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## ABSTRACT

In the Republic of Korea, technical and vocational education (TVE) programs in the formal education system are provided at senior secondary schools and postsecondary institutions (junior colleges). Out-of-school vocational training is provided as nonformal education. Since the early 1960s, the TVE system has been restructured in response to industrial demands. Many new vocational training institutes have been established; the government has also mandated private in-plant training. In the 1990s, the economy is facing new challenges posed by the changing economic environment, including globalization of trade and labor markets, rapid advancement of new technologies, and more competition. The government has introduced various measures to strengthen the vocational education and training system to prepare the necessary skilled manpower to meet changing industrial demands while reducing pressure on higher education. The trends of globalization of trade and labor markets, rapidly changing technologies, and mass unemployment resulting from the recent economic crisis are expected to continue in the twenty-first century and will foster rapidly paced changes in future industrial structures and employment patterns. Measures and policy recommendations to be considered are core competencies; integration of the senior secondary school curriculum; lifelong education; school-to-work transition system; and enterprise training. (YLB)

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# Reform and Innovation of Technical and Vocational Education in the Republic of Korea

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The strong performance of the economy in the Republic of Korea during the last thirty years has been well publicized. Technical and vocational education played a pivotal role in this rapid industrialization process. The government successfully restructured the vocational education and training system to meet the changing industrial demands. However, the country now faces new challenges posed by the changing global economic environment. In order to sustain its competitiveness, the Republic of Korea must now take active measures to reform its technical and vocational education programmes.

This paper examines the restructuring of technical and vocational education in the Republic of Korea to provide industrial manpower during the process of economic development. Firstly, the current system of vocational education and training will be described. Secondly, how the system has been restructured in response to meet industrial demands will be reviewed. And finally, it will list the challenges that the Republic of Korea will face in the twenty-first century and some policy recommendations will be made that may be considered in order to respond to the emerging challenges.

## THE CURRENT SYSTEM OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

In the Republic of Korea, technical and vocational education programmes within the formal education system are provided at both senior secondary schools and post-secondary institutions (junior colleges). Out-of-school vocational training is provided as non-formal education.

*Vocational senior secondary schools* provide three-year programmes, preceded by six years of primary education and three years of junior secondary education. The programmes can be divided into six categories: agricultural, technical, commercial, marine and fisheries, vocational and comprehensive. The duration of field training varies, ranging from one to six months in agricultural and commercial schools, one to twelve months in technical schools and from three to twelve months in fishery and marine schools. Vocational senior secondary schools are the major institutions for training the craftsmen and skilled manpower in the Republic of Korea. In 1997 there were 771 technical and vocational senior secondary schools with a total enrollment of 960,037, which accounted for about 40 per cent of the total senior secondary school enrollment.

*Junior vocational colleges* provide two-year post-secondary programmes, with the exception of the marine and fisheries, and nursing courses which last two-and-a-half years and three years respectively. The purpose of junior college education is to produce middle-level technicians equipped with a solid base of theoretical knowledge and practical skills to meet the increasing demand for technical manpower following rapid industrialization. Specialized programmes are grouped into technical, agricultural, nursing, fisheries, health, commercial and business, home economics and so on. In 1997 there were 155 junior colleges with an enrollment of 724,741, about

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28 percent of the total higher education enrollment.

*Non-formal vocational training* comprises public and private training. Public vocational training is undertaken by the Korea Manpower Agency (KOMA) under the Ministry of Labour and local governments. It aims to train semi-skilled and skilled workers through programmes lasting from three months to two years. KOMA manages institutes concerned with a broad range of occupations, while local governments concentrate on training in trades necessary for increasing the income of farm households.

Private vocational training is conducted by enterprises and corporations. Enterprises are required to pay employment insurance fees, the latter depending on the number of employees. The fees paid by the enterprises are pooled into a central fund, known as *employment insurance funds*, that are used to finance the vocational competency development programmes. The vocational competency development scheme, which came into effect in January 1999, replaced the compulsory training levy system. Private training is also carried out by corporations authorized by the Ministry of Labour.

The duration of vocational training programmes vary, ranging from short-term (hours, days, weeks) to long-term (six months to two years). The vocational training courses are divided into 'basic training', 'upgrade training', 'job transfer training', and 'retraining,' according to the objective of the training. The programmes are provided in 477 fields covering 23 technical areas. In 1997, 477 training institutes (96 public and 381 private) provided training for 302,646 trainees.

