

# 南韓職業教育系統之現況、 挑戰與未來因應

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## 摘要

本文旨在探討南韓職業教育之現況、挑戰、以及因應此一挑戰的新發展方向。南韓職業教育促成 1960 年代以來的高度經濟發展，然而，由於失業率高居不下、畢業生尋找工作困難等因素，南韓職業教育系統、全國性的共通基本課程、職業學校、專科學院以及四年制大學皆面臨相當多的問題與挑戰，針對這些問題，本文提供必須建議，作為改善職業教育品質之參考。

**關鍵詞：**南韓、職業教育、職業學校、專科學院

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來稿日期：2009 年 8 月 4 日；修訂日期：2009 年 9 月 1 日；採用日期：2009 年 9 月 10 日

# The Present State and the Future Challenges of Vocational Education in the Republic of Korea

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## Abstract

This paper presents the present state and the future challenges as well as the new directions of vocational education in South Korea. Korean vocational education has contributed to the rapid economic development since the 1960s and is continuing presently. However, the high unemployment rate of the graduates is placing vocational education at the crossroad. It has to face the challenges in terms of the vocational education system, national common basic curriculum, vocational high schools, junior colleges, and universities. Learning from South Korea, this paper suggests seven recommendations for the improvement of the quality and better development of vocational education.

**Keywords:** South Korea, vocational education, vocational high schools, junior colleges

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Manuscript received: August 4, 2009; Modified: September 1, 2009; Accepted: September 10, 2009

## 一、Introduction

Korea had achieved remarkable economic development from the 1960s to the 1980s with the implementation of the growth-oriented economic policy, and Korea's economic achievement has been well known as the 'Miracle on the Han River'. As illustrated, the 2006 World Bank statistics shows that Korea's GDP the 13th largest in the world and that the growth has been spectacular (Kim, Lee, Jeong, Baik, Choi, & Hong, 2007). With few natural resources at its disposal, Korea has achieved in joining the ranks of the high-tech nations of the 21st century with its human resources. The driving force behind the astounding growth in Korea is education (Huh, 2007).

Vocational education play a particularly critical role in lifting the skills and qualifications for those with low skills a very important matter of social cohesion for avoiding growing polarization by income level and for national economic performance. Vocational education is an important role ensuring that Korean industries have the skills and knowledge to compete in this changing environment (Lee, 2004).

In the past, vocational education was restricted as a preparatory education for occupations that require education below a college degree. In fact, in 1917, the American Vocational Association (AVA) defined that, in a narrowed meaning, vocational education was a kind of formal and informal education that prepares adolescents and adults for occupations that require education below a college degree (Na & Kim, 2008).

However, the restricted definition of vocational education is inappropriate in today's 'Knowledge-based society', where, also, the education has expanded both quantitatively and qualitatively. The structures of industries and careers are rapidly changing along with the industrialization and information. These changes require abilities based on multi-function, high-technology, and creativity. Therefore, a new frame for vocational education is required, which will then strengthen the level, scope, and content, and, at the same time, heighten the effectiveness of its support system (Chang, 2002, 2004; Jyung, 1997). In other words, as the society keeps changing, so will the paradigm of vocational education (Na, 2001).

In the United States and Europe, vocational education is not defined as a restricted concept anymore, and the target of vocational education is expanded beyond the specific people like the students of vocational high school and junior college. In addition, the con-

tent is expanded to various abilities and personalities needed for a knowledge-based society, including the technology-based education or training from the past (Na, 2001; Na & Kim, 2008). For example, the Association for Career and Technical Education (ACCTE) has been using the term 'career and technical education' instead of 'vocational education' since 1998 (ACCTE, 2002). This conversion of the term underlines the combination of academic education and vocational education aiming for the increase of the learning ability and opportunities for hiring all people.

The start of modernized vocational education in Korea was during the end of 19th century with the national establishment of schools of commerce and industry in 1899 and the School of Agriculture, Commerce, and Industry, in 1904. After the restoration of independence, vocational education has been fulfilled through secondary and higher education, and vocational education has also developed through informal education with the public institute of vocational training after the enactment of the Vocational Training Act in 1968 (Lee, 2003).

Vocational education in Korea contributed to raising human resources for economic growth in the 1970s and 1980s. However, it has been criticized that the education cannot properly cultivate the people to the recent environmental changes and informational & technological acceleration (Na, Chang, Jo, & Song, 2007). Also, the structure of vocational education is becoming unclear because the industrial structure and the employment system are not classified as the prior ones, such as agriculture, industry, commerce, service, or so forth, and some new jobs arise and others become extinct. Merging of businesses makes the characteristics of each business equivocal (Jyung, Choi, Kim, & Kim, 2006). Korea's competitiveness is weakened now due to the imbalance of manpower supply and demand. There are 'Skill Mismatch' problems between the trained people in vocational education institutes and the required people in companies, which add in the cost of retraining required by industries (Presidential Committee of Educational Reform, 2005). Along with the high unemployment rates of graduates, the difficulty of seeking jobs is getting more and more keenly.

Along with these changes, vocational education in Korea has been challenged. Also, in order for a breakthrough of the situation with the effort of vocational education institutes, like vocational high schools and junior colleges, diverse policies for activations based on the development plans are executed. Vocational high schools are present-

ing 'the renaming to thus', 'the increase in number of premium specialized high schools', the 'Specializing Vocational High Schools funded by Government Organization Program', and the 'Revitalization of Industry-Academic Cooperation Program for Working Agreement' (Employment-Agreement Contracts) according to the Plan for Reforming the Vocational Education System (2005) and the Strategic Plan for Cultivating Vocational High School for Realization of Hope (2007) (Jyung, 2007). Also in junior colleges, programs such as the Junior College Specialization and the 2008 Program for Strengthening Educational Capacity of Junior College for Excellent Workforce Development were drawn to innovation vocational education.

