Learning for Jobs
OECD Reviews of Vocational Education and Training

Korea

Małgorzata Kuczera, Viktória Kis, Greg Wurzburg

May 2009

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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Summary: Strengths, Challenges and Recommendations

This review of vocational education and training (VET) in Korea is part of "Learning for Jobs", the OECD policy study of VET, a programme of analytical work and individual country reviews designed to help countries make their VET systems more responsive to labour market needs. The review of Korea assesses the main challenges faced by the VET system and presents an interconnected package of four policy recommendations. Each recommendation is described in terms of the challenge, the recommendation itself, supporting arguments, and issues of implementation.

The Korean VET system is part of a system of education which has achieved huge advances in a very short time; school results and educational attainment levels are now among the highest in OECD countries. At the same time, the rapidity of change has presented the Korean VET system with some very significant challenges.

Strengths

- The level of educational attainment among young people is very high: 97% of 25-to-34-year-olds have completed upper secondary education and 53% have tertiary education.
- Education is highly valued by all parts of Korean society.
- 15-year-olds perform very well in numeracy, literacy and science, as illustrated by PISA results.
- The government is committed to increasing employer involvement in VET policy development and implementation, as illustrated by the recent creation of sector councils and Meister schools.
- The tertiary VET sector is well developed; around 32% of tertiary students are enrolled in junior colleges and polytechnic colleges.

Challenges

- On the one hand, VET institutions often see themselves as having a largely academic orientation; on the other, they are expected to provide job-ready recruits for industry. This is a dilemma.
- School-industry partnerships are typically established to satisfy the needs of local firms rather than to provide broader occupation-specific and transferable skills. Beyond such local initiatives, there is little employer engagement in the initial VET system.

- Notwithstanding the broad guidelines provided by the Ministry of Education, Science and Technology (MEST), individual VET institutions typically develop their curricula and provide the qualifications for meeting labour market needs. This leads to a duplication of effort.
- Workplace training is not systematically provided in VET programmes and quality standards for workplace training are weak.
- VET teachers have strong academic and pedagogical preparation, but often lack practical work experience in their field.
- Co-ordination among ministries responsible for VET policy is weak.
- VET degrees obtained in high schools and junior colleges are not systematically aligned with the national technical qualifications (and underlying standards).

Recommendations

1. Provide an institutional framework for enhancing industry participation in VET. Under the framework, permanent bodies should engage industry stakeholders at all levels in the development and implementation of VET policy. All relevant ministries should be represented in these bodies.
2. Improve the provision, quality and relevance of initial workplace training by strengthening incentives for partnerships between VET institutions and firms and by developing and implementing quality standards.
3. Encourage newly recruited VET teachers to have relevant work experience prior to entering the profession, particularly for high school VET. Require all VET institutions to ensure that VET teachers regularly update their skills in the vocational area, including their knowledge of technologies and working practices.
4. Derive the vocational part of the curriculum used by VET institutions from, or at least adapt it to, national technical standards of high quality which are relevant to industry needs. At the end of a VET programme students should be able to obtain two certificates: a graduation degree awarded by a VET institution; and, on the basis of a national technical qualification (NTQ) examination, a technical qualification. Given mixed evidence on the effectiveness of current NTQs, NTQs should be evaluated by the Ministry of Labour (and reformed if necessary).

Chapter 1

Introduction

This chapter describes the OECD policy study of VET in Korea, summarises the main features of the Korean VET system in high schools and tertiary VET and sets out an assessment of its strengths and challenges.

1.1 The OECD policy review of Korea

This review is one of a series of reviews of vocational education and training (VET) in OECD countries (see Box 1.1).

Box 1.1 Learning for Jobs: the OECD policy study of vocational education and training

This study seeks to help countries increase the responsiveness of VET systems to labour market requirements. It aims to improve the evidence base, identify a set of policy options, and develop tools to appraise VET policy initiatives.

A programme of *analytical work* draws on evidence from all OECD countries. It includes an international questionnaire on VET systems, reviews of previous OECD studies and the academic literature on topics such as costs and benefits of VET, indicators to assess the quality of VET provision and analysis of labour market outcomes based on statistical data from labour force surveys and PISA (the OECD's Programme on International Student Assessment).

Country policy reviews that provide country-specific policy recommendations were carried out for Sweden, the United Kingdom (England and Wales), Hungary, Australia, Norway, Mexico, Korea and Switzerland between the end of 2007 and the end of 2008.

The results of both the analytical work and the country reviews will feed into the *initial comparative report* which will be available on the OECD website in 2009.

A *second phase* of this work, with further country reviews in Austria, Belgium (Flanders), the Czech Republic, Germany, Ireland, and the United States (South Carolina and Texas), will take place in 2009 and 2010. The *final comparative report*, drawing together all the conclusions of the study will be published in 2010.

The website for the activity is *www.oecd.org/edu/learningforjobs.*

The review follows the standard methodology established for the OECD policy reviews of VET. At the outset, the Korean authorities were invited to complete a detailed questionnaire. Equipped with the questionnaire responses and other background information, two members of the OECD Secretariat went to Korea on 19-22 May 2008 for an initial fact-finding visit to assemble information about the characteristics of VET and to identify the main policy challenges. This initial research provided the basis for a return visit. Three members of the OECD Secretariat (accompanied by an international expert during the first part of the visit) conducted further interviews in different parts of Korea on 4-10 September 2008 (see Annex A for the team's biographical details and the programme of visits) in order to develop policy recommendations. This review presents their analysis and recommendations.

The review deals with a deliberately limited set of issues related mainly to initial VET. The topics addressed were agreed with the Korean authorities, and limited to issues on which the review could draw on international experience or could otherwise usefully add value to the domestic policy debate. An earlier draft of this report was submitted to the Korean authorities in order to ensure that a description of the Korean VET system and labour market presented in this document is correct.

Within the initial education system, VET in Korea takes place at high school, upper secondary and tertiary level. It also encompasses a range of measures aiming to provide vocational training to the adult population, including training for employees, the

unemployed and those who are outside the labour market[1]. The responsibility for VET is shared by different ministries, with the Ministry of Education, Science and Technology holding the main responsibility for initial VET and the Ministry of Labour handling vocational training for adults. This review concentrates on initial VET, primarily VET high schools, junior colleges and polytechnic colleges.

The review takes place at a time of educational initiatives in Korea which aim to make high school VET more effective and more responsive to industry needs. The objective of this review is to draw on international evidence and experience in order to assist the Korean government in this process.

1.2 The structure of the report

This first chapter places the Korean review of VET in the context of the OECD policy reviews of VET, presents the structure of the report, describes the main features of Korean's upper secondary and tertiary VET system, and examines its strengths and challenges. The second chapter proposes policy recommendations

Each policy recommendation is set out as:

- *The challenge* – the problem that gives rise to the recommendation.
- *The recommendation* – the text of the recommendation.
- *The supporting arguments* – the evidence that supports the recommendation.
- *Implementation* – a discussion of how the recommendation might be implemented.

1.3 The historical and economic background

Certain aspects of Korean society, the structure of the economy, and the functioning of the labour market influence the demand for and supply of skilled workers and provide an important background to VET policy.

