Part Ⅰ: Country Profile and Socio-Economic Background

1. Profile of Korea

Located east of the Asian Continent, the Republic of Korea is a democratic state with 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 1,200 mm. 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 7th century and Parhae which succeeded Koguryo in the north. Thus, Korea entered a brief period of "Two Kingdoms" which ended with the fall of Parhae. In the 10th century, the Koryo Dynasty reigned on the Korean peninsula, followed by the Chosun Dynasty in the 14th century, which continued up to the Republic of Korea, inargurated 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 45.9 million with an annual growth rate of 0.98 percent in 1997. About 74.8% of the total population lives in urban areas. The population density is one of the highest, accommodating 455 persons per square kilo meter.

Approximately 49.9% of Koreans adhered to one type of religion or another, Buddhists forming the largest group with 48.8%, Christians representing 48.2% (Protestant: 36.4%, Catholic:11.8%) and Confucians representing 0.6%. (National Statistical Office, Social Indicators in Korea, 1996).

2. Economic Development

Until the mid-20th century, Korea remained an agrarian society. In the absence of natural resources, Korea launched an ambitious five-year economic development program series in 1962. The successful implementation of the economic development programs brought Korea to the threshhold of modern industrialization. Lacking natural resources, Korea's rapid economic growth owes much to abundant and well-trained labor.

Over the past 30 years, Korea's economic growth has been spectacular. From 1963 to 1978, real Gross National Product (GNP) rose at an annual rate of nearly 10 percent and per capita GNP which reached US$ 100 for the first time in 1963 rose to US$10,548 in 1996. The growth resulted in a 40-fold increase in per capita GNP in the past 33 years.

In 1996, Korea's gross domestic product (GDP) was US$ 455.6 billion

at current prices. During the period of 1975 to 1996, Korea's GDP increased more than five times (at constant market prices of 1990).

The share in GDP by industrial origin (Table 1) shows a significant decrease in agriculture. The agricultural sector accounted for 6.9 percent in 1995, having decreased from 44 percent in 1962. The share of manufacturing rose to 26.9 percent from 12.4 percent during the period of 1962-1995. The share of the service sector (including finance, insurance, real estate and business service) has risen from 34.1 percent to 42.5 percent during the same period.

Table 1. Shares in GDP by Industrial Origin, 1962-1995

(At current prices, percent)

	Year		
Classification	1962	1979	1995
Total	100.0	100.0	100.0
Agriculture, Forestry & Fisheries	44.0	20.3	6.9
Manufacturing	12.4	16.8	26.9
Social overhead and construction	9.5	16.8	23.7
Other services	34.1	35.4	42.5

Source : Economic Statistics Yearbook, 1963, 1980, 1996.

3. The Labor Market

In 1996, there were about 21 maillion people in the labor market. The number denotes approximately a 30 percent increase above the 1985 level. Labor force participation rates for males and females are 76.1 percent and 48. 7 percent, respectively.

The most dramatic change in the labor arena in Korea has been the tremendous increase in the number of working women. Women entered the labor force during the 1980s at more than three times the rate of men. Although the number of Korean women aged 16 and older increased by only 5 percent during the 1980s, the number of women in the labor force increased from 46 percent in 1970 to 53 percent in 1996. The greatest increase, however, occurred among women with children aged 18 and below.

The service sector absorbs the largest proportion of the labor force. In 1996 about 66 percent of the labor force was in service and others, The share of agriculture, forestry & fisheries continued to decrease from 50.4 percent in 1970 to 11.6 percent in 1996. The Manufacturing sector contributed 22.5 percent of the total employment in the country (Table 2).

Table 2. Labor Force by Industry

(1,000 persons, %)

Classification \ Year	1970	1981	1986	1991	1996
Employed persons	**9,617**	**14,023**	**15,505**	**18,612**	**20,764**
Agri, Forestry & Fisheries	50.4	34.2	23.6	16.5	11.6
Mining and Manufacturing (manufacturing)	14.3 (13.2)	21.3 (20.4)	25.9 (24.7)	27.2 (26.8)	22.6 (22.5)
Service & Others	35.3	44.5	50.5	56.3	65.8

Source : National Statistics Office, Economically Active Population Survey, 1997

About 20 percent of the labor force completed middle school, 50 percent completed high school, and 30 percent completed junior college, 4-year college or university. This high educational level of the labor force supports the claim that trained manpower, together with higher professional manpower, contributes to improve productivity and enhances the industrial structure in Korea. The educational status of the labor force is shown in Table 3.

Table 3. Labor Force by Educational Attainment

Classification \ Year	1985	1987	1990	1993	1996
Total	100	100	100	100	100
Primary school graduates and under	38	34	29	24	n.a.
Middle school graduates and less	21	21	20	17	20
High school graduates	31	34	38	42	50
Junior college, college and university graduates	10	11	13	17	30

Source : National Statistical Office, Social Indicators in Korea, 1990, 1997.
Ministry of Labor, Yearbook of Labor Statistics, 1997.

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. For example, rates have always been below 5 percent over the past 20 years except in 1980, which was a year of great political turmoil.

The unemployment rate reached 8.0 percent in September 1998 as compared to 3.1 percent at the end of 1997 and the average rate was 2.6 percent for the year 1997. The number of unemployed people soared to 934 thousand by the end of January 1998, adding 276 thousand people to the ranks of the unemployed. However, this figure is expected to increase in 1998 due to the severe economic downturn under the IMF control and the recent bankruptcy of a few large companies.

Part Ⅱ: Technical and Vocational Education and Training

1. Education System

1) School Ladder 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.

Education Law (article 81) stipulates that the following schools be established; 1) primary school, middle school, high school and college and university; 2) university of education and college of education; 3) junior college, air and correspondence university and polytechnic university; 4) trade school and trade high school; 5) civic school and civic high school; 6) special school; 7) kindergarten; and 8) miscellaneous schools. Among these, the schools in the first category constitute the backbone of the education system. Figure 1 shows details of the education system in Korea.

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

2) Pre-school education

Pre-school Education is provided by kindergartens for children aged

3-5. It aims at providing an appropriate environment for the social and verbal development as well as cognitive, affective and psychomotor ability of the children enrolled. There were 9,005 kindergartens with an enrollment of 568,096 throughout the country in 1997.

The curriculum covers the five areas of physical, social, expressive, linguistic and inquisitive life. In its infancy, pre-school education has mostly been initiated by religious, social, and private organizations. As a result, the enrollment rate has generally been low.

3) Primary Education

The 6 years of primary school education are compulsory and free for children from 6-11 years of age. Its goal is to provide basic skills and general education essential for understanding Korean culture and civic life in modern society. Nearly 100 percent of those eligible attend primary schools. There were 3,783,986 students enrolled in 5,721 schools in 1997.

4) Secondary Education

Middle School Education

Middle school education is offered for students aged 12-15 with a duration of three years. 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. As of 1997, 98.8 percent of all primary school graduates moved on to middle schools. Middle school education is free only in rural areas, and in the near future it is to become compulsory and free for all.

Figure 1. School System

High School Education

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 schools - foreign language, art & athletic, and science high schools. There were a total of 1,892 high schools, of which 771 were vocational high schools in 1997. High schools, both general and vocational, enroll 90 percent of their age group.

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 that, in turn, provide 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.

Vocational high schools aim at providing advanced general education as well as vocational education in the fields of agriculture, technology, commerce, and fishery-maritime. Beginning in the 1980's, vocational high schools offered many benefits and emphasized diverse field education to promote a skilled labor force to cope with the rapid changes in industry and society. In addition, foreign languages, science, art & athletic high schools have been implemented. With strong governmental support, these schools aim at identifying the gifted at an early age and developing their potential in these specialties to the maximum level.

5) Higher Education

The higher educational institutions are divided into 4 categories: colleges and universities; universities of education and colleges of education; junior colleges, the Air & Correspondence University, polytechnic universities[1] and other schools (including theological colleges and seminaries). Most higher educational institutions are under the supervision of the Ministry of Education. The Ministry of Education has control over such matters as student quotas, qualification of teaching staff, curriculum and degree requirements. About 68.8 percent of this age group enrolled in higher educational institutions in 1997.

