input cutting conditions</li> <li>6. Input tool path and cutting data</li> <li>7. Confirmation cutting data</li> <li>8. Examining program results</li> <li>9. Sample cutting and modifying</li> </ol>		
<b>Equipments</b>		<b>Materials</b>
<ol style="list-style-type: none"> <li>1. CAD/ CAM System</li> <li>2. Over 8M Ram and Sub-monitor</li> <li>3. Omega S/ W etc.</li> </ol>		<ol style="list-style-type: none"> <li>1. Drafting Sheets</li> </ol>



**Appendix 3. < A Systematic Diagram for the Teaching Subjects >**

- Department of Machinery (2 yr course) -

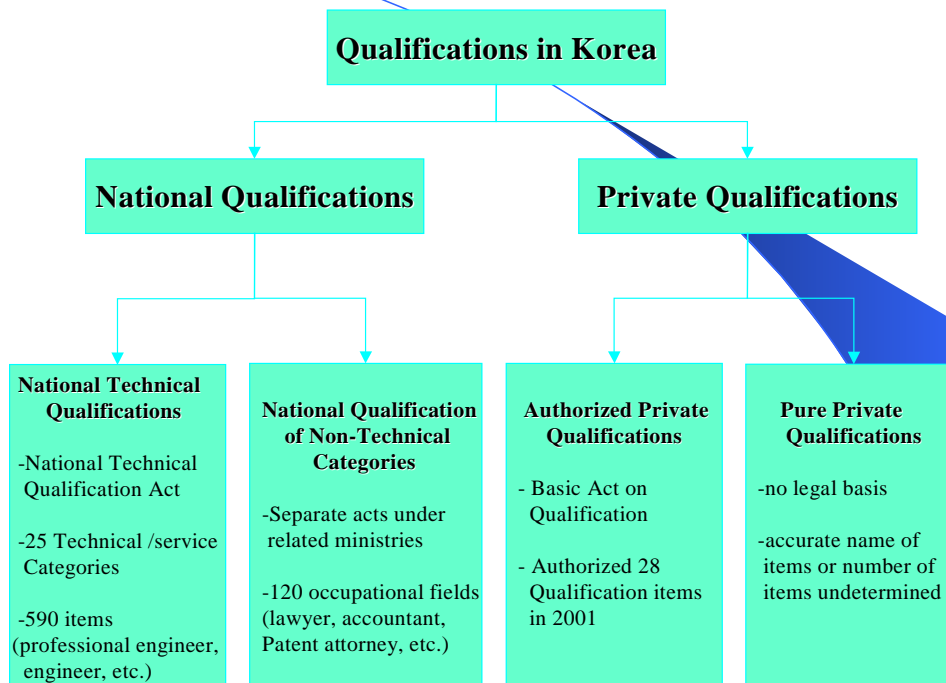
□ : Theory or Practice    □ : Theory and Practice



# Vocational Qualification System in Korea

KRIVET, associate research fellow  
Jeong-yoon, Cho

## 1. Structure of Korean Qualification System



## 2. Enactment of National Technical Qualification

### Background(Dec. 1973)

- **First**, the lack of coherence among the technical qualifications issued by various government ministries and laws
- **Second**, the criteria for national technical qualification are much too complicated and unbalanced
- **Third**, the various qualifications authorized by different sources, many of them overlapping in their content, are not being accorded inter-changeability
- **Fourth**, the near absence of preferential treatment for certificate holders has worked to deter the incentives of workers to acquire technical skills
- **Fifth**, due to the unorganized system of qualification, it has been impossible to keep technical education and vocational training in line with the needs of the industry

## 2. Enactment of National Technical Qualification

### Basic Principle

- **Human resources in the science and technology field were classified into three categories:**
  - scientists(the so - called brain power)
  - on-site technicians, who are in charge of technical matters in the actual workplace
  - craftsmen, whose main duties are manufacturing, assembling, operating, repairing and maintenance
- **Referencing to this classification, technical qualification for engineers(technology) and craftsmen(skill) were introduced.**
- **The former consists of 3 grades, such as Professional Engineer, Class , Engineer, the latter comprises of 4 grades, such as Master Craftsman, Class , Craftsman and Assistant Craftsman.**

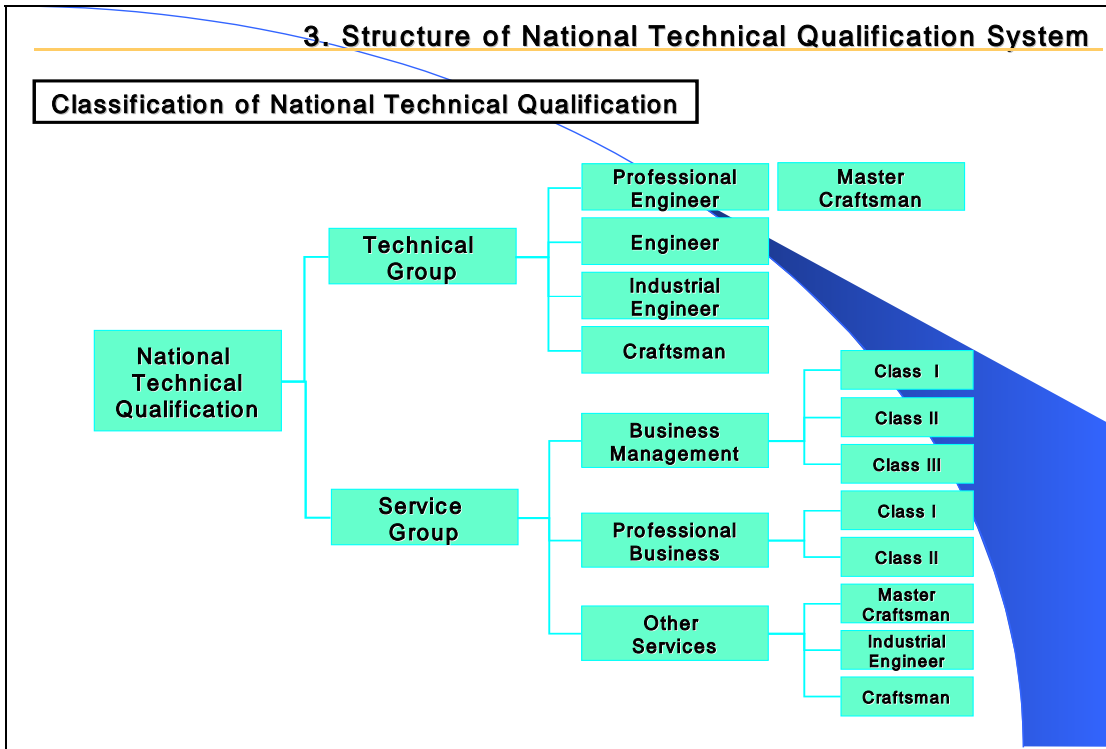
## 2. Enactment of National Technical Qualification