The "Korean economic miracle" refers to the rapid growth and transformation of the country's economy and society. Since the early 1960s Korea has experienced rapid economic growth based on a government policy and business strategy that favoured a sharp shift out of agriculture and into manufacturing and services. This fed a boom in exports, which are increasingly high-technology and high value-added, most recently in the information and communication technology sector. By 2006 less than 8% of employment was in agriculture, 26% in industry and 66% in services. GDP per capita in Korea rose from less than 20% of the OECD average in 1970 to nearly 80% in 2007 (OECD, 2002, 2008c). The "education miracle" refers to a sharp rise in educational attainment which has gone from very low levels to levels that now exceed those of many OECD countries. Within the OECD, Korean 25-to-34-year-olds now have the highest rate of completion of upper secondary education and the third highest rate for tertiary education. Progress has been particularly striking for women. While the government

1. In addition to public institutions there are many private training providers. In 2008, there were 2 620 private institutions accredited by the Ministry of Labour with 107 349 programmes. Young people can enrol in these institutions during their studies and after graduation, before entry into the labour market.

actively encouraged investment in education and skills as part of its strategy to transform the Korean economy, its investment in education (expressed as a share of GDP spent on education institutions) is modest – the tenth lowest in the OECD (OECD 2008a). The education miracle could not have happened if Korean students and their families did not invest heavily in education, particularly through private tutoring.

Mismatch between human capital requirements and educational aspirations

However, there are signs of a *mismatch* between the supply of human capital associated with the education miracle and demand from the labour market. Though a comparatively high proportion of young Koreans pursue tertiary education, the payoff in terms of higher earnings and greater employability is more muted than in other countries. Employed tertiary graduates aged 25 to 34 earn, on average, 25% more than employed upper secondary education graduates; this relatively small "education premium" is lower than in four out of five OECD countries for which data are available. The proportion of young Koreans (15-to-29-year-olds) with tertiary qualifications who are not in employment, education or training is exceptionally high, more than double the OECD average and second only to Italy (OECD, 2007a, p. 41).

The role of SMEs

The private sector is characterised by a contrast between large firms with high productivity and small and medium-sized firms with low productivity. The former are often in the high-technology, highly competitive export sector. They engage in more research and are far more likely to offer regular employment (stable jobs with high pay and social protection).

Small and medium-sized enterprises (SMEs) employ 90% of Korea's workers and their share of employment is increasing (OECD, 2007a).[2] They are mainly involved in services and low-technology sectors. Their productivity is lower than in large enterprises; Lee Kye Woo (2005) reports that productivity per worker in manufacturing SMEs is only 34% of that in big companies. Wages in the SME sector are also below those in big enterprises. Workers in small firms with 10 to 29 employees received on average 58% of the wages of workers in large firms with 500 or more employees in 2004 (Hwang, 2006).

The gap between large firms and SME service firms is becoming more marked. As the SME sector has expanded, the incidence of temporary employment, the largest category of irregular employment, increased from 17% in 2001 to 30% in 2004, almost double the OECD average (OECD, 2008c); this goes hand in hand with a large wage gap between regular and irregular workers. As a result, the more highly qualified graduates have sought out better jobs and regular employment. This is seen as a key source of the increasing income inequality in Korea (OECD, 2007a, p. 17).

2. In 2005, Korean companies employed an average of 4.7; this is below the average firm size in many OECD countries.

Is the mismatch sustainable?

Korea's long-standing comparative advantage in manufacturing appears to have lessened. Labour productivity (output per hour) stands at only 42% of the level in the United States. Korea increasingly relies on growth in services. As services accounted for only 58% of Korea's GDP in 2007, the sector has room to grow (the OECD average is 70% of GDP). Over the past decade, however, it grew at an annual rate of 1.2%, less than one-seventh the rate in manufacturing since 1990 (Grubb *et al.*, 2006).

In the current economic setting, tertiary education qualifications are seen as maximising individuals' chances of avoiding the low-paying and unstable employment that has been concentrated in service sector jobs and SMEs. In this context, there are two challenges. One is to increase the demand for well-trained and educated workers in SMEs as well as in larger enterprises, breaking the rigid link that now exists between the level and nature of education/training and the kind of enterprise and sector of activity in which employment can be found. The second is to improve the quality of VET and to enhance its relevance to the present and future needs of enterprises, individuals and society. This report addresses both issues.

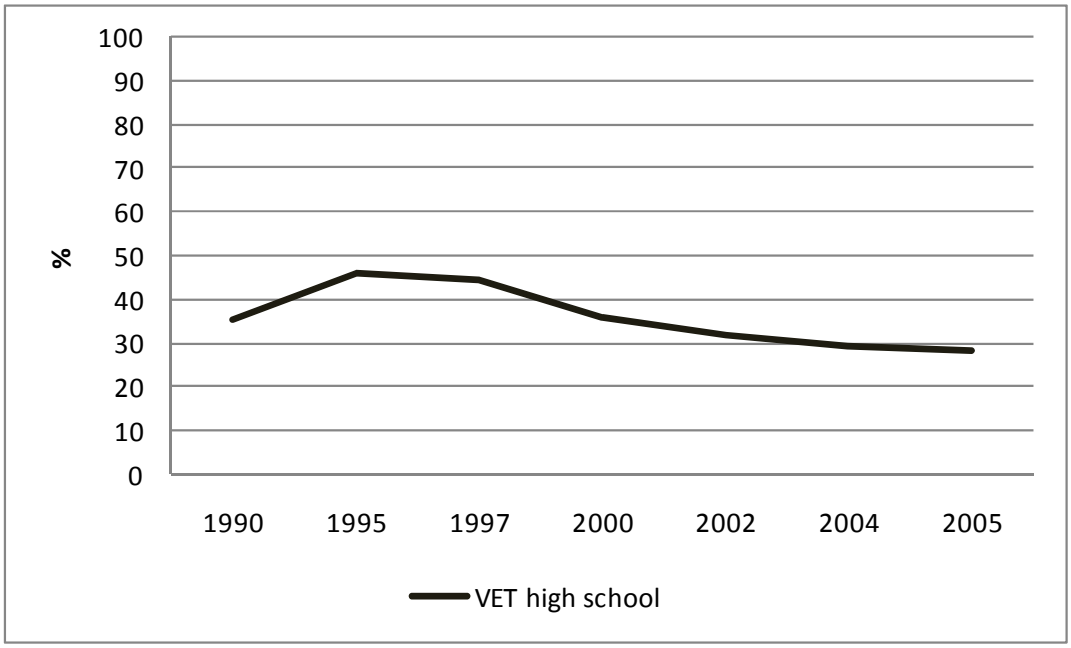
1.4 Snapshot of the system

At the end of compulsory education following the completion of middle school, virtually all Korean students move to high school (upper secondary education). High school lasts three years and caters to 15-to-17-year-olds. Schooling may take place in a general high school, a vocational high school, or in the various other types of school attended by around 1% of high school students[3]. Students are selected for different types of high school according to their academic performance in middle school, the results of a school-administered entrance examination, or both. In recent years the number of students in vocational high schools has decreased, from about half of students in 1995 down to about one-quarter today (Figure 1.1). Korea has one of the highest upper secondary graduation rates in the OECD area (OECD, 2008a): 98% in general programmes and 91% in VET tracks (KRIVET, 2008). VET students have a lower socio-economic background than students in general education and perform less well than their peers in general programmes (PISA 2006 database, *http://pisa2006.acer.edu.au/downloads.php*).

3. These include air and correspondence high schools, trade high school, miscellaneous school, schools attached to industrial firms, and special classes requested by industrial firms. (Ministry of Education and Human Resources Development and Korean Educational Development Institute, 2005).