College and Universities

Higher education aims at teaching and studying fundamental academic theories and their various applications as necessary for the progress of the society and the global community, thus fostering personalities capable of leadership. The period of study for college education is 4 or 6 years.

The unit for measuring completion of each course in universities is termed a “credit”. Each university controls the requirements for completion of each credit, the minimum credits necessary for graduation, the standard credits and maximum credits required to be taken each semester, the method to obtain and limits on special credit, and credits required for completion of preparatory courses on the basis of school regulations.

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[1] Open university was renamed polytechnic university based on the Higher Education Law which came into operation in March, 1998. However, open universities are named in various ways depending on the mission and objectives of the university.

Table 4. Current Status of Schools in Korea

Classification	School			Classes & Dept.	Students	Teachers
	Total	Nat'l & Publi	Private			
Grand Total	19,887 (966)	13,222 (947)	6,665 (19)	243,844	11,738,224	442,844
Kindergarten	9,005	4,422	4,583	20,078	568,096	27,586
Primary School	5,721 (902)	5,645 (902)	76	107,860	3,783,986	138,670
Middle School	2,720 (43)	2,030 (43)	690	49,956	2,180,283	97,931
Academic High School	1,121	531	590	27,732	1,376,688	60,110
Vocational High School	771	446	325	19,689	960,037	44,294
Special School	114 (2)	39 (1)	75 (1)	2,264	22,569	3,930
Civic School	1	-	1	3	195	3
Civic High School	7	1	6	19	418	57
Trade High School	19	-	19	199	9,365	296
Miscellaneous School (Middle School Level)	9	1	8	117	5,926	217
Miscellaneous School (High School Level)	11	8	3	20	825	309
Air & Correspondence H. S.	42	42	-	396	14,624	-
Junior College	155	11	144	2,329	724,741	12,468
Teachers College	11	11	-	500	20,948	814

Classification	School			Classes & Dept.	Students	Teachers
	Total	Nat'l & Publi	Private			
College & University	150 (19)	26 (1)	124 (18)	6,025	1,368,461	53,300
Air & Correspon-dence University	1	1	-	18	370,879	166
Polytechnic University	19	8	11	378	141,099	2,248
Graduate School	<592>	<121>	<471>	5,500	151,358	-
Open Graduate School	<12>	<8>	<4>	103	1,676	-
Miscellaneous School (College Level)	8	-	8	94	9,596	100
Miscellaneous School (Junior College Level)	2	-	-	26	3,652	61

Source : Ministry of Education, Statistical Yearbook of Education, 1997.

Note : 1. The figures in ( ) indicate the number of branch schools, and are not included in the Total number of schools.

2. The figures in < > are not included in the total number of schools.

3. The status of faculty members of graduate schools is included in the status on those of college and university.

4. The number of students on leave of absence is included (i.e., number of junior college students (724,741) includes students on leave of absence (213,878).

Universities of Education and Colleges of Education

The universities of education train primary school teachers and the university' colleges of education train secondary school teachers. All the universities of education are national. The course is 4 years; for practice there are attached schools, and the students should complete 4 weeks student teaching practice. During this training, they watch and teach primary school classes and also experience do some administrative work. The curriculum of the universities of education is divided into liberal arts and major fields and the major fields are subdivided into teaching subjects and general subjects. The general subjects are composed of the subjects which are related to primary education. From the general subjects the students are supposed to get broad basic knowledge as primary school teachers. The teaching subjects are designed to convey the concepts of national education and teaching methods. There are also advanced courses in specialized fields; students are required to take 21 credits in these subjects.

The courses offered by the colleges of education of general universities are generally composed of liberal arts, major fields, and general minor subjects. For the specialization of the prospective teachers they take required subjects and complete the required teacher training.

Junior Vocational Colleges

Junior colleges are two- or three-year post-secondary programs and are the direct result of the increasing demand for technical manpower attendant on rapid industrialization. They are a merger of the earlier

two-year junior colleges and 2-3 year professional high schools. Since their establishment in 1979, the number of junior vocational colleges has grown to 155 as of 1997 with an enrollment of 724,741 (including students on leave of absence).

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 engine 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 only years of education.

6) Special Education

Special education offers pre-school, primary and secondary education to those with visual, auditory, mental, physical, emotional or linguistic impairment, and so on. There are 114 special schools with a total enrollment of 22,789 severely handicapped children. In the case of lesser impediments, 25,300 children are given education in special classes for the disabled opened in regular schools. Special education teachers are recruited through a qualifying examination for special education given by the two national and six private colleges, and the five graduate schools attached to private universities which are qualified to train special education teachers.

2. Technical and Vocational Aspects of General Education

1) Primary School Program

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

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

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

The greatest contribution of our primary schools in developing vocational skills undoubtedly will be found in areas which are more general in nature. Competency and skill in reading, speaking, writing and computing, for example, are as basic to most vocations as they are in the primary school programs. As primary school children develop abilities to

communicate their ideas, make sound judgements, analyze relationships between separate elements, and predict the consequences of specific actions, they are preparing themselves for vocational competency. In most vocations, such abilities are far more valuable than specific manipulative skills.

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

2) Middle School Program

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

The subjects directly related to productive work in the middle schools are technology and industry, home economics, and computer science. Among these, computer science is an elective subject. Of the 102 units to complete the middle school programs, students are required to take 4 units of home economics and 5 units of technology and industry.[2]

The middle school home economics program encompasses a wide range

[2] One unit means the amount of school learning undertaken by a 50 minute instruction per week for one semester which is equivalent to 17 weeks.

of content and provides various levels of skill development. In the area of food, for example, attention is given to basic understandings of nutritional problems, marketing, food preparation, the use of cooking equipment, serving, and other skills.

The technology and industry program involves courses related to technology in manufacturing, construction, communication and transportation, agriculture, industry, commerce, fishery and career guidance. The courses are designed to enhance knowledge on materials, energy, tools, machine and industrial manufacturing and the use of materials and tools, teaching basic knowledge and skills common to all occupations for students to adjust industrial society and improve one's ability to suit one's own aptitude.

3) High School Program

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

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

Vocational education programs in academic high schools were established in 1974. The 3rd year students in the vocational track take technical-vocational programs either at their own school or at other institutions such as vocational schools, private technical institutes, attached class of technical high schools and vocational training centers.

Table 5. The Number of Students Taking Vocational Education Program

Classification \ Year		1993	1994	1995	1996	1995
Program Entrusted	Vocational school	7,300 (12.5)	6,865 (14.1)	5,607 (14.2)	4,669 (15.1)	4,474 (17.4)
	Technical high school	2,706 (4.6)	2,429 (5.0)	1,679 (4.3)	1,109 (3.6)	799 (3.1)
	Public training center	8,072 (13.8)	6,912 (14.2)	5,395 (13.7)	4,414 (14.3)	4,431 (17.2)
	Authorized training center	5,477 (9.3)	6,079 (12.5)	7,828 (19.9)	6,186 (20.0)	2,292 (10.5)
	Private technical institute	5,670 (9.7)	9,268 (19.1)	6,661 (16.9)	6,007 (19.4)	3.316 (15.3)
	In-company training center	0 (0.0)	774 (1.6)	1,088 (2.8)	415 (1.3)	607 (2.4)
Academic schools' own program		29,355 (50.1)	16,262 (33.5)	8,109 (26.2)	8,109 (26.2)	5.812 (22.6)
Total		58,580	48,589	39,408	30,909	21,731

Source : Ministry of Education, 1997.

Students enrolled in the vocational track in academic high schools numbered 21,731 which was equivalent to five percent of total academic high school population. The number of students selecting a vocational

track has been in decline since 1993. The number of students per year in the vocational education program is shown in Table 5.

For academic high school students, vocational school provides courses in electronics, electricity, electric installation, commercial design, automotive repair, information processing, industrial arts and beauty art.

The vocational education programs attached to technical high schools provide courses in machinery, lathe, welding, electricity, textile, automotive repair, chemical engineering. Public vocational training centers provide courses in casting, lathe, mechanic assembling, milling, canning, metal work, electric welding and electric plumbing. Private technical institutes provide courses in automative repair, aircraft repair, heat control, information processing, cooking, beauty arts, clothing, confectionery, baking and nursing.