### Function

- **First**, individual skills and capabilities should be evaluated according to standard criteria, making possible the supplying of skilled workers as well as providing a direction for human resources development institutions.
- **Second**, the qualification system must provide a link between the supply and demand of skilled workers, facilitating the smooth flow of labor.
- **Third**, it acts as a guideline regarding employment, pay, promotion to individuals and standards for human resources management, especially in an industrial society.
- **Fourth**, qualified and skilled workers can be secured and further utilized, contributing to increased productivity and industrial development.

## 2. Enactment of National Technical Qualification

- At the time of the enactment of the NTQ Act, the main consideration was given to skills related to heavy industry, such as machinery, metal, and chemical engineering, since the basic principle was economic development through the support of heavy industry.



### 3. Structure of National Technical Qualification System

**Number of Qualification Items in Technical Group of NTQS**

Occupation Category	Grade	Total	Professional Engineer	Master Craftsman	Engineer	Industrial Engineer	Craftsman
1. Machinery		118	10	10	15	31	52
2. Metal		48	6	6	7	10	19
3. Chemical Engineering and Ceramics		20	5	1	4	5	5
4. Electricity		19	5	2	4	4	4
5. Electronics		13	3	1	3	3	3
6. Communication		20	1	1	4	7	7
7. Shipbuildings		9	3	-	1	1	4
8. Aeronautics		9	2	1	1	1	4
9. Civil Engineering		29	11	-	4	4	10
10. Construction		33	4	2	3	7	17
11. Textiles		30	6	2	4	9	9
12. Mining		16	4	-	3	4	5
13. Information Processing		8	2	-	2	3	1
14. Land Development		11	3	-	3	3	2
15. Agriculture and Forestry		39	6	1	9	9	14

(Continued...)

### 3. Structure of National Technical Qualification System

#### Number of Qualification Items in Technical Group of NTQS

Occupation Category	Grade					
	Total	Professional Engineer	Master Craftsman	Engineer	Industrial Engineer	Craftsman
16. Ocean and Fisheries	20	4	-	8	5	3
17. Industrial Design	6	1	-	2	2	1
18. Energy	6	3	-	2	1	-
19. Safety Management	19	7	1	5	5	14
20. Environment	13	4	-	4	4	1
21. Applied Industry	39	6	-	11	8	14
22. Transportation	3	1	-	1	1	-
23. Pottery	22	-	1	-	4	17
<b>Total</b>	<b>550</b>	<b>97</b>	<b>29</b>	<b>100</b>	<b>131</b>	<b>193</b>

### 3. Structure of National Technical Qualification System

#### Number of Qualification items in Service Group of NTQS

Occupation category	Item	Class	Number
Business Management	Word Processing	1-3 geup	3
	Korean Shorthand	1-3 geup	3
	English Shorthand	1-3 geup	3
	Secretarial Work	1-3 geup	3
	Computer Applicability	1-3 geup	3
Professional Business	Computer Accounting	1-3 geup	3
	Job Counselor	1-2 geup	2
	Social Survey Analyst	1-2 geup	2
	Electronic Commerce	1-2 geup	2
<b>Total</b>			<b>24</b>

\* "geup" : stands for the meaning of "grade" in Korean

### 3. Structure of National Technical Qualification System

#### Number of Qualification items in Service Group(other services) of NTQS

Grade Occupation Category	Master Craftsman	Industrial Engineer	Craftsman	Number
<b>Foods</b>	Cooking Baking	Cooking	Korean Cooking Western Cooking Chinese Cooking Japanese Cooking Swelfish Cooking Confectionary Cooking Pastry Bartender	<b>11</b>
<b>Sanitation</b>	Barber Beautician		Barber Beautician Laundry	<b>5</b>
<b>Total</b>	<b>4</b>	<b>1</b>	<b>11</b>	<b>16</b>

### 3. Structure of National Technical Qualification System

#### Certification Criteria in NTQS according to Grade

Grade	Certification Criteria
<b>Professional Engineer</b>	Whether or not the applicant has the ability to plan, research, design, analyze, test, operate, construct, evaluate or guide and supervise these activities based on a high level of expert knowledge and field experience
<b>Master Craftsman</b>	Whether or not the applicant has plenty of experience and skills in order to supervise, guide other workers, carry out on-site training, and act as a link between the management and production workers
<b>Engineer</b>	Whether or not the applicant has the ability to carry out skilled tasks such as design, base construction, and analysis based on engineering knowledge.
<b>Industrial Engineer</b>	Whether or not the applicant has the ability to carry out multi-skill tasks based on basic technical knowledge or experience
<b>Craftsman</b>	Whether or not the applicant has the ability to carry out task management duties such as produce, manufacture, operate, repair, and inspect