Figure 1.1 Change in enrolment in VET high schools

1990-2005



Source: KRIVET (2008), "Responses to the National Questionnaire", unpublished.

In order to make VET high schools more attractive and to encourage students to enrol in VET, in April 2007 the Korean government changed the name of 'vocational high schools' to 'professional high schools'. Alongside the change of the name the Ministry of Education (now MEST) facilitated the entry of professional high school graduates to colleges and universities.

Most VET high school students continue into tertiary education; in 2007 43% transferred to junior colleges and 25% to university. At tertiary level, VET is provided in junior colleges (two- and three-year programmes) and at polytechnic colleges. Education at junior colleges and in two-year programmes in polytechnic colleges leads to an Industrial Associate degree. Polytechnics also provide one-year programmes for craftsmen and master craftsmen and short programmes for employed workers. The requirements for admission to these institutions are in principle the same as those in the rest of tertiary sector[4] but candidates with vocational qualifications or VET high school graduates are given priority in the admission process. Junior colleges have expanded rapidly in response to demand and in 2006 enrolled around 27% of all tertiary students[5] (KRIVET, 2008). Around 5% of students are enrolled in polytechnic colleges.

Nearly half of all high schools are private, and the proportion is similar in VET high schools. Private and public schools operate according to similar rules; for example, they

4. Students are admitted on the basis of their result on the College Scholastic Aptitude Test (CSAT).

5. Tertiary students include: students in university, junior colleges and polytechnic colleges.

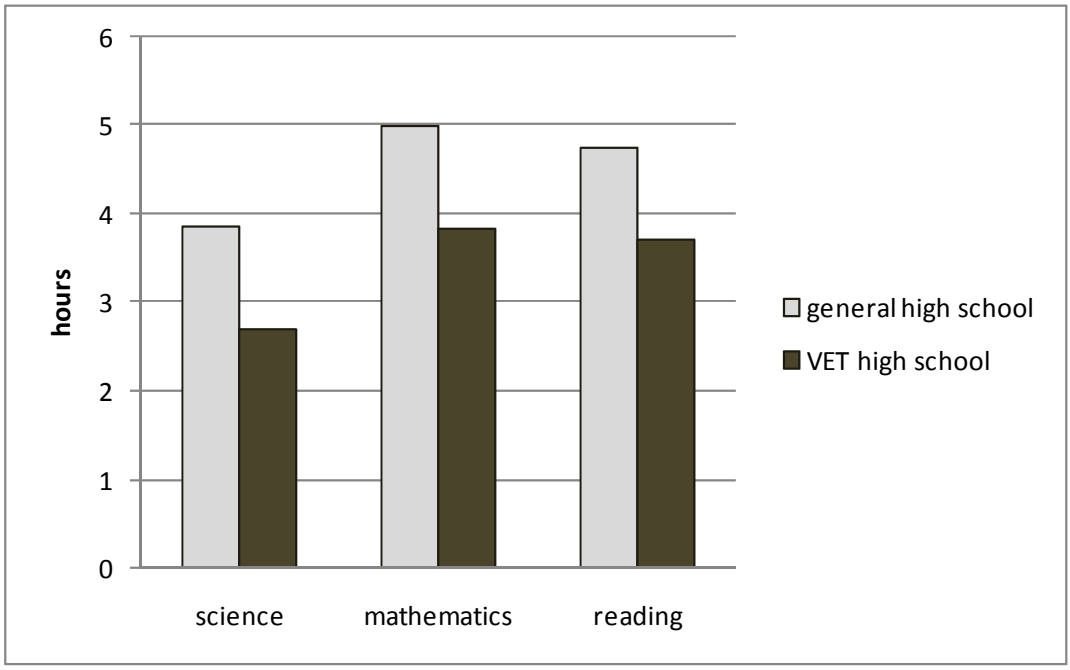
charge the same fees for high school education.[6] The main difference between private and public schools lies in responsibility for teacher appointments.

95% of junior college students are in private institutions. Fees charged by private colleges are approximately twice those of public institutions (Grubb *et al*., 2006). Polytechnic colleges are state-run institutions under the responsibility of the Ministry of Labour; government funding keeps student fees much lower than those charged by other tertiary institutions.

Vocational high schools offer programmes in five fields: agriculture, technology/engineering, commerce/business, maritime/fishery, and home economics. In principle, all students in the first year of high school (10th grade) follow a common national curriculum, but according to PISA 2006 data, 15-year-olds in VET tracks spend less time on mathematics, science and reading than their peers in general programmes (Figure 1.2). In the second and third years (11th and 12th grades) the curriculum is differentiated: VET students have fewer hours in general subjects and instead are offered courses relevant to their specialisation.

Figure 1.2 Average time spent in regular lessons at school

Number of hours per week, 2006



Source: PISA 2006 data, *http://pisa2006.acer.edu.au/downloads.php*.

High school VET is mainly provided in the school, meaning that the school is responsible for both theoretical vocational education and practical training. In some programmes, students may participate in workplace training through co-operation between schools and local employers. The government is now piloting Vocational Meister Schools in which workplace training is an important part of the programme.

6. Students from poor households may be fully or partially exempted from tuition fees.

1.5 Strengths and challenges of the Korean VET system

The Korean VET system is part of a system of education which has achieved huge advances in a very short time; educational achievement and attainment levels are now among the highest in OECD countries. At the same time, the rapidity of change has presented the Korean VET system with some very significant challenges.

Strengths

- The level of educational attainment among young people is very high: 97% of 25-to-34-year-olds have completed upper secondary education and 53% have tertiary education.
- Education is highly valued by all parts of Korean society.
- 15-year-olds perform very well in numeracy, literacy and science, as illustrated by PISA results.
- The government is committed to increasing employer involvement in VET policy development and implementation, as illustrated by the recent creation of sector councils and Meister schools.
- The tertiary VET sector is well developed; around 32% of tertiary students are enrolled in junior colleges and polytechnic colleges.

Challenges

- VET institutions often have a largely academic orientation; but are also expected to provide job-ready recruits for industry. This creates a dilemma.
- School-industry partnerships are typically established to satisfy the needs of local firms rather than to provide broader occupation-specific and transferable skills. Beyond such local initiatives, there is little employer engagement in the initial VET system.
- Despite the guidelines provided by the Ministry of Education, Science and Technology (MEST), individual VET institutions typically develop the curricula and provide the qualifications for meeting labour market needs. This leads to a duplication of efforts.
- Workplace training is not systematically provided in VET programmes and quality standards for workplace training are weak.
- VET teachers have strong academic and pedagogical preparation, but often lack practical work experience in their field.
- Co-ordination among ministries responsible for VET policy is weak.
- VET degrees obtained in high schools and junior colleges are not systematically aligned with the national technical qualifications (and underlying standards).

Chapter 2

Policy Recommendations

Tertiary VET in junior colleges and polytechnics has developed rapidly in recent years and now caters to around one-third of tertiary students. By contrast, enrolment in VET high schools has been falling, and around three-quarters of VET high school graduates go on to some form of tertiary education. Industry and employers have very limited engagement in the initial VET system. To address these issues a set of four interconnected recommendations is proposed.

First, the role of industry and trade unions should be reinforced at all levels of policy formulation. To this end we recommend establishing an institutional framework with bodies in which employers and employees' organisations can be represented. We note and support the recent efforts of the Korean government to improve the involvement of industry in VET through the establishment of sector councils.