3. Technical and Vocational Education

The technical and vocational education programs under the formal education system are provided at both high schools and post-secondary junior colleges. The high school level technical-vocational education programs are three years and the post-secondary programs are two years, with the exception of the marine & fisheries courses and nursing courses which last two and a half years and three years respectively.

In 1997 there were 771 technical and vocational high schools with a total enrollment of 960,037 which is about 40 percent of total high school enrollment. There were 155 junior colleges.

1) Technical and Vocational Education In High Schools

Vocational high schools aim at educating capable skilled workers equipped with sound vocational awareness and professional knowledge to cope with rapid changes in an information-oriented industrial society. They provide technical-vocational education programs in the specialized fields of agricultural, technical, business & commerce, marine & fisheries, and home economics. These vocational high schools are the major sources of the craftsmanship level of industrial manpower in Korea.

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

In 1997 there were 27 agricultural high schools, 191 technical high schools, 248 commercial high schools, 10 fishery-maritime high schools, 38 combined vocational high schools and 232 comprehensive high schools which provide vocational as well as academic courses. These combined vocational high schools are usually located in rural areas or small and medium sized cities and towns where there are a small number of eligible students to take a variety of technical-vocational courses. Table 6 shows

the current situation of vocational high schools.

There are 53 different courses of students that can be chosen by students at technical high schools, 14 at agricultural high schools, 8 at maritime-fishery and 7 at business and commerce high schools.

Table 6. Status of Vocational High Schools

Classi-Fication	Schools			Students			Teachers		
	Publ.	Pri.	Total	Publ.	Pri.	Total	Publ.	Pri.	Total
Agricultural	27	-	27	22,162	-	22,162	1,400	-	1,400
Technical H.	119	72	191	186,667	131,477	318,144	9,399	5,166	14,565
Commercial	102	146	248	102,902	262,183	365,085	5,301	10,160	15,461
Fishery & Marine	10	-	10	7,452	-	7,452	456	-	456
Vocational	48	15	63	42,208	27,053	69,261	2,420	3,389	3,389
Comprehen-sive	140	92	232	75,438	102,495	177,933	4,546	4,477	9,023
Total	446	325	771	436,829	523,208	960,037	23,522	20,772	44,294

Source : Ministry of Education, Statistical Yearbook of Education, 1997.

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 practicals 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.

2) Technical and Vocational Education in Junior Colleges

High school graduates and those with an equivalent academic background may enter junior colleges. Since 1994, entrance to junior colleges has been determined on the basis of school achievement, scholastic achievement test, interview, and aptitude tests. Also 50-60 percent of the freshmen quota is reserved for the graduates of vocational high schools, craftsmen qualified by the National Certification System and workers meeting a specified amount of industrial experience.

Although junior vocational colleges place emphasis on practical education aimed at producing mid-level technicians, it is not necessarily a terminal point of schooling. Doors are kept open for its students to continue education at universities. For employed youths, it provides avenues to universities of technology as well as the Korea Air and Correspondence University. As efforts are intensified to ensure the relevance of junior college education to industrial needs, the percentage of employment among graduates is increasing.

Table 7. Number of Junior College Student by Program

Classification	Enrollments by Course			
	1st year	2nd year	3rd year	Total
Humanities	17,225	14,628	-	31,853
Social Sciences	77,722	70,629	-	148,351
Natural Sciences	27.381	177,830	24	378,657
Medical & Pharmacy	27,381	25,680	13,881	66,942
Arts & Physical Ed.	42,026	35,776	-	77,822
Teaching Profession	10,877	10,239	-	21,116
Total	376,034	334,802	13,905	724,741

Source : Ministry of Education, Statistical Yearbook of Education 1997.

4. Vocational Training

1) Vocational Training System

Since korea's independence in 1945, vocational training receives attention as a means of non-formal education and offers education for the unemployed on the basis of the Education Law. The first legal basis for vocational training was 'the clause for the training of skilled manpower' in the Labor Standard Act which was enacted in May 1953.

Thereafter, there was a keen necessity for the Industrial Manpower Training system with regard to substantial progress of the Economic Development Plan. The result was the vocational training system which was formally introduced by the enactment and enforcement of the 'Vocational Training Act' in 1967 (Y. H. Lee, 1995).

The Central Institute for Vocational Training, with the purpose of educating vocational training facilities, was established in June 1968 and

the establishment of 'Public Institute of Vocational Training' followed thereafter. The latter was founded by the public loan of Asian Development Bank (ADB) and International Bank for Reconstruction and Development (IBRD), and its operation meant the realization of the vocational training project. In December 1974, Special Act for Vocational Training was enacted with the purpose to regulate an obligatory system of skilled manpower training for employers who operated with a certain number of employees. With the enactment of the 'Basic Laws for Vocational Training' in December 31, 1976, the system of industrial manpower training took full shape.

After the enactment, the present Korea Manpower Agency (KOMA) was founded with the purpose of sound vocational training, R & D and operation of the National Technical Qualification Test. The main activities of this agency include the integration and operation of the Korea Technical Qualification Corporation and 24 public vocational training institutes, Changwon Crafts' College.

Vocational training can be divided into public vocational training, in-plant vocational training and authorized vocational training by the standard of an implementing agency. The number of trainees by training institutions is shown in Table 8.

Table 8. Number of Trainees by Institutions in 1997

Classification		Vocational Training Institution	Trainee
Total		477	302,646
Public	Public total	96	54,547
	KOMA	41	42,440
	KEPAD	1	210
	KCCI	8	4,485
	Central government	37	4,424
	Local government	9	2,988
In-plant		242	202,293
Authorized		139	45,806

Source : Ministry of Labor, "1997 Yearbook of Labor Statistics"
Note : KEPAD (Korea Employment Promotion Agency for the Disabled)

2) Vocational Training Course

The vocational training courses are divided into 'basic training', 'upgrade training', 'job transfer training', and 'retraining' by the object of training.

To provide various kinds of vocational training more systematically, the government readjusted the annual notification of the vocational training standard system. The current system presents short term training, which lasts less than one year, proving a more flexible means of training, specifically, the instructor has the right to accept a training curriculum guideline apart from the present strict vocational training standard system

and can revise the contents to some extent. As of the end of 1997, there exist vocational training standards which are composed of 477 fields covering 23 technical areas.

Initial (Pre-employment) Training

Initial training is placed at the beginning of its progressive stages in the structure of the vocational training system. It is provided for young persons and adults with little or no previous work experience as a vocational training program. Programs of initial training include general education which is coordinated with practical training; 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.

Initial training is composed of two categories in Korea: Public vocational training is undertaken by central and local governments or by the Korea Manpower Agency (KOMA). As of the end of 1996, there were 41 agencies under KOMA, training middle and high school graduates and dropouts. There are also many other public training institutes under other agencies including the Korea Chamber of Commerce and Industry (KCCI). It concentrates on those trades in which training is difficult to carry out by small enterprises, such as mechanics, electronics, electronics, and metal working.

There are two types of private initial training; in-plant training and authorized training. Enterprises are obliged to develop skilled manpower for their own needs. Enterprises with more than one thousand employees should conduct in-plant training.[3] Otherwise, they should pay a certain

amount of money as a vocational training levy.This training levy system was replaced by the Employment Insurance System (EIS) which began to be effective as of July 1, 1995.

Authorized training is carried out by corporations or individuals, who are authorized by the Ministry of Labor according to the Basic Vocational Training Act. They mainly provide training in trades where the provision of training through public or in-plant training is difficult. Sometimes they conduct training on behalf of the government or on behalf of a single enterprise.

Table 9 presents a few types of vocational training provided by public and private training organizations

Table 9. Vocational Training (1997)

Institutions		Total	Initial Training	Further Training	Retraining
Total		302,646	103,096	169,649	29,901
Public		54,547	23,440	28,906	2,201
Private	In-plant	202,293	33,880	140,713	27,700
	Authorized	45,806	45,776	30	0

Source : Ministry of Labor, Current Status of Vocational Training, 1997.