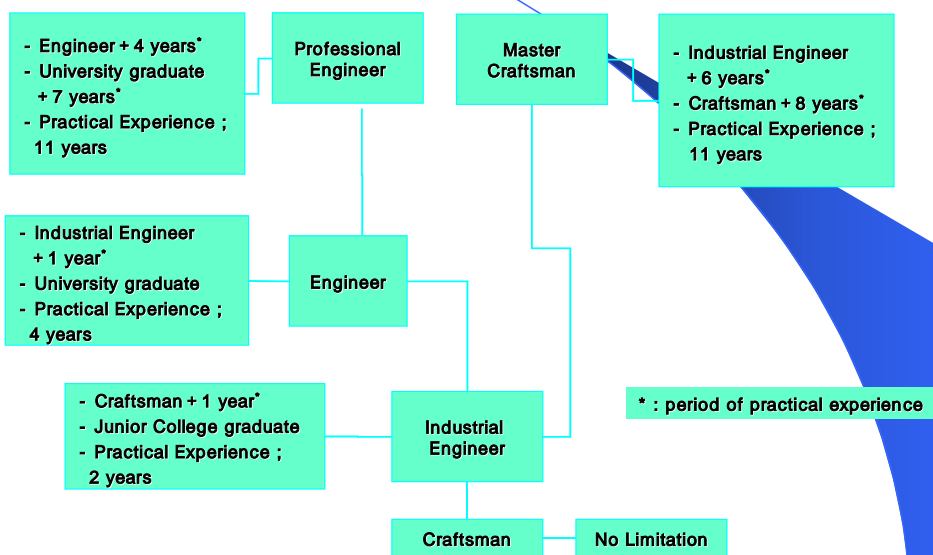
### 3. Structure of National Technical Qualification System

#### Example of Certification Criteria for Business Management (Service Group)

Name	Grade	Certification Criteria
Word Processing	1 geup	Possessing expert-level word processing skills and the ability to carry out related duties with efficiency and accuracy
	2 geup	Possessing intermediate-level word processing skills and the ability to carry out related duties with efficiency and accuracy
	3 geup	Possessing beginner-level word processing skills and the ability to carry out related duties with efficiency and accuracy
Computer Applicability And Accounting	1 geup	Possessing expert-level computer skills and the ability to carry out related duties with efficiency and accuracy
	2 geup	Possessing intermediate-level computer skills and the ability to carry out related duties with efficiency and accuracy
	3 geup	Possessing beginner-level computer skills and the ability to carry out related duties with efficiency and accuracy

### 3. Structure of National Technical Qualification System

#### Eligibility for National Technical Qualification





### 3. Structure of National Technical Qualification System

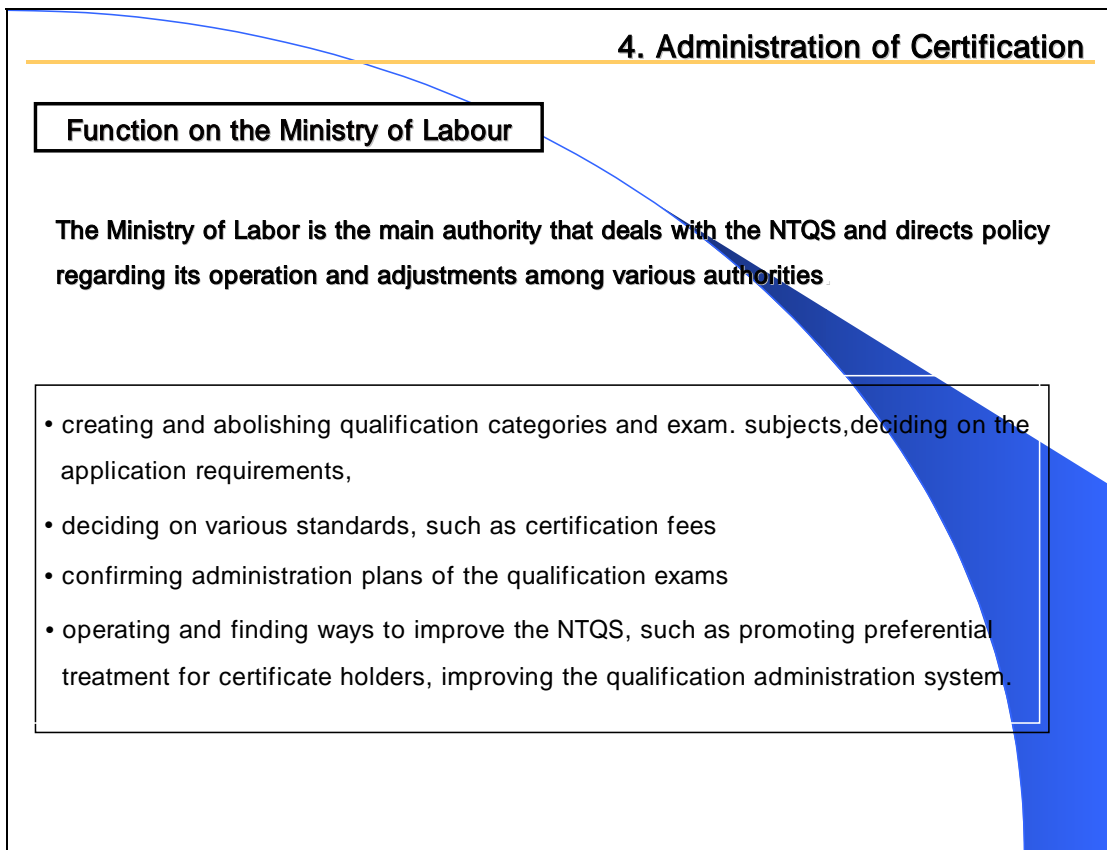
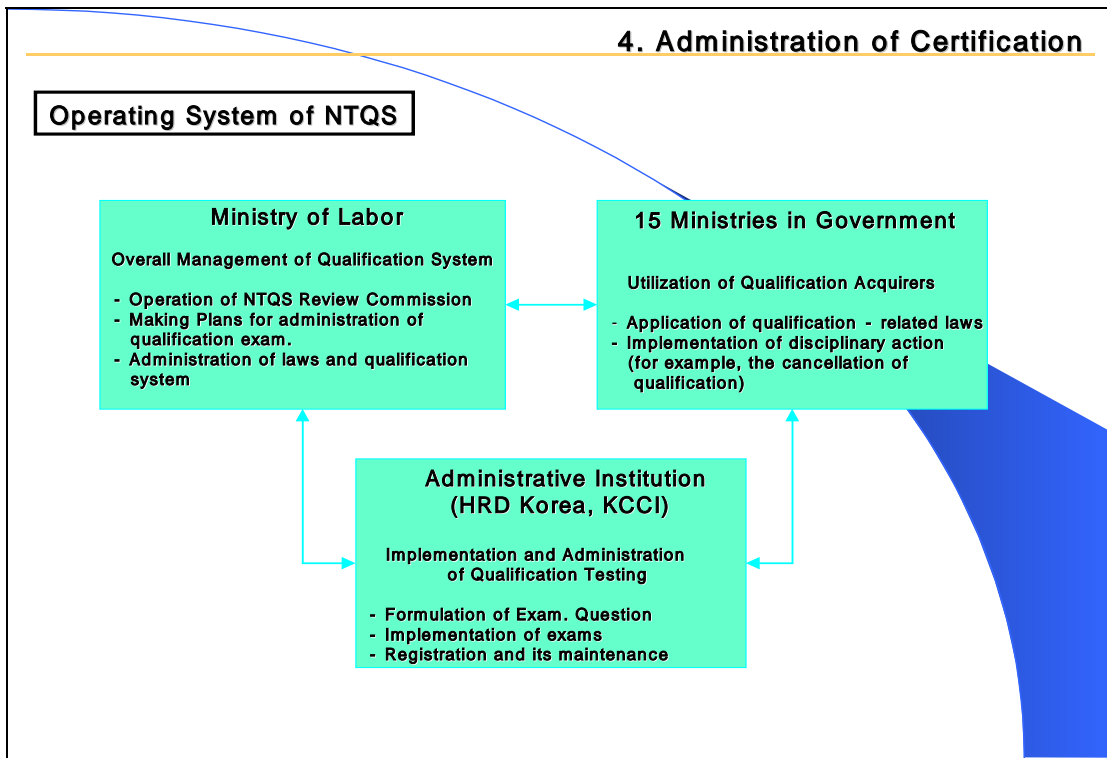
#### Testing Procedures for Technical Group