Good quality practical training is at the heart of VET, and workplace training has particular advantages. This may require targeted incentives to encourage firms to provide good workplace training. Good practical training also depends very much on VET teachers, and while Korea's VET teachers receive extensive academic preparation, relevant work experience is unfortunately not required. We propose that VET teachers should be encouraged to gain relevant work experience before entering the profession and through in-service training.

National technical qualifications currently appear to have little relation to the education system. To increase the efficiency of the VET system and improve its responsiveness to industry needs we recommend that VET curricula be more clearly linked to national technical standards and qualifications.

2.1 Stronger industry involvement in VET

Challenge

Unlike many other countries, Korea has very few bodies involving employers that advise on VET policy, on curricula, or on the size and mix of VET provision in high school at tertiary level. Jeong (1995) describes the Korean VET system as "state-dominated". The government's recently created sector councils have a limited role in policy formulation and their responsibility does not extend to high school VET and polytechnics. Trade unions are not currently represented in sector councils. Other bodies representing firms (such as the Korea Chamber of Commerce and Industry[7]) are very little involved in initial VET, and educational institutions visited by the team had few links with local chambers of commerce and industry. According to people met by the team and national studies (*e.g.* Jeong 1995; Lee Young-Hyun, 2007) employers have little interest in school-industry initiatives.

VET institutions[8] create *ad hoc* partnerships with local firms but there is no wider structural framework to ensure that the VET system provides the skills employers need and to facilitate workplace training while ensuring that students also learn transferable skills. Jung *et al.* (2004) describe the VET institution-industry network as unstable and informal, concluding that the role of VET institutions varies according to the shifting employment policies of enterprises.

Korean society has a high esteem for academic knowledge (Jeong, 1995), and despite initiatives to link VET institutions to industry, VET institutions often tend to see themselves primarily in terms of an academic mission. The team heard in one VET high school that its mission was to transmit theoretical knowledge to students. This gives industry limited room to engage with and influence VET.

These apparent problems might not be serious if the labour market were working smoothly, but companies appear dissatisfied with new employees' skills. By comparison with other OECD countries, the risk of unemployment for young people is high relative to that among older people (Figure 2.1) and the inactivity rate[9] among 15-to-29-year-olds is slightly above the OECD average (OECD, 2007a). This suggests that Korea's education and training system may not be meeting labour market needs as well as it should.

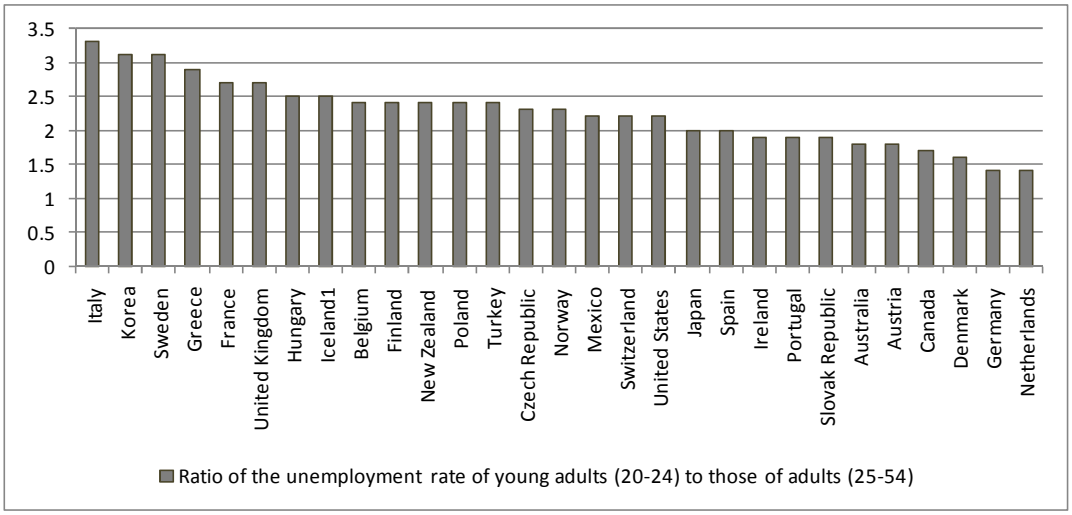
7. *http://english.korcham.net/*

8. In this report the term "VET institution" refers to VET high schools, junior colleges and polytechnics, unless otherwise specified.

9. The inactivity rate is the share of persons aged 15 to 29 neither in education nor in employment.

Figure 2.1 Young adults in unemployment

2006



Source: OECD database, OECD.Stat website, *http://stats.oecd.org/wbos/Index.aspx*.

In sum, employers are only weakly engaged in VET, often only locally and in a piecemeal way, and the academic self-perception of many VET institutions is an obstacle to further industry involvement. These features are associated with weak labour market outcomes of VET.

Recommendation 1

Provide an institutional framework for enhancing industry participation in VET. Under the framework, permanent bodies should engage industry stakeholders at all levels of the development and implementation of VET policy. All relevant ministries should be represented in these bodies.

Supporting arguments

Four arguments support this recommendation. First, VET has to be developed in consultation with industry if it is to meet labour market needs. Second, the structure of the Korean labour market makes the engagement of employers in VET particularly important. Third, the systematic engagement of employers ensures consistency and co-ordination of VET policies and practice across the country. Fourth, bodies that seek to engage employers have the useful side effect of promoting more co-operation between MEST and the Ministry of Labour.

VET has to be developed in consultation with industry if it is to meet labour market needs

When, as at present, VET policy is formulated without industry involvement, it is much harder to obtain industry support for policy implementation, for example by providing workplace training or through recognition of VET qualifications. Successful reforms of VET have to be built through dialogue with industry. In Norway, a reform of

the VET system to establish apprenticeship training in high school would not have been possible without agreement between the authorities and representatives of employers and trade unions. Conversely, in the United Kingdom, persistently weak employers' engagement in VET has undermined initiatives and reforms in this area (see, for example, Keep, 2005; Ryan, 2000; Soskice, 1993).

Some employer and employee representatives expressed a lack of confidence in VET, especially at high school level, to the visiting OECD team. This serious problem needs to be addressed through dialogue, requiring fora where people meet regularly to discuss VET issues and where roles and responsibilities are clearly stated.

Greater involvement of industry in both policy and provision is also a pre-condition for implementing the other recommendations contained in this report. In particular, employer support is necessary for developing workplace training (see Section 2.2) and for better alignment of VET degrees with occupational standards (see Section 2.4). Korea's endeavours to increase training in private enterprises (mainly in SMEs) have shown that initiatives that touch upon companies' primary interests require industry support to succeed (Lee Kye Woo, 2005).

Certain features of Korean labour call for stronger engagement of employers in VET

In Korea employment prospects are better for people with good education and skills.[10] At the same time opportunities to receive training and upgrade skills once in employment are limited. Many companies cannot afford to provide training, and high labour turnover discourages them from investing in their workforce's skills. More generally, a firm's motivation to invest in VET depends on characteristics such as its size, structure and methods of production. Low-technology firms that rely on intensive use of cheap unskilled labour on fixed-term contracts tend to invest less in skills than companies with highly skilled workers and new technologies (see for example Gashi, Pugh and Adnett, 2008). Brunello and De Paola (2004) show that firms with a workforce that carries out sophisticated tasks invest more in training since the market in sophisticated skills is more limited implying less labour mobility.