Further Training

When workers have to adapt their techniques and skills to constant changes, further or continuing education is needed to meet the demands

[3] Before July 1995, the minimum number of employees required to carry out in-plant training was 200 (January 1975 March 1977), 300 (April 1977 June 1989), 200 (July 1989 December 1991), and 150 (January 1992 June 1995).

for vocational training throughout life. As a second program of vocational training, effective further training enables persons engaged in an occupation to improve their performance, to broaden the range of their activities to gain promotion, and to update their skills and knowledge (C.H. Kim and C.H. Lee, 1997).

As shown in Table 9, most further training is provided by in-plant training centers. As a matter of fact, further training, expressed as vocational competency development[4], is regulated by the Insurance Act, vocational competency development indicates the development and the improvement of job competency. The project aims to maintain the worker's standard of living and to contribute to the development of the national economy. Therefore, the Ministry of Labor takes charge of the services and supports its administration.

What, then, is the difference between vocation training (VT) and vocational competency development (VAD) in Korea? Table 10 compares the two types of training. As shown in the table, vocational training aims to train workers and job-seekers in job competency, whereas vocational competency development looks to improve performane ability of the insured in firms. Thus vocational training concentrates on initial training, whereas vocational competency development focuses on further training.

Vocational competency development is financed by employment insurance funds which are collected from enterprises. According to an assessment of the Korean experience, the compulsory training levy

[4] The Ministry of Labor, Republic of Korea uses the term vocational ability development instead of vocational competency development.

imposed on enterprises of a certain size has succeeded in increasing the volume of basic training carried out in the workplace. However, this kind of levy has been less successful where it is necessary to persuade employers to provide further training and retraining. A major factor contributing to this apathy has been employers' (and therefore workers') preference for academic qualifications rather than work-related skills. Recently, employers have required that workers be trained in work-related skills but have been unable to find programs and instructors appropriate to their needs.

Table 10. Vocational Training and Vocational Competency Development

Criteria	Vocational Training	Vocational Competency Development
Legal base	Basic Vocational Training Act	Employment Insurance Act
Application	Workers and job-seekers	The insured
Training objective	Job competency	Improvement of job ability
Training contents	Basic training concentrated on manufacturing industry	Upgrading training for ability development in various trades
Executing body	Public, in-plant, authorized Training institute	Enterprises(or consignment to training institutes)
Training duration	Long term (6 months to 2 years)	Short-term (hours, weeks)
Training management	External training by the government	Self-controlled by the enterprises (support from the government)
Training expenditure	Government, employers	Employee (insurance money)

Source : Korea Manpower Agency, Human Resource Development in Korea, 1997.

5. National Technical Qualification System

1) Overview

Korea introduced the National Qualification Testing (NTQT) system and scheme in 1967. The aim of the NTQT scheme is to officially test and recognize the occupational technical knowledge and skill standards of individuals and thereby properly guide and direct the training and development of skilled technical manpower required by the business, industries and governmental organizations and at the same time to improve and enhance the socio-economic status of skilled technical people (M. K. Lee, 1998).

The government tests the technical skill level of a person and certifies his/her ability on a certain level through the National Technical Qualification which has been operating since the introduction of the National Technical Qualification Act in 1973.

There are three major qualification categories or divisions in the NTQT system: Engineer Group, Craftsman Group and Service or Business Group. Engineer Group includes Class 1 Engineer, Class 2 Engineer and Professional Engineer. Craftsman Group includes Assistant Craftsman, Class 2 Craftsman, Class 1 Craftsman and Master Craftsman. Service Group consists of three levels of qualification; Class 3, Class 2 and Class 1.

The technical field is classified into 24 sectors such as machinery, metal, chemical engineering, electricity, electronics, etc. and the technical

qualification title is composed of total 737 titles, 275 in the engineer group, 433 in the craftsman group, and 29 in the service group.

The Korea Manpower Agency (KOMA) and the Korea Chamber of Commerce and Industry (KCCI) were commissioned to execute the National Qualification Testing. The qualification testing of the engineer group and craft group is implemented by KOMA, and the service group (including abacus calculation, bookkeeping, typing, etc.) is implemented by KCCI.

A total sum of 4,905,329 persons have acquired national technical qualifications as of the end of 1996. The outcome of the national technical qualification system is shown in Table 11. .

Table 11. Outcome of the National Technical Qualification Testing System

Total	Technical Group			Craft Group				
	Profess-ional Engineer	Class 1 Engineer	Class 2 Engineer	Master Craftsman	Multi-Skilled Craftsman	Class 1 Crafts-man	Class 2 Craftsman	Assistant Craftsman
4,905,329	14,480	389,675	522,317	2,597	1,447	132,546	3,421,398	420,869

Source : Ministry of Labor, "1997 Yearbook of Labor Statistics"
Note) not including the number of persons acquiring qualification in the service group, 11,317,814 implemented by KCCI.

2) Reform of the Qualification System

There have been many criticisms on the technical qualification system as follows.

- Clear demarcation between engineer group and craftsman groups that constrains production workers to be promoted
- Centralized management of the qualification system by the government is not flexible enough to meet the changing demands for the technical qualification. The qualification of occupations for which new skills are demanded (i.e. internet) can be managed more efficiently by the private sector than by the government.
- Eligibility for the qualification based on formal schooling inhibits the functioning of labor market and constrains the transfomation of the Korean society from a schooling-based society to a competency-based-society.
- Testing methods are inappropriate to test skills demanded by industry. Testing methods emphasize written tests and discourage experienced skilled workers to acquire certificates.

The Education reform proposal made by the President Commission on Education Reform includes the reform of the qualification system. According to the proposal, The qualification system will be reformed to raise the competitiveness of the growing human resources by strengthening the links between education and the labor market as well as upgrading the standard and direction of vocational education. This will

- Lead the way toward the establishment of lifelong learning and a competency-based society by strengthening the links between schooling and qualifications:
- Establish a qualification system that will be recognized anywhere in the world as a way to prepare for the free exchange of labor among countries in the era of globalization:

- Increase the participation of industries in strengthening on-the-job training and work experience: and
- Link the job competency-based system with the National Qualification System.

3) Amendment of the National Technical Qualification Act

With the education reform efforts, the National Technical Qualification System was revised. The National Technical Qualification Act was amended in March, 1997 (amendment of "the Enforcement Decree" of the Act). The amended act is scheduled to come into operation in 1999. The major changes made in the amendment are as follows:

(1) Classes of skill level will be reduced from 8 to 5 in order to meet the industrial demands. The classes include professional engineer, master craftsman, engineer, industrial engineer and craftsman. Also the qualification titles will be reduced from 737 to 595 (Table 12).

(2) The application requirements for the qualification testing will be more favorable for certificate holders and field experienced workers than those who have much schooling. The application requirements for each level of qualification tests for respective division is shown in Table 12.

(3) The qualification testing methods will emphasize practical tests rather than written tests. Written tests for occupations such as plastering and tilesetting will be abolished. Methods of technical qualification testing are shown in Figure 2.

(4) Qualification testing of occupations for which required skills are not rapidly changing will be operated by the government, while occupations for which required skills are ever changing will be operated by private organizations.

Table 12. Application Requirements for the Technical Qualification Testing

Class	Title	Application Requirements
Professional Engineer	97	• College degree + 7 years of work experience • Junior college + 9 years of work experience • 6 years of Industrial Engineer • 4 years of Engineer • 8 years of Craftsman • 11 years of work experience
Master Craftsman	33	• Completion of Master Craftsman Course in Polytechnic College • 6 years of Industrial Engineer • 8 years of Craftsman
Engineer	98	• College degree • Junior college + 2 years of work experience • 4 years of work experience • 1 year of Industrial Engineer • 3 years of Craftsman
Industrial Engineer	130	• Junior college degree • 5 years of work experience • Completion of education and training course • 1 year of craftsman
Craftsman	205	• No requirements for education and work experience

Source : Ministry of Labor, Current Status of Vocational Training, 1997.

Figure 2. National Technical Qualification System

Part Ⅲ : Lifelong Education

1. Institutionalization of Lifelong Education

In view of the important role of lifelong education with regard to self-realization, provisions have been added to the Constitution which holds the government responsible for all necessary support for the promotion of lifelong education. In this connection, legislative actions were taken, culminating in the enactment of the Pre-School Education Promotion Law and the Non-formal Education Promotion Law. The government's support for preschool education facilities and non-formal education organizations were increased.