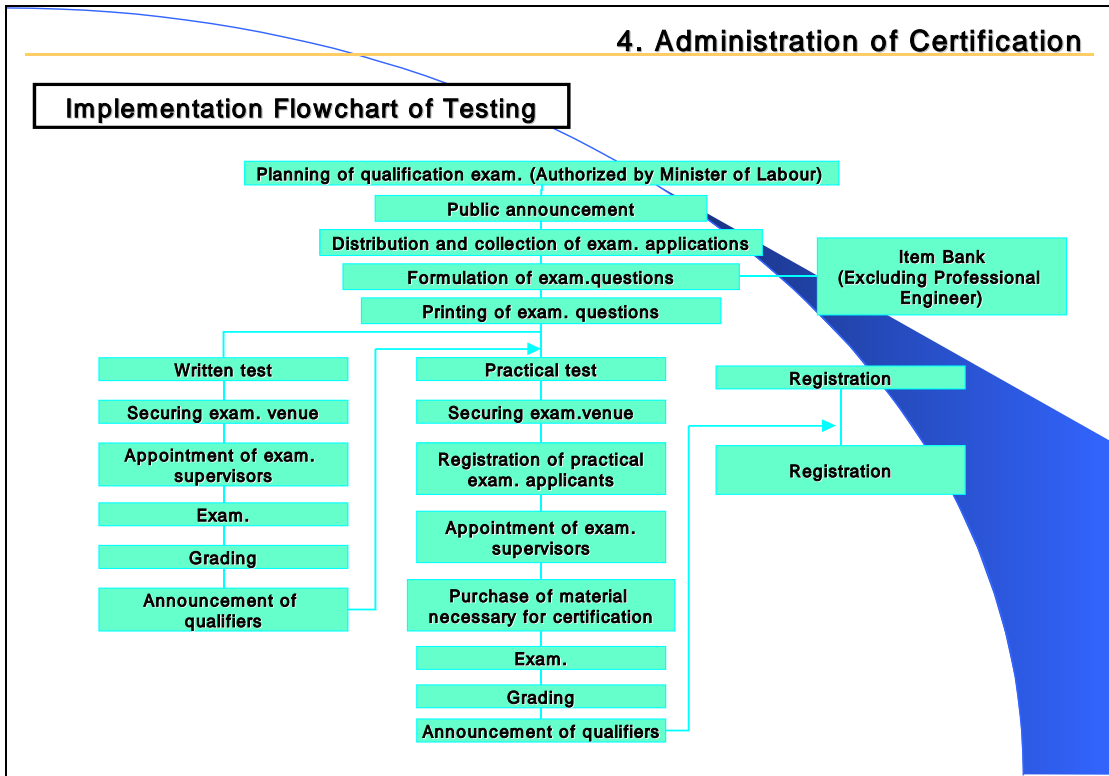
Qualification Type	Testing Procedure	
	Written Exam.	Practical Exam. or Interview
<b>Professional Engineer</b>	Short answers or essay	Interview
<b>Master Craftsman</b>	Multiple choice (1 answer out of 4 choices)	Practical exam.+ Written exam.
<b>Engineer</b>	Multiple choice (1 answer out of 4 choices)	Practical exam.+ Written exam.
<b>Industrial Engineer</b>	Multiple choice (1 answer out of 4 choices)	Practical exam.+ Written exam.
<b>Craftsman</b>	Multiple choice (1 answer out of 4 choices)	Practical exam.

### 3. Structure of National Technical Qualification System

#### Testing Procedures of Business Management Field(Service Group)

Qualification item	Testing Procedure
Shorthand	Practical exam.
Secretary	Written exam. Practical exam.
Word Processing	Written exam. Practical exam.
Computer applicability	Written exam. Practical exam.
Computer accounting	Written exam. Practical exam.
Job counselor	Written exam. Practical exam.
Social survey market	Written exam. Practical exam.
Electric commerce	Written exam. Practical exam.