Low employees training

Spending on training per employee in large firms is around seven times higher than for SMEs (Lee Young Hyun, 2007). We are not aware of any data on training provided to students in initial VET by firm size, but the visiting team was told that SMEs often cannot afford to take on students as trainees and if they do so the training quality tends to be low.

Even in larger companies, employee training is declining. The role of *chaebol* (large conglomerates) in training new graduate recruits has diminished owing to restructuring following the financial crisis in late 1997. "The chaebol's educational or training function for university graduates is dead now", according to a general manager in one of the largest *chaebol* (Park, 2007, p. 419). Wage compression and employment rigidity in large firms and growing competition in international markets encourage large companies to

10. The educational institution a person graduates from is also an important criterion in recruitment policies, especially in big companies. This may contribute to the mismatch on the labour market as students and parents focus on academic education and tend to neglect knowledge and skills required in the workplace.

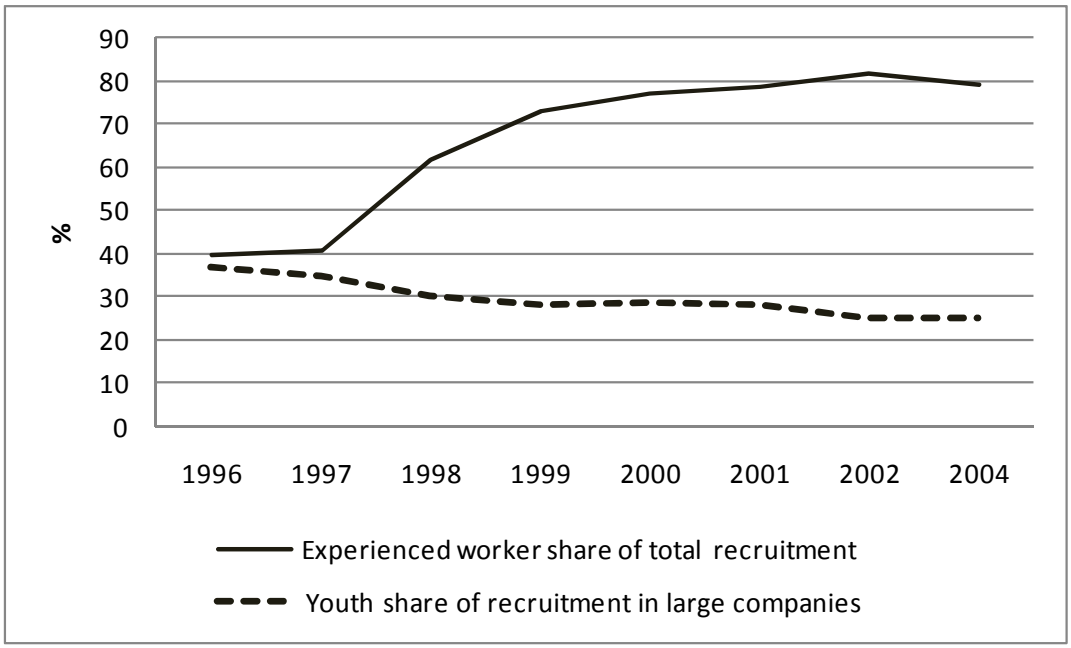
hire experienced employees rather than young people with limited work experience and to outsource production to SMEs to reduce their costs (Figure 2.2). Given their high labour costs, large enterprises prefer to employ experienced workers who do not require a lot of investment in training.

International comparative data on adult learning in Korea are not systematically available, but according to national data sources participation in adult education of around 20% is lower than in Austria, Denmark, Finland, Netherlands, Norway, the United Kingdom and the United States where the participation is 40% and above[11] (OECD 2005b).

High employee turnover discourages training

Employee turnover in Korea is high, with 34% of employees in their jobs for less than one year compared to 22% in the United States (Jones, 2005). Firms are naturally reluctant to invest in employees who might leave after receiving training (Jones, 2005; Chang Hong-Geun, 2002). Better working conditions in big companies encourage workers in SMEs to try to move to a large company. Chae Chang Kyun *et al.* (2004) note that "university and junior college graduates who first get a job at a small firm tend to move to a large company after accumulating some experience". As a result, SMEs are particularly reluctant to engage in training.

Figure 2.2 Growing preference for experienced workers



Source: MoL and KLI (2004) *Chongnyonsintp Wonin Boonsok* [Analysis of young person unemployment], Ministry of Labour, Seoul; Donga (2003) in Park, I. (2007), "The Labour Market, Skill Formation and Training in the 'Post-developmental' State: The Example of South Korea", *Journal of Education and Work*, Vol. 20, No. 5, pp. 417-435, Taylor and Francis.

11. All data refer to a reference period of one year. Data for Korea (2000) and the United States (2001) come from national sources and for other countries from Eurobarometer (2003).

Training is not rewarded by wages

Under-investment in training is reinforced by the wage system. Because wages are based mainly on seniority, investment by individuals in training is not reflected in their salaries. The Japanese labour market system is in many respects similar to Korea's. Wages in Japan are linked to seniority but also to participation in in-company training through job flexibility and job rotation training. The Japanese system, which links career development to training, encourages employees to stay abreast of recent technological changes and to update their skills constantly (Hwang, 2006; Mincer and Higuchi, 1987).

Irregular workers are less likely to receive training

"Irregular" employees include contingent workers, fixed-term workers, part-time workers and atypical workers; in March 2008, they represented around 35% of all employees (Korean LFS). They are mainly concentrated in SMEs, their wages are lower than those of regular employees, and they often have no worksite-based social insurance system (Jones, 2005). Those with fewer skills and less education, as well as younger and older people, are more likely to be irregular workers (see Table 2.1). Irregular workers also have little chance to move to more stable employment. Analysis of the labour panel study conducted in 1998-2000 shows that five years after starting a job as irregular workers, 68% retained this status. They participate less in vocational training than regular employees. They are excluded from training assistance programmes for the employed and at the same time are not eligible for VET programmes for the unemployed (Chang Hong-Geun, 2002).

Table 2.1 Percentage of educational attainment groups who are irregular workers

2001

Education level	Junior high schools and under	High school	College	University
	81.3	58.2	49.5	36.9

Source: Chang Hong-Geun (2002), Irregular Workers and the Vocational Education and Training, KRIVET, Seoul.

Given market failures, Korea needs a structure to support training

In sum, high employee turnover, a rigid wage system that does not reward training and a substantial proportion of irregular workers mean that employees may be unlikely to obtain training. Initial VET is therefore very important, as it is necessary to ensure that young people have the skills needed to be immediately productive. Such publicly sponsored initial VET in turn requires more co-ordination and consultation with companies in terms of the need for and provision of skills. Brunello and De Paola (2004), for example, argue that policies that enhance co-operation among firms, such as anti-headhunting agreements or voluntary restraints on poaching behaviour, affect provision of training.

Enhancing the involvement of SMEs in VET is a particular challenge. While individual companies may prefer to maintain a low-skilled irregular workforce which ensures low labour costs, it is not in the collective interests of the Korean economy to have a large sector of such firms. A large low-skilled irregular workforce is linked to high

rates of unemployment and inactivity among young people, many of whom prefer to wait for an opportunity to start in a big company than be trapped in irregular jobs with poor career prospects. In the long run this will decrease the amount of highly skilled capital available to companies.