When the interest in vocational high schools and junior colleges for reinforcing competitive power of vocational education is heightened and the will to foster and support both schools is increased, it is necessary to examine the current situation and changes in Korean vocational education and to begin a discussion about the future direction of vocational education development. Also, with a synthesized view about vocational education in the secondary and higher education for development of Korean vocational education and with investigate vocational education systems, policies, situations, and so on, we can prospect the way future vocational education should pursue.

## 二、Vocational Education System

Korea has a single-track 6-3-3-4 system which maintains a single line of school levels in order to ensure that every citizen can receive primary, secondary, and tertiary education without discrimination and according to the ability of each student(see Figure 1). Typical education in Korea starts at the age of seven, with six years of primary schooling, followed by three years of lower secondary schooling, and three years of upper secondary schooling. The existing education act was replaced by the Education Basic Act, the Primary and Secondary Education Act, and the Higher Education Act, in 1998. Based on those acts, educational institutions are established at four different levels of education: pre-school education, primary education, secondary education, and higher education. Kindergartens are institutions providing pre-school education; primary schools and civic schools provide primary education. Major institutions providing secondary education are middle (junior high) schools and high schools. However, other types of schools also function as middle and high schools. These middle schools are attached to industrial fir-

ms and other miscellaneous schools at the middle school level. Also, at the high school level, there are such schools as air and correspondence high schools, high schools attached to industrial firms, special classes, trade high schools, and miscellaneous schools (high school level). These schools are not formal schools and are mainly for those who cannot afford to attend formal middle and high schools and, usually, for those who are too old to attend formal schools. Article two of the Higher Education Act also stipulates that the following types of schools shall be established for higher education: universities, industrial universities, teacher's colleges, junior colleges, air & correspondence universities (or Open University), technical colleges, and miscellaneous schools (college and junior college level).

The vocational education system in Korea is divided horizontally with vocational education in regular school system (as known as the formal education system) and vocational training in lifelong education system (as known as the non-formal education system), or divided vertically with the general vocational education at primary and middle schools and the professional vocational education at high schools, junior colleges, and universities (Na, 2001; Jyung et al., 2000).

Vocational education in general is the practical art education at primary schools and technology & home economics education at middle schools. Every student learns both practical art education (fifth and sixth year of primary school) and technical and home economics education (seventh through tenth year of secondary school) as the national common basic subjects (Lee, 2003). These subjects play an important role for prevocational education of high school and college students as general education.

In Korea, vocational education practically starts at high school. In the school education system, it is executed in vocational high school, vocational course in general high school, air & correspondence high school, trade high school, and miscellaneous schools (high school level). In the un-formal education system (lifelong education system), there is vocational training in vocational training institutes under the Ministry of Labor, vocational training centers, private technical institutes, and so on. However, vocational education course in high school does not exist almost at all because of the decreasing competitive rate of university entrance, the lack of recognizing vocation courses and its results, the decrease of student resources, problems of facilities, and insufficient teacher resources. The air & correspondence high schools, trade high schools, and miscellan-

eous schools do not take much part in vocational education of secondary education. Furthermore, vocational training institutes under the Ministry of Labor are just vocational training institutes not included in the regular vocational education system. Therefore, the role of vocational training institutes in the entire vocational education is not performed smoothly. To sum this up, most of vocational education at secondary education in Korea is fulfilled in vocational high schools.

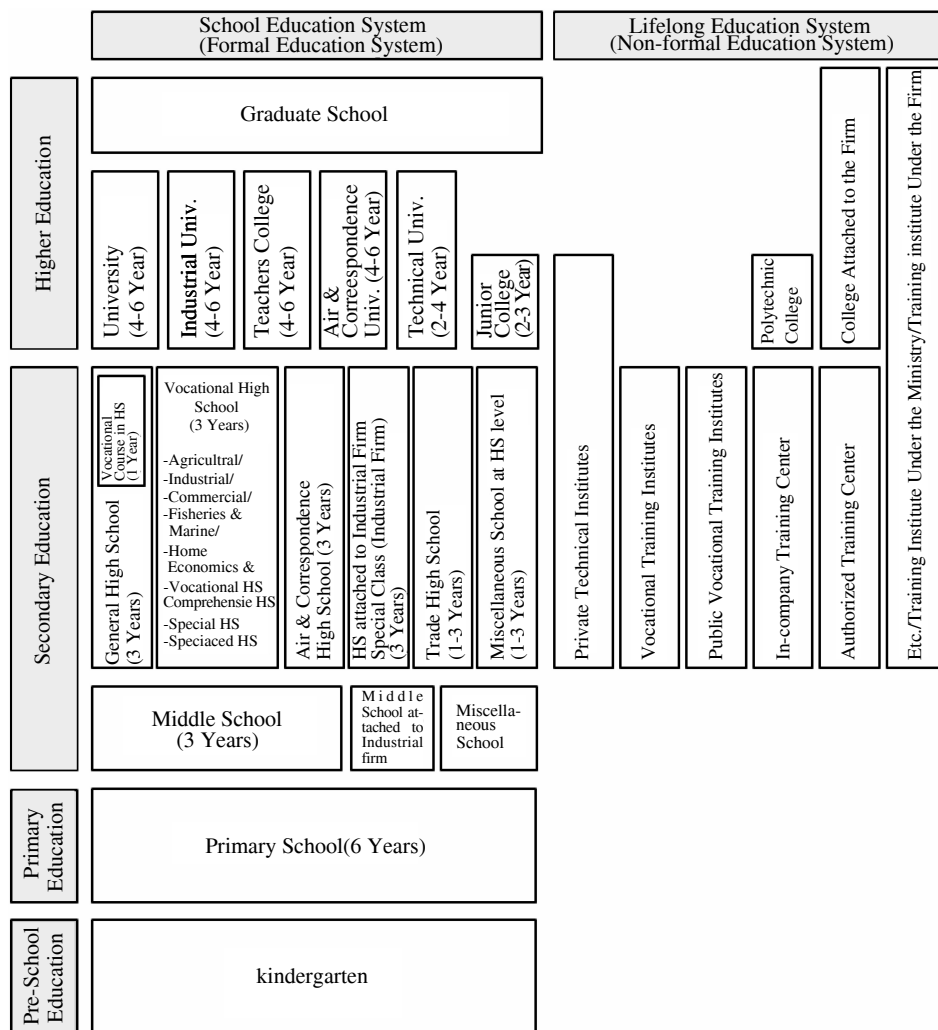


Figure 1 The School Ladder and Vocational Education System in Korea  
Resource: Jyung, Lee, Kim, Na, & Seo (2000: 340).