### 5. Analysis on Test Results of National Technical Qualification

**Total Number of Candidate and Successful Candidate, and Average Pass Rate According to National Qualification Grade from 1974 to 2000**

Qualification grade	No. of candidate(persons)	No. Of successful candidate(persons)	Average pass rate(%)
Professional engineer	197,407	21,779	11.03
Master craftsman	20,480	4,775	23.32
Engineer	3,812,963	594,205	15.58
Industrial engineer	5,166,876	727,519	14.08
Craftsman	20,141,833	4,557,420	22.63
<b>Total</b>	<b>29,339,559</b>	<b>5,905,698</b>	<b>17.33</b>

### 5. Analysis on Test Results of National Technical Qualification

**Total Number of Candidate and Successful Candidate according to Occupational Field from 1974 to 2000**

Occupation field	No. of candidate(persons)					No. of successful candidate(persons)					Pass rate				
	Professional Engineer	Master Craftsman	Engineer	Industrial engineer	Craftsman	Professional Engineer	Master craftsman	Engineer	Industrial engineer	Crafts-man	Professiona l engineer	Master craftsman	Engineer	Industrial engineer	Craftsman
<b>machinery</b>	10,818	13,254	274,153	949,010	6,612,915	1,810	3,295	41,707	155,823	1,449,917	16.73%	24.86%	15.21%	16.42%	21.93%
<b>Metal</b>	862	1,124	57,945	65,342	329,648	266	30930	11,497	10,055	83,279	30.86%	27.49%	19.84%	15.39%	25.26%
<b>Chelcal engineering and ceramics</b>	1,589	244	32,086	28,312	762,498	426	54	4,187	5,040	149,395	26.81%	22.13%	13.05%	17.80%	19.59%
<b>Electricity</b>	12,680	1,851	490,151	660,183	1,115,258	811	476	69,069	77,351	3,303,241	6.40%	25.72%	14.09%	11.72%	27.19%
<b>Electronics</b>	721	757	35,265	95,044	1,350,186	121	119	5,389	12,591	376,546	16.78%	15.72%	15.28%	13.25%	27.89%
<b>Communication</b>	2,923	81	151,746	524,056	1,960,923	286	9	19,189	72,050	540,095	9.78%	11.11%	12.65%	13.75%	27.54%
<b>Shipbuilding</b>	327	-	3,948	3,865	14,237	141	-	687	605	6,585	43.12%	-	17.40%	15.65%	46.25%
<b>Aviation</b>	78	31	2,086	8,684	125,083	34	1	408	679	30,932	43.59%	3.23%	19.56%	7.82%	24.73%
<b>Civil engineering</b>	70,292	-	364,821	200,633	447,103	6,833	-	61,169	26,264	110,386	9.72%	-	16.77%	13.09%	24.69%
<b>Architecture</b>	61,829	168	550,736	461,020	649,715	5,889	39	73,293	52,909	192,758	9.52%	23.21%	13.31%	11.48%	29.67%
<b>Textile</b>	176	29	3,150	10,869	71,095	64	20	481	2,347	35,111	36.36%	68.97%	15.27%	21.59%	49.39%
<b>Mining resource</b>	748	2	33,724	21,152	149,588	168	2	3,144	2,188	33,711	22.46%	100.00%	9.32%	10.34%	22.54%
<b>Information processing</b>	4,801	-	446,453	736,142	1,745,750	548	-	85,346	102,733	241,923	11.41%	-	18.30%	13.96%	13.86%
<b>Land development</b>	5,090	-	138,697	134,899	503,203	673	-	20,025	20,480	20,061	13.22%	-	14.44%	15.18%	37.71%
<b>Agriculture &amp; forestry</b>	1,168	6	39,706	81,477	144,414	506	3	6,555	10,465	71,508	43.32%	50.00%	16.51%	12.84%	49.52%
<b>Ocean &amp; fishing</b>	227	-	9,675	13,605	13,263	79	-	2,368	3,220	7,772	34.80%	-	24.48%	23.67%	58.60%
<b>Industrial design</b>	23	-	919	8,404	169,553	5	-	116	1,015	18,907	21.74%	-	12.62%	12.08%	11.15%

(Continued...)

### 5. Analysis on Test Results of National Technical Qualification

**Total Number of Candidate and Successful Candidate according to Occupational Field from 1974 to 2000**

Occupation field	No. of candidate(persons)					No. of successful candidate(persons)					Pass rate				
	Professional Engineer	Master Craftsman	Engineer	Industrial engineer	Craftsman	Pro- fessional Engineer	Master Crafts- man	Engineer	Industrial engineer	Craftsman	Pro- fessional engineer	Master craftsman	Engineer	Industrial engineer	Craftsman
<b>Energy</b>	1,180	-	45,879	9,649	-	401	-	8,754	585	-	33.98	-	19.08%	6.06%	-
<b>Safety management</b>	12,544	724	719,553	733,590	603,642	1,252	235	119,283	102,504	45,149	9.98	32.46%	16.58%	13.97%	7.48%
<b>Environment</b>	5,290	-	270,589	287,142	41,044	562	-	37,165	44,855	9,520	10.62	-	13.73%	15.62%	23.19%
<b>Applied Industry</b>	12,704	-	111,057	125,787	593,679	685	-	23,120	22,653	71,723	25.33	-	20.82%	18.01%	12.08%
<b>Transportation</b>	1,337	-	10,625	280	-	219	-	1,253	4	-	16.38	-	11.79%	1.43%	-
<b>Pottery</b>	-	125	-	3,211	144,939	-	13	-	789	48,313	-	10.40%	-	24.57%	33.33%
<b>Foods</b>	-	1,611	-	4,108	2,936,572	-	152	-	276	689,401	-	9.44%	-	6.72%	23.48%
<b>Sanitation</b>	-	473	-	412	107,525	-	48	-	38	21,187	-	10.15%	-	9.22%	19.70%
<b>Total</b>	197,407	20,480	3,812,963	5,166,876	20,141,833	21,779	4,775	594,205	727,519	4,557,420	11.03%	23.32%	15.58%	14.08%	22.63%

## 6. Credit Bank System for Holders of National Technical Qualification

### Credit bank system

#### 1. Background and Outline

- Credit bank system is one of the ways to fulfill the desires of people who pursue lifelong education.
- In a credit bank system, credits obtained through earning certificates recognized by the government.
- The credits secured via these channels also can be accumulated for an academic credential and a diploma.
- The credit bank system was stipulated in 「the Act on the Recognition of Credits」, established in 1998.