Comprehensive participation of employers in VET policies ensures consistency and co-ordination of policies and practices

In the absence of national arrangements to link VET with industry, informal local partnerships between VET institutions and firms have sprung up. While these initiatives are often individually desirable, the absence of a wider framework may lead to a fragmented VET system. A diversity of local arrangements in matters such as curricula for practical training, qualifications delivered and duration of workplace training can make the system more complicated and opaque for students, parents and employers if, for example, vocational qualifications obtained in a programme associated with one company are not valued by other companies (see Recommendation 4).

A more comprehensive engagement of industry in the VET system would give companies insight into the system. This would encourage individual companies to adopt a position on VET which respects the views of the overall industry sector and minimise the risk of an unrepresentative group's excessive influence on VET policy. Co-ordination and the adoption of common objectives for VET would also improve the system's cost-effectiveness. Guidelines for quality control and skills assessment could be set by bodies in which companies are represented and would apply to the whole VET sector, rather than being determined by local coalitions of VET institutions and firms. This would also help to convey to VET institutions some clear messages on industry needs. As a result, VET institutions that now decide on programmes on the basis of the needs expressed by a few local employers would have a better understanding of labour market needs at sectoral, regional and national levels.

A network of bodies to engage industry would help to bring together ministries interested in VET

Korea's Ministry of Education, Science and Technology (MEST) is responsible for VET in high schools and at tertiary level (excluding polytechnics) while the Ministry of Labour is responsible for training related to the labour market and polytechnics. Co-operation between these ministries on VET issues is lacking (Grubb *et al*., 2006). As a result there are two parallel vocational qualification systems, one linked to the education system and another linked to the labour market (see Section 2.4). To ensure a minimum of consistency and complementarity between the areas of VET under the control of the two ministries (*e.g.* to harmonise degrees delivered by VET institutions with national qualifications), interested parties need to co-ordinate their work. A national organisational structure to engage industry and other interested parties would facilitate communication between the two ministries.

Implementation

The development of initial VET does not preclude good in-firm training and we would encourage the development of both as a single and mutually reinforcing system.

In countries such as Korea, with a weak tradition of industry involvement in formal education and training, it is not easy to develop more participative VET policy making (*e.g.* Jeong, 1995). Industry involvement in VET also depends on the sector. In countries such as Norway, Sweden and the United Kingdom, "old craft trades" such as electrics and mechanics are better organised and often more engaged in training than more recent professions such as tourism or healthcare, for example. While tradition strongly influences national agreements, well-targeted policy can modify or reinforce such structures. Ryan (2000) cites Ireland as a country that successfully engaged employers in VET and in reform of the system, despite an initially feeble VET system and weak involvement of companies. In the 1990s Ireland introduced apprenticeship training, which was designed and implemented in dialogue with employers and trade unions. Standards-training was established for 14 craft and technical occupations. Training regulations laid down funding arrangements (the work-based component of apprenticeship funded by firms and public funding of off-the-job training) and the educational content of apprenticeship training. First evaluations showed that apprenticeship was an attractive option for students and employers and the number of students enrolled and occupations covered expanded rapidly. Weak quality assurance was recognised at the same time as a weakness of the new system (Field and O'Dubhchair, 2001).

Korea can usefully build on existing bodies such as the sector councils and the chambers of commerce and industry by vesting them with more responsibility in the area of VET. Other bodies can be created if necessary. The new framework would not eradicate VET institutions' efforts to work with local firms but would complement and support them through the development of broader umbrella bodies, so that firms might advise on VET policy formulated not only by VET institutions but also by education offices and the government.

Countries with strong VET systems typically have a national structure for industry representatives, linked to other bodies with regional, sectoral or other functional responsibilities. For example in Australia the Ministerial Council for Vocational and Technical Education (MCVTE) is responsible for VET policy making and planning. Various bodies at national level in which employers are represented – the National Quality Council, the National Industry Skills Committee, TVET Australia, including the National Audit and Registration Agency – provide a national framework for the VET system. Employers also advise on skills needs in their sectors through participation in the sector skills councils.

Table 2.2 presents a general scheme of industry involvement. In most countries the bodies that advise and sometimes decide on VET include representatives of employers, employees, government and sometimes educators. Bodies that speak in the name of companies need to be recognised by the firms they represent as the absence of such recognition can be an obstacle to industry engagement (Gleeson and Keep, 2004). Depending on a country's division of responsibility among authorities at different levels, the organisation of the institutional framework and role of different bodies will vary.

Table 2.2 Simplified national framework for industry involvement in VET

National VET policy: body guiding the ministry on VET policy	Different aspects of VET policy, *e.g.* curriculum content, assessment of practical skills, quality assurance
↓ ↑	
National VET policy by sector/specific policy: specialised bodies guiding the ministry on specific sectors or/and on specific VET policies	
↓ ↑	
Local/regional VET policy: bodies guiding local/regional authorities	
↓ ↑	
VET policy at institution level: school bodies in which industry is involved, *i.e.* governing boards	

In general, employer representation in VET policy making should be balanced by the interests of employees. This is the traditional role of trade unions. In Korea the relationships between trade unions and employers' organisations are sometimes poor, and trade unions are not represented in the recently established sector councils (Choi Youngsup, n.d.). Jeong (1995) observes that inherently weak enterprise unions, as in Korea, hamper the involvement of labour in national VET policy.

Employers' perceptions of the benefits of involvement in VET and of participating in VET policy making is an important driver of their engagement. The role of the government and employers' organisations might therefore be to explain to companies the potential benefits of good training. Given the particular barriers to training in SMEs discussed earlier, reforms to modernise the SME sector might be required in order for SMEs to see training initiatives as beneficial.

2.2 Development of good quality workplace training

Challenge

Workplace training is little used in Korea to develop the practical skills of VET students. When provided, the quality varies. Current incentives to firms to offer workplace training are weak. This is unfortunate given the strong evidence of the advantages of workplace training.