Vocational education in higher education is accomplished by junior colleges, industrial universities, technical colleges, and air & correspondence universities (Open University). In the un-formal education system, it is accomplished by polytechnic colleges under the Ministry of Labor. Recently, with the expansion of higher education, the increase of demand for the human power of higher education, and the change of the society conditions, four-year universities are in charge of vocational education. Along with it, colleges attached to firms, which are established and administrated by companies, are utilized as higher vocational education institutes by providing the opportunities of continuing education to employees.

In this research, the status and policies of vocational education were examined based on practical art and technology & home economics in the national common basic curriculum as general vocational education, the vocational education in vocational high schools, junior colleges as vocational education in the level of higher education, four-year universities, such as industrial universities, technical colleges, and air & correspondence universities, and real vocational education.

### 三、Vocational Education in the National Common Basic Curriculum

Vocational education in the national common basic curriculum is a connected system of six years consisting of practical arts education in fifth and sixth grade of primary school and technology and home economics in seventh through tenth grade. Practical arts is a part of general education raising information, function, and attitude concerning general agriculture, industrial arts, business, home economics and etc. Practical arts and technology and home economics, which are representatives of practical art education, are the national common core competencies. They are mandatory for both female and male students.

Since 2002, applying the seventh national curriculum, fifth and sixth grade of primary school students should study practical arts for two hours a week. The practical arts subject puts emphasis on: (一) acquiring fundamental life abilities and enhancing adaptabilities, (二) completeness of career education based on values of work, (三) reinforcing computer education for informational societies, (四) strengthening practical environmental education and the rational usage of resources and consumer education, and (五) diversity of curriculum operations (Bang, 2000). Consequently, the content of practical



arts is divided into three categories: understanding family and work, life skills, and, management of life resources and the environment. Precisely, 'simple cooking', 'raising live-stock', 'myself and family life', 'work and the world of jobs', and 'using computer communication' are dealt (Bang, 2000).

Technology & home economics was introduced as 'technology education curriculum' and 'home economics education curriculum' by the fifth national curriculum in 1987, because of the necessity of acquiring knowledge and functions of managing work and family life for both female and male. Technology & home economics, which having been in force since 2001 under the seventh national curriculum, integrates 'technology education curriculum' and 'home economics' and let both female and male students from the first year in middle school(seventh grade) to first year of high school(tenth grade) complete as a common basic subject (Choi & Jang, 2005; Ihm, 1997). It emphasizes: (一) integrating technology & industry subjects and home economics subjects as a national common basic subject, (二) systemizing subject fields and contents, (三) complementing the appropriateness of content composition, (四) emphasizing action learning with experiences, and (五) reinforcing contents of computer education (Kim, Lee, Lee, Kim, & Leem, 2005). Consequently, the content of technology & home economics is divided into three categories: 'understanding family and work', 'life skills,' and, 'management of life resources and the environment.' Precisely, 'understanding myself and family', 'making garments', 'handling electronics', 'computer and data processing', 'resource management and the environment', and so on (Lee & Kim, 2001).

#### 四、Vocational Education in Vocational High Schools

##### (一) Schools and Departments

The ratio of vocational high schools to all high schools in the Republic of Korea was 54.1% (481 schools), in 1970. However, the ratio keeps declining; 44.7% (605 schools) in 1980 and 34.9% (587 schools) in 1990. As shown in Table 1, the ratio has decreased to 31.8% (697 schools). By the types of vocational high schools, there were 209 industrial high schools (30.0%), which had the highest percentage, followed 193 commercial high schools (27.7%). There were 191 comprehensive high schools (27.4%), 69 home economics and vocational high schools (9.9%), 28 agricultural high schools (4.0%), and seven fisheries and marine high schools (1.0%).

Table 1 The Number of Vocational High Schools by School Types Unit: School, %

Total High School (A)	Vocational High Schools(VHS)							Ratio of VHS (B/A)
	Total VHS(B)	Agricultural HS	Industrial HS	Commercial HS	Fisheries & Marine HS	Home economics & Vocational HS	Comprehensive HS	
2,190	697 (100.0)	28 (4.0)	209 (30.0)	193 (27.7)	7 (1.0)	69 (9.9)	191 (27.4)	31.8

Resource: Center for Education Statistics (2008).

There are various departments in accordance with types of vocational high schools. At agricultural high schools, there are about 50 departments such as 'Plant Resources', 'Animal Resources', 'Agricultural Management', 'Agricultural Civil Engineering', 'Food Processing', 'Agricultural Machinery', 'Landscaping', 'Agricultural Products Distribution', 'Environmental Preservation', and others. Most agricultural high schools are public schools. At industrial high schools, there are around 150 departments like 'Mechanical Engineering', 'Mechatronics', 'Metallurgy', 'Mine Resources', 'Electrical Engineering', 'Electronic Engineering', 'Communication Engineering', 'Computer Science', 'Civil Engineering', 'Architecture', 'Industrial Design', 'Chemical Engineering', 'Ceramics', 'Food Industries', 'Textiles', 'Printing', 'Automobiles', 'Ship-building Engineering', 'Aeronautical Engineering', 'Environmental Industry', and others. Around 60% of industrial high schools are public schools. At commercial high schools, there are around 100 departments as the following: 'Management Information', 'Accounting Information', 'Trade Information', 'Information Processing', 'Visual Design', 'Tourism Management', 'Secretarial Science', 'Office Automation', 'Circulation Management', and others. About 60% of commercial high schools are private schools. At fisheries & marine high schools, there are approximately 20 departments like 'Fisheries', 'Fishery Cultivation', 'Self-Managing Fisheries', 'Seafood Science', 'Seafood Circulation', 'Ocean Environment', 'Refrigeration Machines', 'Power Mechanical Engineering', 'Ocean Civil Engineering', 'Navigation', 'Ship Operations', 'Telecommunications', and others. Departments of home economics and vocational high schools are 'Cooking', 'Clothing and Design', 'Embroidery', 'Interior Design', 'Childhood Education', 'Tourism', 'Welfare of the Aged & Nursing', 'Beauty Art', and so on.