## 6. Credit Bank System for Holders of National Technical Qualification

#### 2. Credit Recognition for Technical Group

- Professional Engineers are given 45 credits
- Master Craftsmen are given 39 credits.
- Engineers (formerly Class I Engineers) are given 30 credits.
- Industrial Engineers (formerly Class II Engineers, Multi-skilled Engineers, Class I Craftsmen) are given 24 credits.

#### 3. Credit Recognition for Service Group

- Level 1 Word Processing is given 12 credits.
- Level 2 Secretarial Work is given 4 credits.

## 6. Credit Bank System for Holders of National Technical Qualification

### Number of Degrees Awarded by Credit Bank

	1999. 8.	2000. 2.	2000. 8.	2001. 1.	2001. 8.	Total
Bachelor's Degree	25	111	143	1,462	942	2,683
Two-years associate Bachelor's degree	9	539	227	267	2,571	3,613
Total	34	650	370	1,729	3,513	6,296

Source : Korean Educational Development Institution(2001). internal data

## 7. Authorization of Private Qualification by the Government

### Definition of Private Qualification

- Private qualification refers to a system of qualification administered and operated by the private sector, including non-governmental private organizations and individuals.

### National Authorization System of Private Qualification

- In order to activate the private qualification system, the Korean government enacted the 「Basic Qualification Act」 on March 27, 1997.
- The task of evaluating applications of private qualifications for government authorization which started in full-scale in 1999 was undertaken by the Korea Research Institute of Vocational Education and Training(KRIVET).

## 7. Authorization of Private Qualification by the Government

### National Authorization Standards for Private Qualification

- **First**, an individual must have the appropriate skills that are in accordance with the fundamental directives of the qualification system as laid out in 「Basic Qualification Act」
- **Second**, a person must also have had three or more qualification credentials that have been in effect for at least one year to this date.
- **Third**, Certificates from those private qualification applicants with the organized operations in the considerable level are recognized.
- **Fourth**, In the case of the presence of a similar national qualification, the certification standards, subjects, and eligibility of the private qualification must be identical or at a similar level to those of the national qualification.

## 7. Authorization of Private Qualification by the Government

- 
- As provided for by the law stipulating the details of national qualification, workers with authorized private certificate are to receive the same treatment as workers with national one.

- 
- 7 ministries had authorized 28 qualification items of about more 200 items of private qualification in 2000.
  - Government had put the expiry date to all authorized private qualification in the range of 2 - 5 years. Each authorized private institute being like to extend expiry date should take the recertification within these date.
  - As of Feb. 2002, up to 35 private qualification in 8 categories received government recognition
  - In 2002 government is in the process of examining more 200 private qualification items which want to get authorization from government. At the end of 2002 government is going to issue the certificate of authorization to private qualification institute which can satisfy the criteria for the authorization of private qualification institute.

## 8. APEC Engineer

### Background

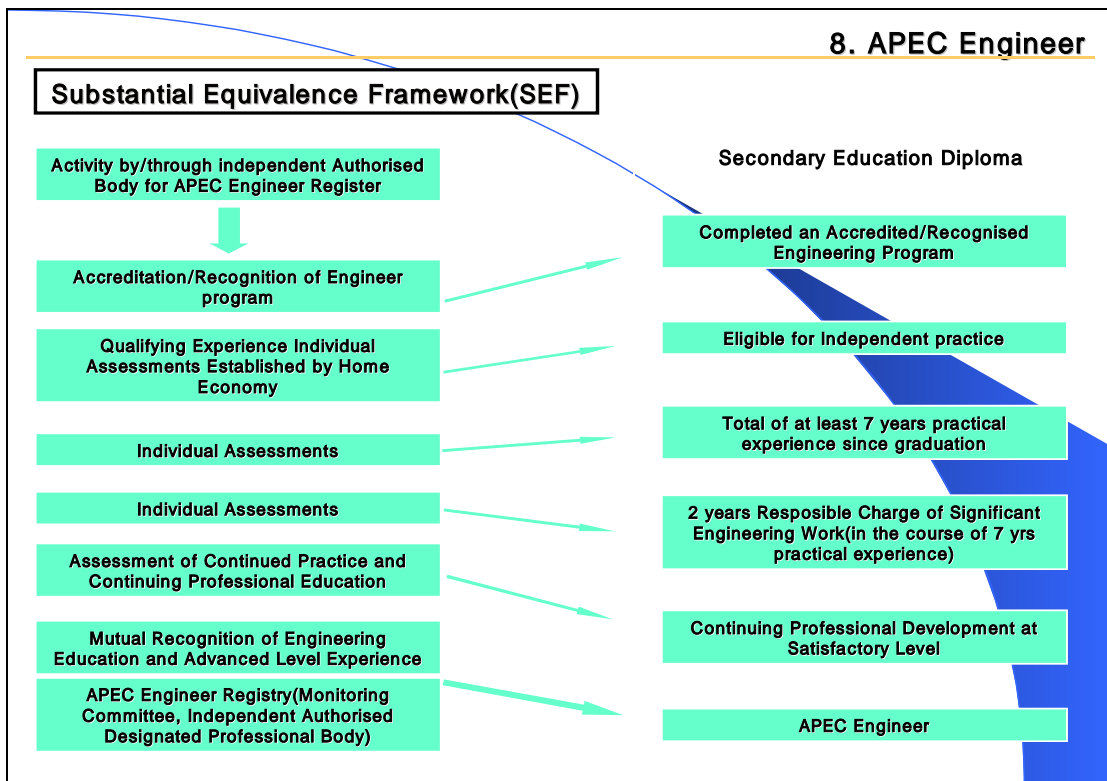
- Under the leadership of the IEAust(Institute of Engineers, Australia), APEC HRDWG is working on measures to mutually recognize engineers of the APEC member countries.
- 'The APEC Engineer project' dates back to May 1996 when the 1st APEC HRD Steering Committee was held in Sydney.
- As of October 2001, formal members of the APEC Engineer Coordination Committee are 10 in total including Korea, Australia, Japan, Canada, Hong Kong, Malaysia, U.S., Indonesia, the Philippines, and Thailand.
- The current scope of the APEC Engineer Project covers 11 engineering disciplines such as civil, structure, geotechnical, electrical, mechanical, environmental, mining, industrial, chemical, information technology, and biotechnology. The scope is expected to expand to cover more engineering disciplines.