Little use of workplace training

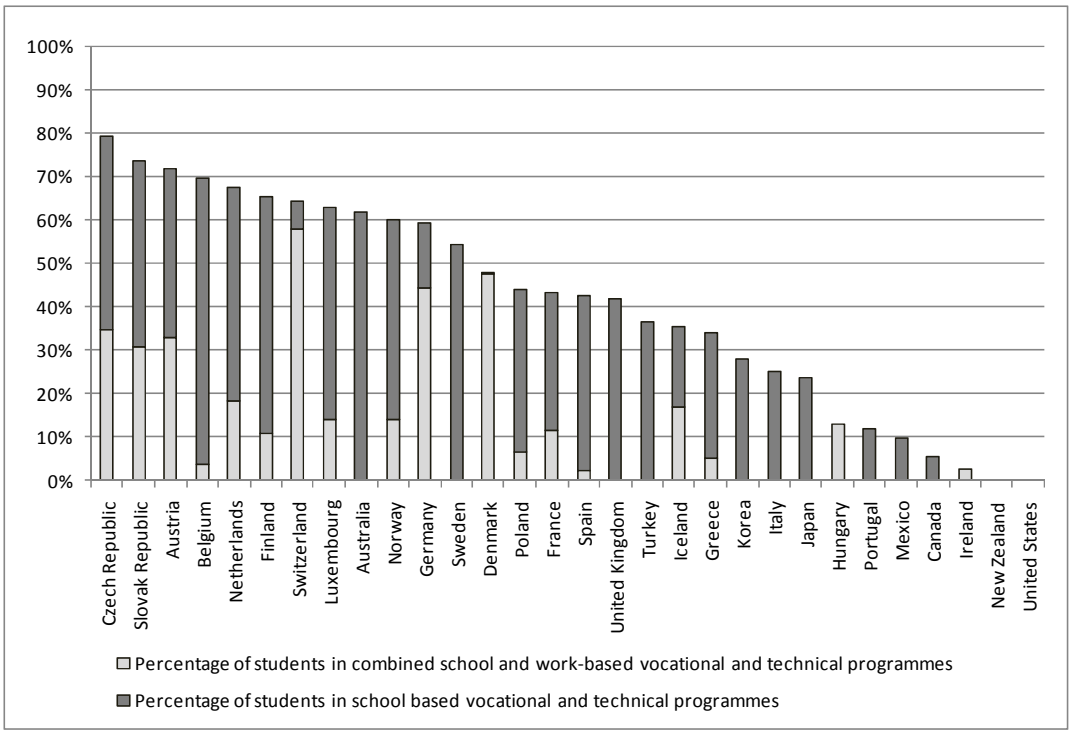
VET students in Korea learn practical skills primarily in school workshops and only occasionally in the workplace. When workplace training does exist, its form, duration and quality are highly variable. In high schools practical skills are mainly developed in school although in some small programmes (*e.g.* customised education[12]) a workplace training component is more common. Figure 2.3 illustrates this pattern. Choi *et al.* (2001) observe that junior colleges tend to have stronger relationships with industry than VET high schools. At tertiary level in junior colleges, 50% of class hours are in principle for

12. High school VET programmes are designed in co-operation with companies and adapted to their needs. After completion of the programme, students usually carry out one-year practical training in the company. There were around 1 000 students in customised education among those who started in 2005.

specialist courses (75% to 85% of the total course credit) and should be composed of "practice" and "experimentation". In practice, each institution determines the amount of practical training offered (KRIVET, 2008). There are many different types of cooperative arrangements between junior colleges and firms. Some may work well, although, as Grubb *et al.* (2006) observe, there seems to be little evaluation of these partnerships and little information about which ones are more successful.

Figure 2.3 Percentage of all upper secondary students in vocational and technical programmes

2006



Source: OECD statistics on education, students enrolled by type of institution, *http://stats.oecd.org/wbos/Index.aspx*.

Although Korea has launched initiatives to improve school-industry co-operation and to increase the provision of workplace training, they have not always met their objectives. In the 1990s, a special programme in high school VET involving two years in school followed by one year of workplace training was launched, inspired by the German apprenticeship model. But the number of schools and students choosing this path started to drop a few years after its introduction (Lee Young Hyun, 2007) and the programme was abolished. According to studies and people met by the visiting team, the main obstacle to workplace training is companies' lack of interest – a lack of interest compounded by a VET system often seen as unresponsive to the requirements of industry.

Low standards

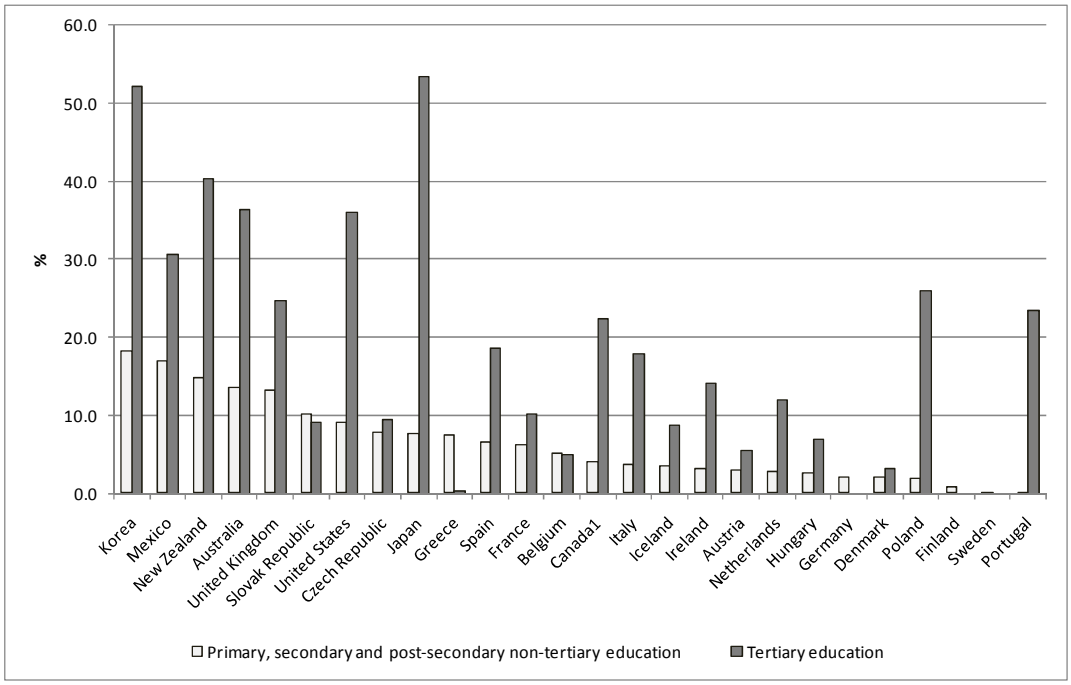
The quality of workplace training is sometimes poor, and quality assurance is lacking. There is no statutory framework setting out the rights and duties of the different parties involved. Individual VET institutions decide on the appropriate type of workplace

training. As this is often not formally a part of education programmes, it may not be easy to distinguish between a period of practical training and employment in industry (Choi *et al.*, 2001). For example high school VET students participating in customised education start their full-time workplace training after completing the school programme and at that point have the status of employees.

The visiting team heard that students are commonly used as cheap unskilled labour, especially in SMEs. Jung *et al.* (2004), in an evaluation of school-workplace partnership initiatives at high school level, pointed out that workplace training was perceived by enterprises as a means of recruiting unskilled workers. Trainees were assigned to simple repetitive tasks rather than given the opportunity to develop different types of skills; in addition the training was often provided by inexperienced trainers. Many students were dissatisfied with the work environment and discouraged by their workplace experience and as a result moved to tertiary education instead of seeking a job after their VET high school studies.

Currently, workplace training negotiated individually between local VET institutions and firms may be biased towards firms' needs and prepare students mainly to work in a given enterprise. It is not clear how well the interests of a few local companies and individual VET institutions correspond to the needs of the wider labour market. A fragmented and unclear system also imposes additional costs on students by increasing the risk of a poor career choice. In Korea, household spending on education is substantial in comparison to other OECD countries (see Figure 2.4) and errors are therefore very costly.

Figure 2.4 Household expenditure on education



1. 2004 instead of 2005.

Source: *www.oecd.org/edu/eag2008*.

Weak employer interest in the skills developed through high school VET

Some employers the team talked to were clearly not interested in the skills developed in high school VET. This may be because the companies require skills beyond the high school level or because tertiary graduates are preferred to high school VET graduates, even for vacancies nominally requiring high school qualifications. (Korea and Japan have the highest rates of tertiary graduation in the OECD; OECD, 2008a). Firms may prefer the tertiary diploma to high school VET education for status reasons rather than because of the competences required.