## (二) Students

In 1970, 46.6% (275,015 students) of the whole population of high school in Korea were vocational high school students, but this percentage has declined continuously with 45.0% (764,000 students) in 1980 and 35.5% (810,651 students) in 1990. In 2008, only 25.6% (487,492 students) were vocational students (Center for Educational Statistics, 2008). According to school types, industrial high schools were ranked the highest with 37.7% (186,096 students), business high schools 33.0% (162,968 students), comprehensive high schools 18.2% (89,956 students), home economics & vocational high schools 7.5% (37,191 students), agricultural high schools 2.8% (13,737 students), fishery & marine high schools 0.8% (4,043 students). Based statistics from 2008, another change occurring in vocational high schools is the maladjustment and decline of students' will to learn. In 2000, the percentage of high school dropout was at 1.24%, but, in vocational high schools, the dropout rate was recorded as 4.31%, exceeding a threefold of general high schools. Also, in 2008, regular high school dropouts and vocational high school dropouts were each at 1.09% and 3.58%, showing that the dropout rate in vocational high schools was more than three times higher than high schools, as proof of maladjustment of the former (Center for Education Statistics, 2008) (See Table 2).

Table 2 Dropouts of High School Students

Unit: Student, %

Year	General High School(GHS)			Vocational High School(VHS)		
	Total GHS Student	Dropouts	Dropout Rate (%)	Total VHS Student	Dropouts	Dropout Rate (%)
2000	1,342,482	16,520	1.24	746,986	32,188	4.31
2005	1,259,792	9,427	0.75	503,104	14,610	2.90
2008	1,419,486	15,477	1.09	487,492	17,466	3.58

Resource: Center for Education Statistics (2008).

Table 3 shows the advancement and employment trends of graduates from vocational high schools. The numbers of graduates from vocational high schools who attend universities keep increasing, while the number of graduates who look for jobs is decreasing. Among graduates of vocational high schools since 1990, 8.3% (22,710 students) have attended universities and 76.6% (210,113 students) have found jobs. After 1990,

the ratio of students who attend universities has increased. Therefore, the percentage of employment and entering school is reversed. The ratio of attending school is 72.9% (115,407 students), and the ratio of employment is a very low 19.0% (30,036 students). This means that vocational high schools focus more on vocational education for continuing education former (Center for Education Statistics, 2008).

Table 3 Advancement and Employment Trends of Graduate Students in VHSs

Unit: Student, %

Year	Total Graduates	Entering Higher Education		Employment	
		Advancement	Rate (%)	Employment	Rate (%)
1990	274,150	22,710	8.3	210,113	76.6
2000	291,047	122,170	41.9	149,543	51.4
2008	158,408	115,407	72.9	30,036	19.0

Resource: Center for Education Statistics (2008).

### (三) Teachers

In Korea, the training system for vocational high school teachers is characterized as a combination of an 'objective system' of educational departments and an 'open system' by taking pre-service teacher education programs. In 2000, vocational high school teachers were trained at 1,389 different departments, summing it up to 16,599 people, and, distinctive to the general subject teacher training system, most of the personnel were from the pre-service teacher education programs rather than educational departments (Jyung, 2000).

The number of teachers in vocational high schools has been continuously declining along with the decrease of the number of vocational high schools and attending students. The number of teachers was 40,977 in 2000, but decreased to 36,406 in 2008. In 2002, there were more male teachers, being 68.8% (28,202 teachers), than female teachers, being 31.2% (12,775 teachers). In 2008, the ratio of female teachers to male teachers increased; 61.0% were male (22,211 teachers) and 39.0% were female (14,195 teachers) (Center for Education Statistics, 2008; Kang, 2008).

Of the whole population of all high school teachers, 30.4% were vocational high

school teachers (36,549 teachers), and, at a higher rank than them, 37.8% (13,829 teachers) were vocational high school teachers. Business high school teachers were 30.6% (11,190 teachers), comprehensive high school teachers 19.1% (6,963 teachers), home economics & vocational high school teachers 8.3% (3,030 teachers), agricultural high school teachers 3.3% (201 teachers), and fisheries & marine high school teachers were the remaining 0.9% (336 teachers). Also, the percentage of teachers who took charge of general subjects and teachers in charge of special subjects were each at 55.5% and 44.5%. Considering that vocational high school students have low sufficiency in learning, the importance of general subject teachers is as high as special subject teachers (Jyung, 2007).

#### **(四) Curriculum and Subjects**

The seventh revised curriculum was notified on December 30, 1997, 5 years after the announcement of the sixth revision. The most salient characteristic of the seventh curriculum was that it was constructed in the frame work developed and established by the 'Presidential Commission of the Education Reform'. The basic direction of the Education Reform was to affect a change from 'the closed educational system' to 'the open system' and from 'the producer-centered educational system' to 'the consumer-centered one' (Huh, 2007).

At present, the 7th revised curriculum was partially changed and notified as the '2007 New Curriculum' on February 28, 2007. Basic characteristics of the new curriculum are the same as the 7th curriculum, but some minor changes were made. The changes are the following: First, one instructional period per week was removed from the school week for all school levels; second, the number of instructional periods of History and Science was increased by one per week for the 10th grade; third, a distinction between 'General elective subjects' and 'Intensive elective subjects' was made for the 2nd and 3rd grades of high school; and lastly some subject names were changed, along with the lower level of structure (Huh, 2007).