To meet the social demand for education, particularly of employed youths and adults who have missed the opportunity for formal school education, schools have increased in number and diversified in kind. Air and correspondence high schools, the Air and Correspondence University and polytechnic universities have been established and these are supplemented by numerous private institutes and schools equivalents operated by social organizations and religious foundations. The Non-formal Education Promotion Law established the criteria for the recognition of non-formal education institutes as the equivalent of formal education corresponding to each level. Their graduates are equally qualified as those from formal schools, for entrance to schools on the next higher level.

As the Constitution requires the state to promote non-formal education,

the government aims at providing each and every citizen with increased educational opportunities and helping them cultivate their potential capacity and contributions to social development. To achieve the two major goals of affiliation education to society and make society a place of learning, the government has enacted the Non-formal Education Act and increased support of related educational organizations.

2. Non-formal education

Non-formal education is defined as all forms of education, with the exception of school education, which constitute the system of lifelong education. The non-formal education programs are categorized as (1) para-school education, (2) vocational training, and (3) general or liberal education.

Para-schools are excluded from the main school ladder stream in the sense that they do not require a day-long attendance in an institution. This category includes civic schools, civic high schools, trade schools, trade high schools, industry-attached schools (middle and high), school -attached night classes (middle and high), air and correspondence high schools. The college degree acquisition program operates through self-study such as in the Air & Correspondence and polytechnic universities.

Vocational training is offered by technical colleges and vocational training centers under the Ministry of Labor and by private institutions. Training programs in agricultural technology are offered by the Office of Agricultural Guidance and the Ministry of Agriculture and Forestry. Those in fishery and maritime are offered by the Ministry of Maritime

Affairs and Fisheries.

Cultural education for the general public is to promote lifelong education of diverse socio-economic groups of the general public. Non-formal educational facilities defined in the Non-formal Education Act. Public libraries, museums, domestic and foreign cultural centers, national theaters, events and publicity programs of various women's organizations, and mass media such as newspapers, TV, radio and cable TV, all offer cultural education.

3. Air & Correspondence Education

Founded in 1974, air & correspondence high schools admit middle school graduates who are unable to pursue formal school education. There were 42 air & correspondence high schools with an enrollment of approximately 14,624 students in 1997. In addition to broadcasting programs, students are required to attend Sunday class instruction every other week. They are also required to submit assignments. By completing three-year course and passing a qualification examination, graduates are as equally qualified as the graduates of high schools.

The two-year Korea Air & Correspondence University was founded in 1972 and was reorganized in 1982 to confer a bachelor's degree. It has been expended to a four-year university with 18 departments, with a combined enrollment of about 370,879. The period of study for graduation is from four to ten years.

Instruction features a variety of methods: self-study, broadcast lectures,

classes, homework, and assignments. In addition, the distance education system began in November, 1995. The cable television system was launched in September, 1996 so that students can learn through various media. Lectures can be broadcast through EBS TV and radio.

The majority of students enrolled are workers in industries, government officials, soldiers, teachers and others. Thus, Korea Air and Correspondence University is contributing to the promotion of scholarly attainments and in-service training.

4. Polytechnic university

The polytechnic university provides employed youths and adults with an alternative approach to higher education. Since the establishment of Kyonggi Technical Open College (later it was renamed Seoul University of Technology) in 1982, 19 polytechnic universities with an enrollment of about 141,099 have been established.

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

Experimental and practical exercises are the center of the curriculum of a polytechnic university in order to make a positive emphasis on the practical aspects of education. To heighten adaptability to industrial sites, a polytechnic university employs staff with teacher's licenses at the industrial site as supplementary teachers.

5. Credit Bank System

As the foundation for the construction of open and lifelong education, this system enables every learner who has completed courses which are subjectively evaluated and authorized to earn college credit. When credits are accumulated and meet certain standards, he or she can receive a college degree.

Each citizen can take part in the credit bank system, but if one wants to take a course for a degree, one should be a high school graduate or equivalent. The ways to receive credit are that 1) one has finished a certain course of education which is evaluated and acknowledged, 2) one has passed the tests set for self-study, 3) one has the certificate set by the law of certification and 4) one has received credit through part-time registration.

When the credits meet certain conditions, one can receive an associate's degree or bachelor's degree and with a degree from a junior college one can apply to transfer to a four-year university; or with a college degree one can apply for graduate school.

To increase the opportunity for education for workers at the industrial

sites and to activate educational collaboration with the industrial complex, it offers an educational system to the industrial complex.

6. Self-Study as an Alternative to a Bachelor's Degree

Through a standard examination administered by the government, self-study has been recognized as a new avenue to a bachelor's degree for those young people and adults who have a high school diploma but have missed the opportunity for higher education because of financial difficulties or lack of time. The self-study system as an alternative to a bachelor's degree has been implemented since 1990 on the basis of the "Self-study as an Alternative to a Bachelor's Degree Law."

There are examinations at each stage toward obtaining a bachelor's degree. However, holders of technical qualifications on the basis of the National Technical Qualification Law, successful applicants and holders of qualification licenses in various kinds of national examination and graduates of educational courses offered by universities and industrial complexes are recognized as having a school career equivalent to a bachelor's degree through self-study, so the self-study system exempts them from the examination at each stage or some parts of the curriculum. By providing an alternative path to a bachelor's degree, the self-study system attaches as much importance to non-formal education and the lifelong process of learning as to formal school education.

The 12 specialized fields were set up by the implementation of the self-study as an alternative to a bachelor's degree. The process of obtaining a bachelor's degree through self-study requires passing a four stage examination.

Part Ⅳ : TVET Supporting Systems

1. Administration of TVET (Technical and Vocational Education and Training)

1) Organization of TVET Administration

Administration of Technical and Vocational Education

The Ministry of Education (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.

Headed by the Minister and Vice Minister, the Ministry has two offices and four bureaus: Planning and Management Office and School Policy Office, and Lifelong Education Bureau, Academic Research Policy Bureau, and Education Information and Technology Bureau and Education Environment Improvement Bureau. In addition, 13 professional officers are responsible for offices of professional concerns. The organization of the Ministry of Education is shown in Figure 3.

Figure 3. Organization of the Ministry of Education

Figure 4. Organization of Metropolitan (Provincial) Office of Education (Example : Seoul Metropolitan Office of Education)

The Lifelong 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 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.

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

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

A superintendent represents the executive body of the local offices of education, which is responsible for the administration of education, art, and science. Elected by the local board, the superintendent serves four years. As of 1998, there are 16 regional offices of education in metropolitan cities and provinces. At the regional offices, the Science and Technology Education Section under the Secondary Education Bureau is in charge of the technical-vocational education of upper-secondary school level.

As for educational advisory organization, the Advisory Council for Educational Policy assists the Minister of Education. The Advisory Council for Educational Policy was inaugurated in May, 1988, to examine the educational policy of the government and important matters related to educational development. It should provide advise and suggestions as requested by the Minister of Education.

It has performed vigorous discussion and research activities since then and has produced excellent results in the improvement and advancement of educational policies. These results include the improvement of the entrance system for junior colleges, the establishment of the local autonomous system, the grouping of promotion measures for special education, the reform of vocational high schools, the encouragement of the School Security Mutual Benefit Association, the enforcement of a guarantee system for excellent teachers and so forth. The Council consists of 60 members appointed for two-year terms, all specialists in education. The Council consists of six subcommittees and a Comprehensive Steering Committee which is composed of the chairmen of subcommittees.

Administration of Vocational Training

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 four divisions: Training Policy Division, Ability Development Division, Training Guidance Division, and Qualification Promotion Division.

The Korea Manpower Agency is a subsidiary public corporation responsible for vocational training. Main functions of KOMA 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.

2) Financing of TVET

The educational finance in Korea consists of the central government budget, the regional or local government budget and the financial resources of private schools. The larger portion of educational finance is dependent on governmental support, students' tuition, while contributions from companies and social organizations occupy a very small share.