## 8. APEC Engineer

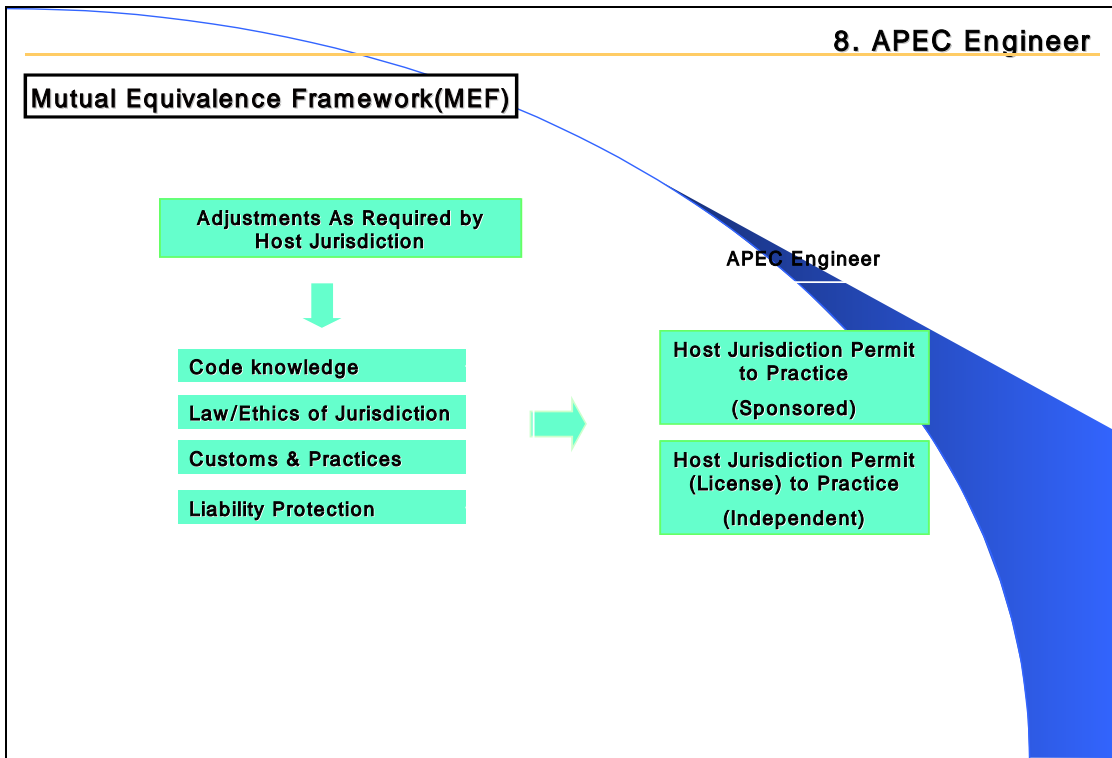
According to the SEA(Substantial Equivalence Agreement), engineers who have finished the registration can start their practice in any country within APEC. The following is the detailed qualifications to be registered as "APEC Engineer".

- **First**, the candidate should be a graduate of educational courses in engineering at recognized programs.
- **Second**, the candidate should prove he has enough field experience to work independently
- **Third**, the candidate should have at least 7 years of field experience after college graduation
- **Fourth**, the candidate should have at least 2 years of working in responsible engineering positions out of 7 years.
- **Fifth**, the candidate should have been receiving quality training for continuing professional development.





- 8. APEC Engineer**
- Once the SEA gets settled down, it would be necessary to establish the MEA(Mutual Exemption Agreement).
  - As the MEA is more related to the actual practice by engineers in the foreign countries, the MEA will require tedious negotiations and compromises among member countries.
  - At the moment, in principle, Australia and Singapore agreed to allow APEC Engineers to practice in their territories by signing the Free Trade Agreement.
  - In addition, Australia and Japan are engaged in the discussion on the bilateral agreement in civil and structure engineering.
  - Likewise, Korea has already started discussion on the bilateral agreement with Japan in civil and structure engineering.



**8. APEC Engineer**

- Korea had established Korea APEC Engineer Monitoring Committee and APEC Engineer Register. These organizations are essential to conducting works in relation to the APEC Engineer.
- As of October 2001, the number of APEC Engineer registration in Korea have reached to 146 persons already.
- In the near future, 828 persons will be qualified as APEC Engineer as soon as completing 「Continuing Professional Development(CPD)」 which is required by APEC Coordinating Committee mandatorily in order to become APEC Engineer in each member economy.

## 8. APEC Engineer

### Future Directions

- In the future, mutual recognition of professional engineers is expected to accelerate within the frameworks of the WTO and the GATS. Korean government has pursued a policy of active participation in the APEC.
- For Korea, export industry is essential for its survival and is the only solution through which we can cope with economic difficulties. In order to export goods and plants that are globally competitive and to maintain a stable level in winning overseas construction projects, it is critical to ensure globally recognized qualifications of the Korean engineers.
- In this context, it is necessary to develop a national skill standard system enacting the skill standard.
- Once the system is established, it is also necessary to upgrade requirements for the examination as well as the contents, levels, and forms of the qualification examination to those of the advanced countries.
- In addition, it is important to improve the quality of engineering education in Korea to the world class through more accreditation. For this purpose, it is necessary to accelerate some of the activities that have already started in a very systematic way.

## 9. IT Qualification

- In September 2000, the two leaders of Korea and Japan adopted a "Declaration on IT Cooperation Initiative," in which they agreed on 8 agenda including cooperations on e-commerce and exchange of IT manpower.
- As of July 2001, based on one of the 8 cooperation agenda, "Cooperation on Promoting IT Manpower Exchange," the two countries are working on measures to mutually recognize IT qualifications.
- In April 2001, the Korean delegation visited the JITEC(Japan Information Technology Engineers Examination Center), a prime organization administering national IT examinations, and had working-level discussions with its Japanese counterparts on how to pursue mutual recognition of IT qualifications.