The goals high school education is helping students to acquire abilities essential for progressing into their chosen career paths, developing the qualifications as a world citizen, and successfully completing the basis of middle school education. The purported objectives are the followings: First is to help students develop a well-harmonized char-

acter along with a sound body, mind, and a mature sense of self-identity; second is to help students develop the abilities and attitudes of logical, critical, and creative thinking required for academic pursuits and daily life; third is to enable the students to attain knowledge and skills in diverse fields so that they will be able to carve out a career in accordance with their aptitudes and interests; fourth is to encourage students to develop our traditions and culture in an appropriate way for the global setting; fifth is to help students endeavoring to build and develop the national community and to develop the awareness and attitude of global citizens. Particularly, vocational high schools aim at providing advanced general education as well as vocational education in the fields of agriculture, technology, commerce, and fishery-maritime.

In the 7th national curriculum, the Korean high school educational curriculum prescribed students to take 216 units in whole. Students in their first year of high school take subject matters (56 units), optional activities (12 units), and extracurricular activities (4 units) as 'national common basic curriculum'. General subjects of the national common basic subjects are the Korean language, moral education, social studies, mathematics, science, practical arts (technology & home economics), physical education, music, fine arts, and foreign language (English). However, subject matters for grades one and two are integrated in the Korean language, mathematics, disciplined life, intelligent life, and more. Optional activities are divided into subject matter optional activities and creative optional activities. Extracurricular activities comprise student government activities, adaptive activities, self-development activities, community service activities, and event activities (Kang, 2007).

On the other hand, second and third year students take general subjects (more than 26 units), specialized subjects (more than 82 units), and extracurricular activities (8units) as an 'elective-centered curriculum'. General academic subjects consist of the Korean language, moral education, social studies, mathematics, science, technology & home economics, physical education, music, fine arts, foreign languages, Chinese characters and classics, military training, and free electives. Also, specialized vocational subjects include courses of study in the areas of agriculture, industry, commerce, fishery & marine transportation, home economics & vocational education, science, physical education, arts, foreign languages, and international affairs (Kang, 2007; Song, 2004).

The mandatory subjects in each school types of vocational high schools are: 1.

Understanding Agriculture, Fundamental Techniques of Agriculture, Management of Agricultural Information in agricultural high schools, 2.Introduction to Manufacturing, Basic Drawing, Basic Information on Technologies in industrial high schools, 3.Business Economy, Principles of Accounting, and General Computing in commerce high schools, 4.General Marine, Information Processing in Marine Transportation, Introduction to Fisheries (for fisheries high schools), General Marine Affairs (for marine high schools) in fisheries & marine high schools, 5.Human Development, and General Computing in home economics & vocational high schools. The rest are designated by superintendent of municipal and provincial offices of education (Na, Lee, Han, Ma, & Kim, 2003).

### (五) Policy

As the change in industrial structure has made the function of vocational education change from terminal education to continuing education, policies concerning vocational education in Korea have changed as well. Especially, ever since the mid-1990s, specific plans for vocational education have been presented, and today, the focus is on building a vocational educational system in the society of continuing education. Before the mid-1990s, the vocational education in Korea was focused on training skilled personnel for industries in the form of terminal education. This trend has shifted to the form of continuing education ever since the 1996 plan to construct a new vocational education system (Presidential Committee of Education Reform, 1996).

The expanded opportunities in entering universities have made this highlight the continuing educational function in this plan as well as emphasizing the idea of continuing education of jobs and strengthening the acquirement of basic job skills (Lee & Lee, 2005; Ministry of Education, 2000; Song, Min, & Sung, 2009). It based on the idea of recognizing the need that the central axis of vocational education should move from secondary level to graduate level. In order to achieve this, the government suggested that junior colleges, technical colleges, and open universities be reformed and operate the liaison education.

The vocational training system we have now has been definitively formed by the Reforming the Vocational Training System (2005), published by the Presidential Committee of Educational Reform. It suggests three ways to reform the secondary level of the

vocational training system. First, all high schools must help students get ready for their careers in accordance with their capacities and interests. Second, quantitative schools should take action autonomously in order to response actively to the demands of students and industrial sectors. Third, all teachers and staff members should be trained their perspectives and abilities for the students' future careers and jobs. To some extent, in order to support and activate the three suggestions, the 2007 Strategic Plan for Cultivating Vocational High School for Realization of Hope by Ministry of Education & Human Resource Development has emerged. The objectives of the 2007 strategic plan was to expand specialized vocational high schools by government, local government, or industry; to provide students with more flexible career paths; to provide various opportunities for lifelong learning; to innovate school curriculum to respond to industry's needs (Ministry of Education and Human Resource Development, 2007). Also, the 2008 Plan to Cultivate the Korean Meister High School by Ministry of Education, Science and Technology has executed. The 2008 Plan is to develop competitive vocational high schools through transferring the existing ones into the Meister high schools. The ultimate goal of the Meister high schools is to produce a 'Young Meister' who has skilled competencies and it will be provided admission to higher education through the new 'exceptional entrance program' for those who have worked after graduation of Meister high schools (Ministry of Education, Science, and Technology, 2008a, 2008b).

There are many high schools that operate for the special purpose among vocational high schools as a special high school, specialized vocational high schools, Korea Meister high school, etc. Special high schools were built for the purpose of professional education at special areas. They were composed of special high schools for the gifted or talented students and special high schools for vocational education area. Special high schools for vocational education were vocational high schools purposed to bring up labor power who engaged to national basic industries, for example machinery, electrics, electronics, agriculture, fishery, marine, and so on. In March 2007, there used to be 40 special vocational high schools. There were 22 industrial high schools, ten agricultural high schools, five fishery high schools, and three marine high schools.