The major source of national educational budget is internal revenue. This budget comprises operational expenditures of the Ministry of Education, national universities, research institutes, and grants for local educational finance (57 percent) to support primary and secondary education in the individual regions.

Private schools exists at every level of education from elementary to college. For junior colleges and universities, up to 80 percent are

private schools. Funding for private schools mostly depends on tuition from parents, support from national or regional entities and resources from the schools' foundations.

The Korean government has greatly increased the education budget embarked for the improvement of the quality of education in accordance with the emphasis on quality in recent education. In an effort to increase the education budget to 5 percent of the GNP, in 1997 the size of the education budget reached 4.8 percent.

The size of the central government's education budget was 18.3 trillion won which was 24.0 percent of the central government total budget and the greatest share. To compensate for education budget, Korean government in 1991 tentatively instituted an education tax, then changing it to a permanent tax which eventually became an important financial resources to the central government as it represented 33 percent of the budget for MOE.

15.3 trillion won, or 83 percent of the total budget of 18.3 trillion won, is given through the metropolitan and provincial offices of education for the local funds of primary and secondary school education, and the remaining 3 trillion, 17 percent of the total budget, is disbursed directly by MOE itself.

Concerning the distribution of national funds, 242.3 billion won, or 8.0 percent is spent for vocational high schools and junior colleges and 12.1 billion, or 0.4 percent for lifelong education. The details of the distribution of national funds is shown in Table 13.

Table 13. Treasury Finance Disbursed by MOE, 1997

(Unit: in billion won)

Classification	Budget	Ratio(%)
Elementary and secondary school and special education	228.3	7.4
Vocational high schools and junior colleges	242.3	8.0
College education	1,344,1	44.0
Education information	61	2.0
Lifelong education	12.1	0.4
EBS and research organization	49.4	1.6
Ministry of Education's operations and staff	1,117.8	36.6
Total	3,055	100

Source : Ministry of Education, Education in Korea 1997-1998.

2. TVET Research and Development

The research and development works and projects for technical and vocational education and training are carried out mainly by the Korea Research Institute for Vocational Education and Training (KRIVET). KRIVET was established in 1997 to strengthen vocational education and training in order to provide all individuals with opportunities for lifelong learning as well as to contribute to enhancing the nation's competitiveness. It is under the protection of the Korea Research Institute for Vocational Education and Training Law.

KRIVET carries out the following educational research and development works in all areas of technical and vocational education and training.

- Conducting policy-oriented research on a national basis in the areas of vocational education and training, and industrial manpower;
- Developing, disseminating and evaluating various vocational education and training programs;
- Establishing a system for lifelong vocational education and training by building links between vocational education and training in industry;
- Assisting people in choosing and developing their careers in accordance with their competencies and aptitudes by compiling, analyzing and publishing the national collection of vocational education and training statistics;
- Formulating and undertaking research on the development of vocational qualification systems that value a person's vocational competencies and qualifications more than his/her formal schooling; and
- Promoting exchange of personnel and information with advanced countries to develop the field of vocational education and training in Korea, and to cooperate with developing countries in sharing our experience in vocational education and training.

3. TVET Teacher Training

Vocational-technical teachers for upper secondary technical - vocational high schools are trained mainly at technical-vocational teacher training department of various colleges and universities.

The teachers in the areas of technical education are trained at the Department of Industrial Education of College of Engineering at

Choongnam National University. The annual enrollment capacity or entrance capacity of the department is 70 students in seven different technological fields such as electronics, electrical, mechanical, building construction, civil, metallurgical and industrial chemical engineering. The teachers for computer technology are trained at the Korea National University of Education with annual training capacity of 20.

Students in the technical and industrial education department need to take various technical-vocational education and teaching related pedagogical subjects and practice student teaching in addition to taking their own specialized technical and engineering subjects and general subjects. Upon successful completion of the course, students are awarded the Bachelor of Science degree and a secondary school teacher license.

The teachers in the area of agricultural education are trained at three universities: Seoul National University, Soonchon National University and Kunkook University and the annual total entrance quota of the three Agricultural Teacher Training Departments of the three universities is 80.

The teachers in the area of fishery-maritime are trained at the Maritime-Fishery Education Department of Pusan Marine & Fisheries University. The annual training capacity of the department is 10.

The teachers of business and commerce studies are trained at 15 different colleges and universities throughout the country.

Other than these technical-vocational teacher training institutions, many

other colleges and universities offer teacher education programs in addition to the students' major subjects to supplement the supply of teachers for secondary schools. This arrangement provides an alternative path of becoming teachers of their major specialization for students enrolled in programs or department other than teacher training departments or colleges. The in-service training for upper secondary technical and vocational teachers is conducted by the four secondary schools. This arrangement provides an alternative path to becoming a teacher in their major specialization for students enrolled in programs or department other than teacher training departments or colleges.

The Korea University of Technology and Education (KUT) was established to train vocational training teachers and instructors for vocational and industrial training institutes and technical high schools in 1992. The University offers 13 undergraduate programs and two graduate programs (mechanical engineering and electrical engineering). The present current annual training capacity of KITE is 320 in 1998 and it will also provide upgrading and retraining programs for existing technical-industrial teachers and instructors ..

4. TVET and Industry Partnership

The cooperation and collaboration between technical-vocational schools and industry has been rather weak and loose. The industries have been providing unorganized and unstructured on-the-job work experience for the technical-vocational high school students and junior college students on a voluntary basis upon request by individual high schools and junior colleges.

To satisfy the needs of a rapidly changing society and to produce excellent industrial manpower, the Korean government has been in the process of restructuring the technical-vocational education and training system to develop partnership between TVET and industries especially in the areas of technical educational and training. The main purpose of the restructuring is to improve the efficiency and effectiveness of TVET by sharing the resources available in schools and industry.

The new technical high school education system which is called the dual system or [the Two-plus-one Program] was introduced in 1994. The program comprises two years of vocational education in schools, followed by one year of practical 'hands-on' field training in industrial based companies. In 1998 the program was operated in 40 designated model schools and 9,110 students are taking part in on-the job training at 1,928 industrial companies. From 1999 the implementation of this system will be given discretion to technical high schools.

The content of curriculum is as follows:

Classification	Current	Revised
Operational Method	3 years of schooling (six months of on-the-job training in the form of earlier employment	2 years of schooling 1 year of on-the-job training
Content of Education	Emphasis on theory and concept	Emphasis on duties and skill
	Daily course (attached night course in part)	Daytime course Night course Seasonal course

The duration of on-the-job training varies, ranging from 1-6 months in agricultural and commercial high schools, 1-12 months in technical high schools to 3-12 marine & fisheries high schools.

Cooperation between industry and colleges has been promoted to provide skilled manpower to meet the industrial demands. Junior college education contributes to the development of industry through the following activities: internship for students, industry field training of junior college faculty, education of industry employees in junior colleges, joint research and exchange of techniques and information between colleges and industry, the establishment and operation of the committee on Cooperation between Industry and College, and the operation of curriculum at the request of the industrial entities

5. International Cooperation in TVET

1) International Organizations for Cooperation in TVET

TVET Cooperation in OECD

OECD (Organization for Economic Cooperation and Development) was established in 1961 with the purpose of achieving the highest sustainable economic growth, contributing to sound economic expansion, and contributing to the expansion of world trade. OECD is composed of 29 member states which are mainly industrialized countries. Korea became 29th member state of OECD in 1996.

In order to collect various high quality materials and information about education policies through comparative studies among developed countries,

to experience active participation in information exchange systems, and to contribute to the development of education policies through participation in studies in various educational fields, seminars and programs, Korea registered as an observer of the OECD Education Committee and CERI (Center for Education and Innovation, a semi-independent educational research and development organization) and has participated in conferences held every year.

Also, Korea dispatches specialists to specialized conferences such as OECD International Education Statistics and Indicators, Programme on Educational Building, Institutional Management in Higher Education and conferences on the change in the role of vocational education.

The "Korea-OECD Education Training Seminar" on the subject of "The Education and Training of Industrial Manpower," was held in Seoul in May, 1994, and provided momentum to determine the direction of development in Korean vocational education policy.