## **RESTRUCTURING OF THE TECHNICAL AND VOCATIONAL EDUCATION SYSTEM**

In the early 1960s, the Republic of Korea was a typical labour-surplus economy with a modest endowment of natural resources and a small domestic market. The government established a vast economic development plan and restructured the vocational education and training system in order to supply the manpower necessary to implement the plan. As a result, most of the formal technical and vocational education was provided within the state education system, and was systematically planned and standardized. The government rapidly expanded enrolment in vocational schools in the 1960s. However, the formal vocational schools were not able to prepare sufficient technical manpower for the rapidly industrializing country. In order to train enough workers to meet the increasing industrial demands, the government enacted the Vocational Training Law in 1967 as a result of which many new vocational training institutes were established.

During the 1970s, the government undertook a fundamental structural change towards the development of heavy-chemical industries. This rapid structural change heightened the industrial demand for skilled workers and craftsmen. To meet this requirement, the government strengthened technical and vocational education at the secondary level, expanded the number of public vocational training institutes and legally mandated in-plant vocational training in most private enterprises.

The government encouraged private companies to provide in-plant training with the enactment of the Basic Law for Vocational Training in 1976. Large companies in certain industries were required to provide in-plant training for a certain number of their employees. These companies were obliged to pay a training levy if they did not provide in-plant training, or if their training did not meet government regulations. This mandate applied initially to firms with more than 500 employees;

in 1991, this number was decreased to 150 employees, and in 1995 - to 100 employees in the manufacturing sector.

In parallel with the rapid structural changes to heavy and chemical industries during the 1970s, the government re-organized the existing five-year junior technical colleges (comprising three years of secondary and two years of post-secondary) into two-year junior vocational colleges directed toward the preparation of technicians and engineers - able to perform specific technical tasks in the heavy and chemical industrial fields.

In 1973, the government implemented the National Technical Qualification Testing (NTQT) system to improve the quality of skilled manpower and to enhance the socio-economic status of skilled technical workers. The system successfully encouraged students and employees to acquire higher technical and vocational skills, thereby effectively increasing the efficiency of the workforce. The Korea Manpower Agency and the Korea Chamber of Commerce and Industry (KCCI) were commissioned to carry out the National Qualification Testing. By the end of 1996, a total of 4,905,329 trainees had acquired national technical qualifications.

In the 1980s, the government expanded opportunities for higher education to meet social demand, mainly for political reasons. The government strengthened junior college education and established open universities to provide continuing education for the employed. Thus, enrolment in junior vocational colleges increased while enrolment in vocational senior secondary schools and the number of in-plant trainees began to decline. This resulted in a shortage of workers for production jobs, especially in the small and medium size companies.

In the 1990s, the economy is facing new challenges posed by the changing economic environment including the globalization of trade and labour markets, the rapid advancement of new technologies and more competition. Despite the expansion of higher education in the past decade, the present level of education and training is unable to meet today's industrial demands. The government has recently introduced various measures to strengthen the vocational education and training system in order to prepare the necessary skilled manpower to meet the changing industrial demands while reducing the pressure on higher education.

In 1990, the government began implementing certain policies to increase the enrolment in vocational senior secondary schools, to increase the enrolment ratio of general versus vocational senior secondary schools from 68:32 to 50:50 by 1995. Although the scheme contributed to increasing the enrolment in vocational senior secondary schools from 32 per cent of the total senior secondary school enrolment in 1990 to 39 per cent in 1995, the scheme failed to induce students away from higher education and to supply the necessary manpower required by the industries.

To strengthen the links between schools and industry, especially in the areas of technical education and training, a new system named "the Two-plus-one Program" was introduced in 1994 and was implemented in forty designated model schools in 1998. The programme comprises two years of vocational education in schools, followed by one year of practical 'hands-on' field training in industrial companies. From 1999, the implementation of this system has been left to the discretion of technical senior secondary schools.

Beginning in 1994, the Presidential Commission for Educational Reform (PCER) examined the effectiveness of the policies to expand enrolment figures for vocational senior secondary schools

and to encourage close industry-school linkages. By the end of 1995, it was concluded that some of the earlier policy measures were inappropriate. PCER recommended certain changes in the policies, placing emphasis on quantitative expansion of vocational senior secondary school enrolment to that of placing more emphasis on the quality improvement of vocational education.

PCER proposed the Second Educational Reform Programme including the vocational education reform in 1996. Reflecting recent trends in higher education, the objective of the vocational education reform is to establish a 'Lifelong Vocational Education System'. In order to achieve this goal, legislation on the credit bank system in 1996 was enacted, allowing part-time registration to college on a test base system. In addition, students in vocational senior secondary schools and workers in industry are able to continue further education. These students have priority in the selection process for entry in colleges in related fields of study.