Specialized vocational high school is the schools educate students who have aptitude and interest in specific fields and decide their courses early in order to make raise those specialists of their fields and give them a basic professional education autonomo-



usly. In 2008, a total of 171 specialized vocational high schools, starting with Pusan Design High School in March 1998, have been established and are managed. This is 24.4 % of all the vocational high schools, and the number will be increased because of the government's policy of the expending specialized high schools (Kang, 2008; Jyung, 2007; Na et al., 2007).

Meister high schools are vocational high schools that are connected to demands in specialized industries of promising fields and train students into 'Young Meister'. They allow graduates to get a job and acquire a degree at the same time (Ministry of Education, Science and Technology, 2008a). In 2008, nine schools were designated as a 'Meister High School', and 21 schools are expected to be opened in 2010. In the future, Meister high schools are planned to increase to 50 schools and become the role model of job-centered vocational high schools.

#### **(六) School-Industry Partnerships**

The definition of 'school-industry partnership' is a cooperative relationship where the industrial sector and the academic sector exchange human, material, and available resources for education and research in order to achieve the long-term development of society and nation. For schools, school-industry partnership is required to solve the issues raised by the limited amount of facilities and human resources, and to gain financial sources for practical training and research facilities. For industries, school-industry partnership is also needed to secure human resources that are prepared for practical fields by training potential employers (Kim, 2005; Lee, 2003).

School-industry partnership at the vocational high school level is being practiced in various forms like field trips, practical experiences, internships, school-based enterprises, customized training education, specially designed training programs, cognitive major programs, and many other forms.

#### **(七) Financial Support**

Korean vocational high schools received 97,200,000,000 KRW (equivalent to around 2,561,000,000 TWD) in 1998, but the amount has continuously decreased to 48,800,000,000 KRW (equivalent to around 1,286,000,000 TWD) in 2004. Since 2005, each local education departments each received different amounts of financial support at

different rates, as the federal government's financial support to vocational high schools has been transferred to local education departments.

Also, financial resources are provided by other government departments other than the Ministry of Education, Science, and Technology. The ad-hoc through different government departments are disable to support financial resources to vocational high schools to be continuous or constant (Na, 2006).

## 五、Vocational Education in Junior Colleges

### (一) Junior Colleges

High school graduates and those with an equivalent academic background may enter junior colleges. Entering junior college has been determined on the basis of school achievement, scholastic achievement test, interview, and aptitude tests. Between 50 and 60 % of the freshmen quota is reserved for the graduates of vocational high schools, craftsmen qualified by National Certification System and workers meeting a specified amount of industrial experience (Jung, Gu, Kang, Jyung, Soon, Kim, & Kim, 1998; Lee, 2004).

Junior colleges take 45.0% (158 colleges), which is half of all Korean higher education institutions, but it has continuously decreased to 40.3% (147 colleges) (Center for Education Statistics, 2008). This phenomenon has happened because of the restructuring of junior colleges due to a decrease in the number of new students, which has been caused by a decrease in academic population and preferences toward four-year universities, and it is very likely to continue in the foreseeable future.

There are ten public junior colleges (two national colleges and eight public colleges), which are 6.8% of the whole. On the other hand, there are 137 private schools (93.2%), which is the majority of the whole. This increases the chances for junior colleges to close when they have failed to gain enough student sources, as the number of student sources of junior colleges is already decreasing (Center for Education Statistics, 2008; Ha, 2002).

From a local perspective, having the most junior colleges, Gyung-gi province has 35 junior colleges, and Gyung-sang province follows up by 17. However, the number of junior colleges in local provinces is expected to decrease at higher ratios, as it is already decreasing as a whole. It is because of the mixture of the two reasons: 1. the decrease in

student sources and 2. the preferences toward universities in the capital area. It is anticipated that the lack of enough student sources in local junior colleges will be worse.

## (二) Students

In Korea, the number of students in junior colleges has decreased from 29.2% of the whole higher educational institute population (913,273 students) in 2000 to 23.7% (771,854 students) in 2008. This indicates that the decrease of the number of junior colleges and the attending students is continuing (Center for Education Statistics, 2008).

As shown in Table 4, the number of entering students by fields in junior colleges were 27.8% (64,963 students), 27.8% (64,963 students) for Social Sciences, Engineering 24.8% (57,999 students), Arts and Physical Sciences 19.9% (46,457 students), Medical & Pharmacology 10.8 % (25,225 students), Natural Sciences 7.5% (17,600 students), Education 4.8% (11,266 students), and Humanities 4.4% (10,219 students), in 2008.

Table 4 The Number of Entrants by Fields of study in Junior Colleges Unit: Student, %

Field	Humanities	Social Sciences	Education	Engineering	Natural Sciences	Medical & Pharmacology	Arts & Physical Sciences	Total
Students	10,219	64,963	11,266	57,999	17,600	25,225	46,457	2
Rate (%)	4.4	27.8	4.8	24.8	7.5	10.8	19.9	100

Resource: Center for Education Statistics (2008).

The employment rate of junior colleges in 2005 were approximately 80.4%, and by fields, Fisheries and Marines was ranked top with 85.3%, Health at 82.2%, Engineering at 81.6 %, Humanities & Social Sciences 81.1%, Physical Sciences 79.9%, and Nursing 79.3%. On the other hand, the enrollment ratio consisted of approximately 5.96% of the graduates, and by fields, Engineering had 5,448 students, Humanities & Social Sciences 3,504 students, and Arts 1,090 students (Korean Council for College Education, 2005).

## (三) Teachers

There were 11,898 professors and teaching staff of junior colleges, in 2005. The percentage of permanent professors was 45.1% of the limited number of professors. Public junior colleges indicate the ratio of permanent professors as 59.7% and private pro-

fessors as 44.5%. Thus, it has shown that the ratio of permanent professors in public junior colleges is higher than professors in private junior colleges.

The ratio of hiring professors to the number limit, including temporary and guest professors, is 74.4% of the whole. Public junior colleges indicated the higher ratios, 77.9%, than private ones with 74.3%. It has been investigated that there are 29,894 non-permanent professors (7,135 temporary professors, 589 guest professors, and 22,170 part-time lecturers). It has been found that junior colleges are highly dependent on part-time lecturers, as they take up 74.2% of all professors.