OECD Education Projects are encouraged in that educational cooperation with OECD helps Korea participate in the stream of world education as Korea became a member nation of OECD and in that Korea can establish effective collaborative systems among industry, education, and research through organic cooperation with the economic and industrial world. Korea is involved in OECD projects such as International Indication of Educational Statistics (INES) and Financing Lifelong Education.

TVET Cooperation in APEC

APEC (Asia-Pacific Economic Cooperation) was formed in 1989 in Canberra, Australia, in response to increasing calls for closer economic cooperation among the economies in, and enhance interdependence within, the Asia-Pacific region through increased intra-regional trade and investment flows.

As of 1997, APEC (Asia-Pacific Economic Cooperation) consists of 18 member nations in the Asia-Pacific Area. For the improvement of cooperation and understanding among member nations in the educational field, the Minister of Education Conference was held in Washington in August, 1992, and it agreed to the establishment of the APEC Education Forum as a devise to encourage educational cooperation.

Accordingly, Korea organized a delegation including specialists in education, to participate in the Education Forum Conferences which have been held twice a year since the first conference in January, 1993. In fact, Korea sponsored the Fourth Education Forum in Seoul in June, 1994.

At the eleventh HRD Working Group Meeting held in Manila in 1995, Korea suggested an Exchange Program of Vocational Training Staff and Information, which was confirmed at the 13th HRD WG (Human Resource Development Working Group) meeting. The first stage involved an exchange program of vocational training instructors, vocational training experts and information on vocational training. The second stage included an exchange program of technical and skilled manpower, supporting

vocational training facilities and equipment.

Korea has been involved in the exchange program of vocational training staff and information since April of 1997. Seoul Institute for Vocational Training in Advanced Technology (SIVAT) has provided upgrading training courses for 46 participants from APEC member countries such as Brunei, Chile, China, Indonesia, Malaysia, Mexico, Philippines and Thailand.

TVET Cooperation in UNESCO

On the basis of the fundamental spirit of the United Nations and the Charter of UNESCO and the decision of the UNESCO General Assembly, the objectives of UNESCO are the diffusion of new international knowledge and a just understanding among nations through the exchange of education, science, and culture. At the same time, these objectives address the contribution to the establishment of world peace and the improvement of human welfare by promoting international understanding, amity and cooperation through active interchange among nations. Now UNESCO consists of 186 member nations.

To contribute to the internationalization of TVET in Korea, to show an amount of energy equal to our position in the world and to promote international understanding, Korea participates in all kinds of local education cooperation projects and promotes international exchange and cooperation in educational reform and development by participating in international conferences concerned with education.

UNESCO activities and programs are supported in various ways, such as a trust fund. The major programs include: APEID (Asia-Pacific Programme of Education for All) and UNEVOC (UNESCO International Project on Technical and Vocational Education). In order to persuade the domestic educational world and its specialists to participate in programs and in the process, also determining positions, Korea has put an emphasis on participation in the UNESCO General Assembly Executive Committee and various other committees. Consequently, it has made every effort to extend participation to subsidiary organization committees.

The Korean government is hosting "the UNESCO Second International Congress on Technical and Vocational Education" which will take place in Seoul 26-30 April, 1999. It is expected that about a thousand participants from 186 countries will attend the Congress. The Korean government makes an effort to capitalize the Congress to provide Korea with an impetus to play a leading role in international technical-vocational education.

TVET Cooperation in ILO/APSDEP

Korea became the 152nd member to the International Labor Organization (ILO) on December 9, 1991 (there are 174 member countries as of 1997). On June 10, 1996, Korea was elected to the three year Member of Governing Body. This is important basis for active participation in decision making process of international labor policy.

Under the International Labor Organization APSDEP (Asian and Pacific Skill Development Programme) was established to enhance skill

development, employment promotion, socio-economic development of member countries in 1978 (there are 29 member countries as of 1998). APSDEP collaborates with member countries in evolving an integrated approaches to regional training policies, strategies, guidelines and analyses. In line with national and ILO program priorities, APSDEP also assists in coordinating and improving the effectiveness of training program. With financial assistance from APSDEP, the Korean government has established the Seoul Institute for Vocational Training in Advanced Technology (SIVAT) to conduct vocational training for skilled manpower and to introduce advanced technology through the mutual exchange of up-to-date information, accelerating the economic and social development in the Asia and Pacific region as a cooperated program in 1989.

Major functions of SIVAT include advanced training for APSDEP member countries, upgrading training for developing countries, implementing cooperative projects, Expert training for foreign service, Exchange of vocational training information through R & D, curriculum development and development of teaching methods and training materials, and introducing high technology.

SIVAT has provided training for 697 persons from in the period of 1989 1996. In 1997 SIVAT provided upgrading training courses for 145 participants from 15 countries including APSDEP member countries.

Part Ⅴ: Directory of Key Related Institutions and Professionals

1. National Level TVET Administrative Offices

1) Vocational and Professional Education Policy Division
Lifelong Education Bureau
Ministry of Education
77 Sejong-ro 1-ka, Chongro-gu, Seoul 110-760
Tel. No.: (2) 720-2161
Fax No.: (2) 738-2432

2) Junior College Support Division
Lifelong Education Bureau
Ministry of Education
77 Sejong-ro 1-ka, Chongro-gu, Seoul 110-760
Tel. No.: (2) 720-3335, 730-6527, 737-3352, 720-3331
Fax No.: (2) 730- 6664

3) Ability Development Division
Ability Development Officer
Ministry of Labour
1, Kwacheon-city, Kyunggi-do
Tel. No.: (02) 503-9759, 5545, 5587, 5591
Fax No.: (02) 504-2039

4) Korea Manpower Agency
370-4, Gonduk-dong, Mapo-gu, Seoul 121-757

Tel. No: (02) 704-3346
Fax No: (02)716-5742

5) Korea Chamber of Commerce and Industry
Namdaemoon-ro, Choong-gu, Seoul 100-743
Tel. No.: (2) 316-3570, 3525
Fax No.: (2) 716-5742

2. TVET R&D Related Institutes

1) Korea Research Institute for Vocational Education & Training
155, Gaepo-dong, Kangnam-gu, Seoul 135-242
Tel. No.: (2) 3498-5600, 5700
Fax No.: (2) 575-3812

3. Teacher Training Institutions

1) Department of Technical and Industrial Education
College of Engineering
Chungnam National University
Taejon, 305-764
Tel. No.: (42) 821-5694
Fax No.: (42) 823-5436

2) Korea University of Technology and Education
307 Gajeon-ri Byungchon-myon
Chonan-kun, 330-860
Chungnam

Tel. No.: (417) 60-1000
Fax No.: (417) 64-3261

3) Department of Agricultural Education
College of Agriculture and Life sciences
Seoul National University
Suwon-city, Kyunggi-do 441-744
Tel. No.: (331) 290-2541
Fax No.: (331) 291-5830

4) School Policy Office
Ministry of Education
77 Sejong-ro 1-ka, Chongro-gu, Seoul 110-760
Tel. No.: (2) 737-5506, 720-3318, 720-3440, 720-3441
Fax No.: (2) 736-8984

4. TVET Related Professional Societies and Associations

1) Korea Institute of industrial Educators
College of Engineering
Chungnam National University
Taejon-city 305-764
Tel. No. : (42) 821-5691
Fax No.: (42) 823-5436

2) The Korea Society of Agricultural Education
College of Agriculture and Life Sciences
Seoul National University

Suwon-city, Kyunggi-do 441-744
Tel. No.: (331) 290-2525
Fax No.: (331) 291-5830

3) The Korea Society for the Study of Vocational Education
Korea Research Institute for Vocational Education & Training
155 Gaepo-dong, Kangnam-gu, Seoul 135-242
Tel. No.: (2) 3498-5600, 5700
Fax No.: (2) 575-3812

4) Korea Home Economics Education Association
Chung-Ang University
221 Huksuk-dong, Dongjak-gu, Seoul 156-756
Tel. No.: (2) 820-5379
Fax No.: (2) 824-3714

5) Korean Association of Business Education
Kong-Ju national University
Department of Business Education
182, Shinkwan-dong, Kongju-city, Chungnam
Tel. No.: (416) 59-8253, 50-8255
Fax No.: (416) 50-8255