With the introduction of a lifelong education system, junior college education was expanded. Between 1979 and 1997, the enrolment in junior colleges increased 11 times and the programmes were diversified, from 91 into 361. Based on the Educational Reform Programme, the *customized training system* responding to industrial demands has been implemented in two model junior colleges' since 1996 and plans are underway to expand the programme. In order to strengthen the junior colleges capacity for vocational education, programmes linking the curriculum of the second and third years of vocational senior secondary schools with that of the vocational college (2+2) are being implemented in some pilot schools. Students who have completed vocational senior secondary school courses are given priority in the selection process for entry into colleges in related fields of study. From 1996, graduates of junior colleges receive associate degrees.

As the required production skills became increasingly sophisticated with the manufacturing of higher value-added products in the late 1980s, companies began to emphasize skills upgrading for their workers while placing less emphasis on the initial training for trainees prior to employment. Even though the compulsory training levy system contributed to the early increase of in-plant training, it failed to encourage companies to invest in the further education and training of their workers. To encourage enterprises to provide further training of those in employment, the government has introduced the vocational competency development scheme with the enactment of the Vocational Training Promotion Act in 1999. Companies with more than fifty employees in all industries are required to provide vocational competency development programmes for their employees and for job seekers.

Since the latter part of 1997, the Republic of Korea has been suffering from ever-increasing unemployment. The unemployment rate reached 8.0 percent in September 1998 as compared to 2.6 percent in 1997. Unemployment is expected to increase in 1999 due to the severe economic downturn, recent bankruptcies, and downsizing of many companies. Since the onset of the severe economic difficulties, the government has set up special training programmes for the unemployed as a social relief strategy. In July 1998, 3,079 training programmes were offered in 994 institutions.

## CHALLENGES IN THE TWENTY-FIRST CENTURY AND FUTURE STRATEGIES

The trends of globalization of trade and labour markets, rapidly changing technologies, and mass unemployment resulting from the recent economic crisis, are expected to continue in the twenty-first century. This trend will foster rapidly paced changes in future industrial structures and

employment patterns.

The effect on and changes in the labour market are that some jobs are declining in significance, others growing in importance and others still require completely new or different skills. The size of the workforce employed in the service and technology industries, where a high-level education and skills are required, will increase; while the demand for low-skilled workers will shrink. Many employees are likely to change jobs, and possibly even careers, several times during their working lives. The changing nature of labour market trends has significant implications for education, implying inter alia the need to provide lifelong learning, continuing and recurrent technical and vocational education, and continued upgrading of knowledge and skills.

In an effort to respond to the emerging challenges in the twenty-first century, the government will continue to implement current reforms. The following are measures and policy recommendations to be considered:

i) The common school curriculum should be revised to emphasize basic education rather than specialized education. *Core competencies* required for students should be identified and integrated into the Basic Common Curriculum from the first to the tenth grade, as proposed in the Seventy Curriculum which will be effective from the year 2000. Constant improvements in the area of knowledge and skills prove imperative for the future workforce to acquire the basis for developing further knowledge and skills as quickly and effectively as possible. This demands an adequate general knowledge level in order to facilitate the development of knowledge in related areas, that is, a core of "generic knowledge".

ii) *Integration of the senior secondary school curriculum.* Senior secondary schools willing to do so can integrate and manage the curricula of both vocational and general schools in order to enable students to choose from a wide selection of courses during the second and third year. This will enable students to satisfy requirements for further education while at the same time acquiring work-related knowledge and skills that will help them to enter the workforce. Schools that integrate and manage both curricula will minimize the number of compulsory courses which students must take and will increase the number of elective subjects.

iii) *Lifelong education* at different levels should be expanded to benefit each and every citizen. The educational trend has shifted so that more and more students are opting to undertake further study beyond that of senior secondary school. Higher education institutes such as polytechnic universities, polytechnic colleges and junior colleges should therefore be strengthened and equipped as lifelong educational institutions allowing people of all ages to receive further occupational education. Flexible access to vocational education and training throughout life should be ensured.

iv) A *School-to-work transition (STWT) system* must be developed. STWT should begin in the earliest years of schooling, combining efforts in educational improvement, workforce development and economic development. The goal of STWT is to smooth the transition process for all students, including college-bound and non-college-bound youth, disadvantaged youth and out-of-school youth. The system seeks to find a balance in preparing students for "real jobs" without limiting their employment and school opportunities. The components of the system are:

- (a) work-based learning;
- (b) school-based learning;

- (c) connecting activities which articulate between the school-based and work-based components;  
and
- (d) career-awareness programmes.

v) *Enterprise training* should be encouraged. Companies, particularly those which invested in technology-intensive industries, require a continuous updating of skills and knowledge for which formal schools are inadequately prepared. Companies provide the best setting for workers to acquire the work-related knowledge and skills necessary to absorb future technology speedily. Enterprises have to become “places of learning” in addition to being places of work. Training policies should encourage enterprises to provide further training of their employees.



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