#### **(四) Curriculum and Management**

Specialized courses of the junior college 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 (Korea Research Institute for Vocational Education and Training, 1999; Lee, 2004).

Education curriculum of junior colleges are consisted of 'general subjects' and minimum 'occupational subjects,' which are necessary for professional technicians, and grades are granted based on each college rules according to a Higher Education Act and it implementing ordinances (Higher Education Act, 2009). In accordance with this, minimum hours to complete each course, maximum grades in each semester, and minimum credits to finish degrees are decided by each college rules, and each one runs the education curriculum in different ways. Because of this, planning and running education curriculums mostly rely on resources gained through experiences due to the lack of enough understandings among teaching staff.

Whole departments in junior colleges have been increased from 1,076, in 1985, to 3,754, in 2006. It is because of the changes in industrial structures and professional fields, and an increase in the number of colleges. In terms of academic departments, in 2006, there were 1,144 majors in the engineering department, 311 in the science department, 564 in the nursing department, 59 in the arts department, 944 in the social department, 190 in the educational department, and 542 in the fine arts and physical depart-

ment. Thus, most of the major courses are focused on engineering, social, and nursing departments.

Changes in major courses have taken places in different forms. For example, majors related to commerce have tendencies to divide majors into 3 categories: service management, business management, and digital marketing. On the other hand, child care and social welfare majors have been put together as a children social welfare major. Also, new major courses, such as cultural heritages major, museums major, and ocean shipping system major, have emerged. It reveals that new major courses have been created, which could not have been seen previously as colleges are more specialized and diversified.

### (五) Policies

In Korea, according to Article 47 of Higher Education Law, the educational goal of college is 'to produce mid-level technicians who can devote themselves to national development through teaching and researching technical knowledge in every field of society. The functions of colleges in Korea are summarized as follows: to contribute to national development by producing leading technicians needed by industries, to realize the idea of life-long education through a variety of short-term adult education; to allow workers to have opportunities for retraining; and to popularize higher education (Korean Council for College Education, 2007).

Policies on vocational education and system of junior colleges were practiced at the start of the 2000s through Plans on General Development of Junior Colleges (2001) published by the Education Department. There are five detailed suggestions in this policy (Korea Council for College Education, 2007): 1. reformation through assessments on financial supports, 2. putting restrictions on junior colleges to transform into four-year universities, 3. autonomous management of related education courses, 4. flexibility in educational years (3 years), and 5. applying multiple semester system and practical experience semester system.

On the other hand, today's policies on vocational education in junior colleges can be understood by what has been suggested by Plans to Reform the Vocational Education System (2005) published by the Presidential Committee of Educational Reform. There are five specific ways to practice this: expanding purposes of junior colleges, technological colleges, and other colleges to function as local community centre for the continu-

ation of social education, obtaining support systems of junior colleges led by local governments, facilitating cooperative courses between vocational high schools, junior colleges, and industries, establishing 'industrial technological education clusters', consisting of universities, research centers, junior colleges and vocational high schools, and specialization of junior colleges and universities through the government participation (Lee, Kang, Jang, & Kim, 2005; Yoon, Lee, Baek, Park, & Choi, 2005).

The purpose of junior colleges is to train and supply professional technicians demanded by different industrial fields in the potentially highly industrialized society as higher education institutions for a short-term vocational education. There are several practical policies taken to achieve this purpose; expanding both short and long term vocational courses for adult learners and workers, reforming to meet various demands by industries, facilitating education courses to response to rapidly changing professional fields elastically and providing expert knowledge and practical experiences in related areas to teaching staff (Lee, Kim, Yoon, & Goo, 2008). Especially, the recent initiative on financial supports to junior colleges and the Initiative on Strengthening Educational Abilities to Train Highly Skilled Labor (2008) were practiced to increase capacities to produce highly qualified skilled labor.

#### (六) School-Industry Partnership

The effectiveness of school-industry partnership can be maximized when there is equilibrium between needs of colleges and industries. However, in the real world, colleges are more desperate to demand the partnership than industries do. It is because of a drop in the number of student sources, rapidly changing technologies, obtaining financial sources including research, and career development for graduates (Ha, 2002; Kang, Kim, Lee, & Lee, 2005).

The purpose of school-industry partnership for colleges is education and research development and gaining more student sources, but it is also meaningful for industries, not only as education and research development, but as knowledge management and knowledge networks (see Table 5).

Table 5 Types of School-Industry Partnership for Junior Colleges

Types	Contents	Etc.
Education & Training	1. Industrial site training and field trip. 2. Specialized education for each major. 3. Industrial consignment education in junior college, customized education, advanced course, etc..	—
Research	1. Consortium of industry, school, and research institutes. 2. Researches from industries.	Small and Medium Business Administration (SMBA)
Technology development and support	1. Business of technology training university (TRITAS). 2. Business of technology innovation development. 3. Business to support development of industrial design.	Small and Medium Business Administration (SMBA)
Others	1. Participate in Techno Park. 2. Participate in local industries. 3. Lab ventures in school-enterprises.	—

Resource: Kim & Kim (2002).

### (七) Financial Support

The budget for junior colleges was 148.7 billion KRW (equivalent to around 3,926,000,000 TWD) in 1997, consisting of 39.5% of the whole. Ever since, the budget for junior colleges has continuously increased, and the proportion among the whole job education budget has also increased. It became 187.1 billion KRW (equivalent to around 4,939,000,000 TWD) in 2000 (61.7%). This indicates that the job education budget support has been biased.

Also, when we look at the change of support to the junior colleges, it has gradually increased from 166.4 billion KRW (equivalent to around 4,393,000,000 TWD) in 2000 to 180.5 billion KRW (equivalent to around 4,765,000,000 TWD) in 2002 to a peak, and slightly decreased to 175.0 billion KRW (equivalent to around 4,620,000,000 TWD) in 2004. This indicates that, as the axis of job education has shifted from the secondary level of vocational high schools to the higher level junior colleges, the budget support toward junior colleges have increased correspondingly (Korean Council for College Education, 2007).