## 9. IT Qualification

### The Significance on Mutual Recognition of IT Qualifications between Korea and Japan

- First, it is the first event in the history of Korea that Korea's national qualifications are officially recognized based on the mutual recognition agreement.
- Second, given that this agreement is with Japan, one of the most advanced countries, the contents of the agreement will positively affect agreements on mutual recognition of qualifications Korea will sign in the future.
- Third, the mutual recognition of qualifications with Japan, who has already restructured its IT qualifications system and standards to be aligned with the internal standards, will provide an opportunity for Korea to better position its national qualifications system in the international society and to even export its qualification system to the third world countries.
- Fourth, it will lay the foundation for the proper treatment of the Korean IT engineers when they are exported. On the other hand, it will also help Korea develop national standards that can attract foreign talents who can support Korea's development of the high tech industries.

## 10. Current Focuses on National Qualification System

### 1. Reforming national qualification system

- Integrating and modifying technical qualification items based on demands of industries
- Developing new qualification items, especially in the area of ICT industry
- Integrating between technical qualifications and academic degrees

### 2. Activating private qualification market

- Expanding the authorization of a private qualifications
- Supporting a in-firm qualification system by the Ministry of Labor
- Delegating the authority for implementation of national technical qualification to private institutes

## 10. Current Focuses on National Qualification System

### **3. Strengthening linkage between vocational education & training and qualification system**

- Improving compatibility of the separated national standard such as vocational education curriculum, training standards, and qualification exam, criteria
- Developing national skill (competency) standards based on the long-term project

### **4. Recognizing assessment results on competences**

- Expanding a credit bank system to certificate holders of national qualification of non-technical categories
- Planning the accreditation & recognition of key skills
- Recognizing an apprenticeship as an academic career, especially in the area of traditional arts and culture

## 10. Current Focuses on National Qualification System

### **5. Strengthening international transferability**

- Participating APEC Engineer Project in 11 disciplines
- Preparing mutual recognition with Asian countries in the field of ICT industry, etc

## **11. Further Considerations**

### **1. Definitions of Qualification**

- The requirements for an individual to enter, or progress within an occupation and/or
- An official record (certificate, diploma) of achievement which recognizes successful completion of education and training, or satisfactory performance in a test or examination

### **2. Definition of Certification**

- The process of issuing certificates or diplomas which formally recognize the achievements of an individual
- To empower qualification holders to conduct their roles

## **11. Further Considerations**

### **3. Interrelationships of Qualification System**

- To link countries' historical, economic and industrial development, their culture and education and training systems
- To be bridge to link between education and training system and labour market through screening whether people have capabilities or not, based on standard
- To be influenced by assessment and evaluation systems

### **4. Definitions of Vocational Qualification**

- Qualifications directly connecting to select jobs and giving impacts to increase salary and promote etc. in workplace

## 11. Further Considerations

### 5. Firms' Position on Vocational Qualification

- They are not only consumers of vocational qualifications produced elsewhere but also sites for the production of knowledge, Know-How and developments of learning situations
- Vocational qualification must correspond to their current needs and these requirements are likely to be changing rapidly as results of new technologies

## 11. Further Considerations

### 6. Difficulties of Assessment based on workplace skills

- Where assessment is based on skills and knowledge acquired in education and training institutes, quality assurance and the maintenance of standard over time is easier to manage
- Where some or all assessment is based on learning taking place on the jobs, relevance with workplace skills is easier to achieve but there is inevitably some loss of reliability on results of assessment, and quality assurance is more difficult and costly
- It is important to make realistic balance between relevant workplace skills on the one hand, and reliability and adequate quality assurance of assessment on the other

## 11. Further Considerations

### 7. Educational and Training institutes' Position on Vocational Qualification

- They have concentrated on providing transferable general skills instead of workplace specific skills under considerations that specific skills are difficult to reconcile with the requirements for the preparation of young people to seek jobs
- They are likely to have autonomy to give certificates to their students based on their achievements in education and training institutes

## 11. Further Considerations

### 8. Paradox of Vocational Qualification

- Recognition on capabilities of vocational certificate holders
  - Encouragement on lifelong learning
  - Facilitation on seeking jobs or transformation from one jobs to another
- Discrimination between people of whether they success to get vocational certificates or not
  - Discouragement on lifelong learning
  - Hindrance on seeking jobs or transforming from one jobs to another



## 11. Further Considerations

### 9. Ways of Assessment and Learning to Harmonize with lifelong learning

- Vocational Qualification based on the assessment of :
  - Candidates' potential at present, not past knowledge, skills and competence
  - Process-related knowledge, skills and competence (for example, learning to learn and take risks, and developing problem-solving skills, etc.) rather than contents-related ones because skills will change more quickly than in the past, people at all levels will need to be adaptable and open to change
- Forms of learning and assessment accompanied by acquiring vocational certificates should mainly adapt the self-directed learning and self-assessment method to encourage lifelong learning. Assessment, in this context, has roles not to frustrate but to facilitate lifelong learning. Certainly assessment should rely on national standard.

## 11. Further Considerations

### 10. Future Roles of Vocational Qualification System

- Vocational Qualifications need to be built into ladders of occupational as well as educational progression. This means that dental mechanics could become dentists, and legal and accounting clerks could become lawyers and accounts
- Vocational Qualification system, in this context, should have characteristics, showing vertical relevance in each job and horizontal consistency on the level of carrying out duties in various jobs
- To do these roles, vocational qualification system should be design to motivate young people by making learning and assessment activities more like real work and less like school

## 11. Further Considerations

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### 11. Recognition of Non-formal Learning in terms of Vocational Qualification

- The results of learning processes, what we call competences, are partly tacit and personal knowledge in their character. Competitiveness of companies and nations heavily relies on intangible knowledge, skills and competences of individuals
  - It is difficult to verbalize and delimit the single steps or rules intrinsic to a certain competence
  - In some case people are not even aware of being in possession of a competence. This is highly relevant to the task of identification, assessment and recognition of non-formal learning
- \* The term of non-formal learning encompasses informal learning which can be described as unplanned learning in work situations and elsewhere, but also includes planned and explicit approaches to learning introduced in work organizations and elsewhere, not recognized within the formal education and training system

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