5. Offices and Agencies for TVET International Cooperation

1) Technology Co-operation Bureau
Ministry of Science and Technology
Kwacheon-city, Kyunggi-do

Tel. No.: (2) 503-7666, 7667
Fax No.: (2) 503-7673

2) International Cooperation Officer
Ministry of Education
77, Sejong-ro 1-ka, Chongro-gu, Seoul 110-760
Tel. No.: (2) 720-3404, 3044, 3405
Fax No.: (2) 720-1501

3) Vocational and Professional Education Policy Division
Lifelong Education Bureau
Ministry of Education
77 Sejong-ro 1-ka, Chongro-gu, Seoul 110-760
Tel. No.: (2) 720-2161
Fax No.: (2) 738-2432

4) Training Guidance Division
Ability Development Officer
Ministry of Labour
1, Kwacheon-City 427-760
Kyunggi-Do
Tel. No.: (2) 503-9759, 500-5587, 5591
Fax No.: (2) 504-2039

5) International Cooperation Division
Korea Manpower Agency
370-4, Gonduk-dong, Mapo-gu
Seoul 121-757

Tel. No: (2) 704-3346
Fax No: (2) 716-5742

6) International Cooperation Division
International Labor Cooperation Bureau
Ministry of Labour
Kwacheon-city, Kyunggi-do
Tel. No: (2) 503-9759, 500-5587, 5591
Fax No: (2) 504-2039

7) Korea Research Institute for Vocational Education & Training
155 Gaepo-dong, Kangnam-gu, Seoul 135-242
Tel No: (2) 498-5600, 5700
Fax No: (2) 575-3812

6. TVET Professionals and Experts

Name	Organization	Area of Specialization
Dr. Mu-Keun Lee	Korea Research Institute for Vocational Education & Training (KRIVET) 155, Gaepo-dong, Kangnam-gu, Seoul 135-242, Korea Tel. No.: (2) 3498-5600, 5700 Fax No.: (2) 3498-5636	Vocational Education
Dr. Seon Lee	Ditto	Labor Economics
Dr. Suk-Min Chang	Ditto	Technology Education
Dr. Jong-Sung Lee	Ditto	Vocational Education
Dr. Sung-Won Kang	Ditto	Vocational Education

Name	Organization	Area of Specialization
Dr. Myong-Hoon Shin	Ditto	Chemical Engineering
Prof. Ki-Oh Jeong	Graduate School Hongik University 72-1, Sangsoo-dong, Mapo-Ku, Seoul Tel. No.: (2) 320-1087 Fax No.: (2) 320-1084	Vocational Education
Prof. Chul-Young Jung	College of Agriculture and Life Sciences Seoul National University Suwon 441-744 Tel. No.: (331) 290-2525 Fax No.: (331) 291-5830	Vocational Guidance
Prof. Pan-wook Kim	Chungnam National University College of Engineering Department of Technology Education 220, Gungdone Yusong-gu Taejon, 305-764 Tel. No.: (42) 821-5698 Fax No.: (42) 825-3556	Technical Education
Prof. In-Kyung Yoon	Korea National University of Education. Dept. of Home Economics Education Tel. No.: (2) 820-5378 Fax No.: (2) 824-3714	Home Economics Education

Part Ⅵ: Future Prospects and Tasks of Korean TVET

1. Main Education Reform Measures

The government gives priority to "the reinforcement of national competitiveness" to maintain its prosperity and development in the unlimited competition of industrialization and openness, while facing the information-oriented society. Accordingly, to raise the international competitiveness, great effort is being reinforced by the government, as well as by the people, in every field of society.

Furthermore, education has a mission to perform the role of taking the lead in change and reform and has the task of promoting education reform which can achieve the long-term development of education through fundamentally solving the problems of education.

In order to accomplish such a timely mission and task, the Presidential Commission on Education Reform (PCER), a consultative body directly under the President, was established in in February, 1994, and has announced educational reform suggestions in 48 areas. The Commission has set as its new ideology of education and its goal for educational reform "the construction of an open educational system and a lifelong learning society in which anyone can have a chance to have the education he or she wants for self-realization, anywhere, anytime." Therefore, this Commission announced major educational reform plans on May 31, 1995, with supplementary educational reform plan on February 9, 1996, and August 20, 1996.

The Education Reform Proposal (II) submitted on February 9, 1996 includes the New Vocational Education System.

2. The New Vocational Education System

Vocational education, meanwhile, continues to have the reputation of being a "second class" education system chosen only by those who have failed to get accepted at a college. And because 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.

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 blocked path to an open hope - graduates of vocational high schools will be given opportunities to continue with their

studies through polytechnic university, junior college, polytechnic college, 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: to revise the qualification system to link schools with businesses and thereby integrate education and training; promote effective use of the latest multi-media and telecommunications technology to provide learners with low-cost but high-quality vocational education; increase the autonomy of each school; and strengthen the role and finances of the local autonomous entities.

Despite the large number of highly educated individuals in their 20's and 30's, the overall educational standard of ordinary citizens is relatively low compared to their counterparts in developed nations. Currently, with respect to educational attainment the Korean workforce is as follows; 36 percent with less than a high school education, 45 percent high school

graduates, 6 percent junior college graduates and 13 percent college graduates. If the current trend continues, the radio will be 26 percent, 50 percent, 9 percent and 15 percent respectively by the year 2000. This means that we still have a long way to go before we are at the level of other developed nations.

In order to upgrade the current level of education to that of developed countries, a radical reform of vocational education is needed. To bring about this change, the government and business, as well as the educational and training institutions, have to combine their efforts and cooperate.

Following are the three main objectives to be accomplished by the year 2000.

(1) Ensure that those who do not plan to enter college are given opportunities to receive proper vocational training in high school.

(2) Ensure that vocational training at the junior college level will be available to those who desire it.

(3) Ensure that those working who wish to improve their professional skills are given the chance to receive any vocational education or training they desire.

3. Reform Efforts and Future Tasks of Korean TVET

Efforts are underway to establish a new vocational education that promotes school to work transition. First, legal foundation for "the era of open and continuing education" has been prepared. The legislation

on the credit bank system in 1996 was enacted to allow part-time registration to college on a test base.

Second, provisions were made to build a new vocational education system. The provisions include Vocational Education Promotion Law, Basic Law on Certification, and Korean Occupational Competency Development Institute Law, which will expedite improvements in vocational education. Supportive system was established to pursue excellence in research and development (Korea Research Institute for Vocational Education and Training was established in October 1997). Third, students in vocational high schools and industry workers are able to carry out further education beyond high school. These students hold priority in the selection process for colleges in related fields of study. Beginning 1996 graduates of junior colleges attain associate degrees.

The reform proposals made by PCER presents a blueprint for the Korean education in the 21st century. Since 1995 the Ministry of Education set up an action plan to put the reform proposals into practice. The ministry also laid out an investment plan for 1996-1998. A total of 9.4 trillion won was secured to carry out reform projects. Legislation is underway to make a new law or to revise the current law to facilitate the reform efforts. Therefore, it is expected that education reform will keep pace with the action plan set by the Ministry of Education.

The 120 education reform tasks should be carried out for at least 10 or 15 years to come. . The following is list of vocational education reform tasks included in the 120 tasks.

- Increasing the number of specialized high schools
- Linking high school curriculum to primary and middle school curriculum
- Improving admission procedures to junior colleges and polytechnic universities
- Strengthening field-oriented education in vocational high schools
- Upgrading educational facility and financial support for vocational high schools
- Improving quality of education in junior colleges
- Improving quality of education in polytechnic universities
- Strengthening the role of polytechnic colleges
- Supporting establishment and operation of new universities and new graduate schools
- Introducing degree programs for professionals and establishing professional graduate schools for vocational education
- Providing lifelong career guidance and information
- Expanding opportunities for vocational education for women and the underprivileged
- Approving educational attainment of students trained through tutorial system
- Expanding opportunities for vocational training and nurturing vocational education and training industry
- Reorganizing the feasibility of education account system
- Encouraging legalization of national and public vocational training institutes
- Founding a fund for vocational training and financial support and tax benefits for vocational training institutes

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Table of Contents

National Profile on Technical and Vocational Education in Korea

Published by :
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