## 六、Vocational Education in Universities

In Korea, higher education developed under the influence of government policies,

unlike the American or European universities that developed on the basis of autonomy. Therefore it is necessary to put an emphasis on what initiatives the government displayed in the development of higher education.

The vocational education in four-year universities has traditionally been done by industrial universities, technical universities, open universities, and others. In a broad sense, universities can be thought to be a job educating institute in that they emphasize the employment education and industry-university collaboration (Lee, 2004). The learners' characteristics and needs in universities may be very diverse, and, to suffice these needs, universities should become specialized and diversified.

A major example of these universities is the transition to the so-called 'research-based universities' or 'education-based universities'. The education-based universities here mostly mean a university that focuses on vocational training for students to become professional personnel. Therefore, as the function and role of each department in four-year universities are specialized, the vocational training factor becomes more and more emphasized. The universities that stand for practice based education can be thought of as the major examples.

On the other hand, the needs of innovation of vocational training in four years universities cannot be neglected. Internally, we are facing the problem of the lack of entering students in rural universities due to the change of population structure, and, externally, all universities are facing the challenge of having to improve the quality of higher education to develop competitive power. Industrial universities are having budget problems due to the lack of government support, the decrease of entering students, and the gathering of new students is not easy, due to the low social appreciation of job training and ranking between universities.

In the economical and social structure that requires continuing education, universities are also required to change so that they can function in continuing education as well. As long as government policies are understood that vocational training does not relate to general universities and are low-rank material and merely a program for the acquirement of special skills for some alienated classes' employment, the future of higher education is not bright. We must try to understand the reason why, in developed countries, vocational training is upgraded to the level of research-based universities, moreover why they are trying to relate the courses to Master's and Doctoral degrees, and why they spare no



money on the higher level vocational training.

## 七、Major Challenges for Development of Vocational Education

In conclusion, Korean vocational education has attributed to the rapid economic development since the 1960s and continued up to now: however, the vocational education in Korea has been challenged in terms of the vocational education system, national common basic curriculum, vocational high schools, junior colleges, and four-year universities. Based on the status of Korean vocational education, seven recommendations were suggested to improve the quality as follows:

First, a systematic vocational education that matches the temperament and aptitude of students should be accomplished by specialization of vocational high schools. The 'skill mismatch' problem in terms of an imbalance between supply and demand of labor by industrial enterprise causes, not only that pay huge cost for retraining their new employees, but also to maintain a high unemployment of the younger generation. Specialization of vocational high schools has started to give attention in order to solve the problem. The specialization can solve a problem which the government invests not enough in a curriculum and vocation high schools that do not suit a broken path of vocational education and demand, and offer systematic vocational education which enhances the makings and aptitude of students.

Second, vocational education for occupational ability development that focuses on career courses and actual works should be performed. Until now, vocation education has paid attention to teach only personal ability and skills with a short term point of view. As a result, there were many cases to educate students, regardless of students' career courses and their future job, and the phenomenon made students lose their interest in school education and bring out disbelief in vocational education institutions. Therefore, each student should try to find his or her career course and help vocational ability development process that is focused on their career to be accomplished.

Third, cooperative network among regional colleges, industrial enterprises, parents, and the community should be built in order to achieve development of vocational education. Modern times, vocational education is related to people of diverse type, because it aims every person who wants to improve his or her work ability, not limited people. As a result, to achieve efficient vocational education related to whole social system,

it is needed to construct a network which is able to connect diverse people, such as vocational education institutions including higher ranked institutions and the other, regional enterprises, communities, and parents of students.

Fourth, vocational education must be accomplished that is able to make schools connected with others and guarantee a chance of vertical rise between levels of work ability. Personal work ability can be classified into skilled worker, technician, professional (engineer), and scientist (technologist). Also, the education level for each ability classified into vocational high schools, junior colleges, universities, and beyond, respectively. Levels between work abilities guarantee the vertical rise. However, each education level does not have the same system which is related to the others. Therefore, in the education level of high schools, institutions have to stop training low quality workers and, although they train students as present workers, teach students to have principles to be able to grow to sophisticated workers in the future.

Fifth, work-based vocational education should be emphasized through revitalizations of industrial school-enterprise cooperation between the vocational education institutions and the industrial enterprises. Vocational education should be intimate with actual work places, so the education can try to operate diverse field-closed education. Especially, in order to get a job right after learning actual business practice, the cooperation is needed first. This means that vocational education should be based on cooperation, and education must be closer to industrial enterprise than how close it is now. It can be activated by many ways, such as a development of regional industrial enterprise-school cooperation, changing perception to participate more than usual, offering incentive for participations of industrial enterprises and vocational education institutions, and evaluating effects of the cooperation.

Sixth, it should be accomplished that developing curriculum and its management based on demand of each field of industries. Vocational education institutions, such as vocational high schools and junior colleges, are needed to develop diverse curriculums that can be used to improve students' abilities as field-workers, and they have to manage it wholly. In order to achieve this, it is necessary to offer, not only a special degree, but also diverse types of high-rank related programs. Linking between vocational education and qualification systems, we can gain substance of curriculum and must offer a chance to get qualification. Especially, development and management of new curriculum, which

is applied needs from an actual industrial field, can be developed into a made-to-order curriculum or industrial enterprise-trust curriculum. The gap between education and field work can be reduced by effort.

Seventh, a change to a paradigm is necessary to secure flexibility and diversity to prepare lifelong education. In the 21st century, demand of lifelong education in higher education is increasing, and this means that importance of interaction between work and education in a life will increase. Therefore, vocational education in a high school level must concentrate in making a foundation for continuous lifelong education. In a higher level of vocational education, the education should get accomplished to help learners improve their abilities continuously and study what they need, so that the learners can acquire creative and flexible knowledge and skills.

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