Lack of incentives for companies to invest in training of students

As noted in Section 2.1, the Korean labour market gives employers little incentive to train employees. High employee turnover also reduces employers' incentives to provide workplace training to trainees and apprentices, since it reduces the value of such training for sifting potential recruits. In addition there may be a lack of training capacity and culture in firms that can be harnessed for initial training. Korea's obligatory two-year military service is an additional disincentive, as companies cannot hire male trainees following workplace training.

There are apparently no national funding arrangements for companies that provide training to students in initial VET. The Employment Insurance System (EIS), is only available to firms that train their own employees;[13] companies providing training to students in high schools and tertiary VET are not eligible where financial incentives for workplace training are provided by the government, they are targeted at schools, not to companies. Perhaps as a result, there is an expectation that individual VET institutions will bear the costs of workplace training, an expectation that is greater than in other countries reviewed. For example, VET institutions that co-operate with firms are expected to cover the cost of specialised equipment and materials relevant to these firms' production methods and to provide firm-specific training to students prior to their workplace training (Jung *et al.*, 2004). In one enterprise the visiting team was told that the advantage of the partnership with the polytechnic was that the polytechnic purchased the most recent and expensive machines for training purposes. However, the overall picture may be mixed. The visiting team also heard about firms contributing to VET by providing VET institutions with machines and tools.

Recommendation 2

Improve the provision, quality and relevance of initial workplace training by strengthening incentives for partnerships between VET institutions and firms and by developing and implementing quality standards.

Supporting arguments

There are three arguments for this recommendation. First, workplace training can be beneficial to both employers and students. Second, workplace training would help to

13. EIS is a levy-grant system to which employees and employers contribute. Their contributions are refunded upon participation in training. The size of the levy varies depending on the size of company (Lee Young-Hyun, 2007).

adjust VET provision and therefore the supply of skills to labour market demand. Third, clearly established standards of workplace training would secure its quality.

Workplace training can be beneficial to employers and students

Workplace training has many advantages. Skills such as teamwork and communication are better learned in an authentic work environment. Dealing with an angry customer or managing tense relationships with colleagues at work are not easily simulated in school workshops (Aarkrog, 2005). Training in a company, using the most up-to-date technologies and equipment together with the personnel able to handle these technologies, can be cost–effective, as most vocational institutions cannot afford this.

More effective recruitment is one potential benefit of workplace training. Training allows employers to learn about trainees' ability and skills and recruit those they consider the most able. Hiring through training is also less costly than external recruitment (Dohmen, 2007). The benefits achieved from screening potential employees' productivity increase in some labour markets, *e.g.* in markets in which employer can pay salaries below individuals' productivity due to imperfect information flows or high mobility costs (see for example Brunello and De Paola, 2004). For example, given the nature of German labour market regulations reducing apprentices and employees mobility, German companies reap benefits from apprenticeship training by using it to screen potential recruits (Dionisius *et al.*, 2008). In Korea's labour market, with its high rates of labour turnover, this "recruitment benefit" may be somewhat smaller than in some other OECD countries.

Companies may also benefit from students' work during training. Admittedly, this benefit to employers may sometimes lessen the quality of training. If students are used as cheap labour for unskilled tasks, this may be useful to employers, but it does not provide much useful training to students. Some authors distinguish between enterprise training for substitution reasons and companies using training as an investment. Those that train for substitution reasons tend to use trainees as unskilled workers in order to maximise benefits (participation of students in production work) and minimise the costs arising from provision of training in a wide range of occupational skills (Backes-Gellner and Mohrenweiser, 2006). There is some evidence of a link between company motivation to train and quality training. For example, Smits (2006) observes that in the Netherlands the quality of training measured in terms of input is lower in companies that use training for current productivity.

The evidence from Switzerland offers a counter-example. In Switzerland two-thirds of training firms realise net benefits from training by the end of the apprenticeship period (*e.g.* Mühlemann *et al.*, 2006). Interestingly, Swiss companies manage to outweigh their costs by allocating apprentices to tasks that would otherwise be carried out by skilled workers (for a comparison of tasks carried out by apprentices in Germany and Switzerland and the impact on companies' cost and benefits, see Dionisius *et al.*, 2008). Swiss companies typically aim to obtain a full return from their investment in apprentices by the end of the training period because high labour force mobility limits the value of apprenticeship as a recruitment tool.[14] Strong quality regulations mean that the provision of workplace training is relatively costly for employers and they have to recoup their

14. Retention rate of apprentices immediately after graduation is 70% in Germany and 36% in Switzerland (Euwals and Winkelmann, 2004; Wolter *et al.*, 2006, in Backes-Gellner and Mohrenweiser, 2006).

investment by having the apprentices carry out high value skilled work (Dionisius *et al.*, 2008).

The Korean labour market, like that of Switzerland, is characterised by high labour turnover so that companies that train run the risk of losing their workers. This implies that most companies, especially SMEs, would be tempted to replace unskilled workers with students. Lee Young Hyun (2007) confirms that Korean training companies are generally interested in immediate business benefits. However, in line with the findings from the Netherlands (Smits, 2006) and contrary to the Swiss evidence, workplace training in Korea is of rather poor quality. The strong quality assurance that prevents Swiss companies from using students mainly as a cheap and relatively unskilled labour force does not exist in Korea.

Workplace training may also smooth the transition to the labour market. Currently companies complain that young people entering employment directly after school require considerable training before they start a job (Grubb *et al.*, 2006; Jung *et al.*, 2004). According to a survey carried out by the Korea Employers Federation (KEF, 2005 in Park, 2007) among 536 companies (100 workers and over), new university graduates typically need more than 20 months of training before they are placed in a real work situation at a total cost of approximately KRW 107 million in large companies and KRW 39 million in SMEs (Park, 2007). Practical training in a company as part of initial VET may facilitate the transition from education and training to the labour market and reduce the cost of training graduate recruits, although empirical evidence on the labour market outcomes of VET with workplace training is admittedly somewhat mixed. In Germany, economic activity was higher among apprentice graduates (who have received workplace training) than among university graduates and graduates from school-based VET (who typically lack workplace experience) although the duration of unemployment was longer for apprentice graduates than for other groups[15] (Winkelmann, 1996). In Austria, Hofer and Lietz (2004) found that apprentice graduates (upper secondary level) have less risk of unemployment and higher earnings than unskilled workers, although their labour market performance is weaker than that of upper secondary graduates.[16] In Korea, the Youth Job Experience programmes involve practical training in firms for students and unemployed 15-to-29-year-olds, with tertiary students accounting for 83% of all participants. Evaluation of the programme shows that student participants needed less time to find a job after graduation and stayed longer in their first jobs than those without work experience during their studies (OECD, 2007a). However the programme reached relatively few students and participation has been decreasing (MEHRD and KEDI, 2005; OECD, 2007a). Jung *et al.* (2004) argue that the low availability of workplace training in Korea forces students to seek costly additional training from private providers.

Adjusting VET provision to labour market demand

One merit of workplace training in initial VET is that it is a direct reflection of employers' needs.[17] Employers' willingness to offer workplace training can therefore be

15. Based on data for the 1984-90 sample.

16. The study does not control for students' ability and selection mechanisms.

17. Some research (*e.g.* Bailey and Hughes, 1999) mentions philanthropic reasons and reputation, such as support to the employer's community, as a driver of a firm's engagement in training, though these reasons seem to be secondary.

used to guide VET provision and align it to labour market needs. The implication of the persistently weak engagement of employers in practical training of VET high school students might be a progressive reduction of places in high school VET programmes.

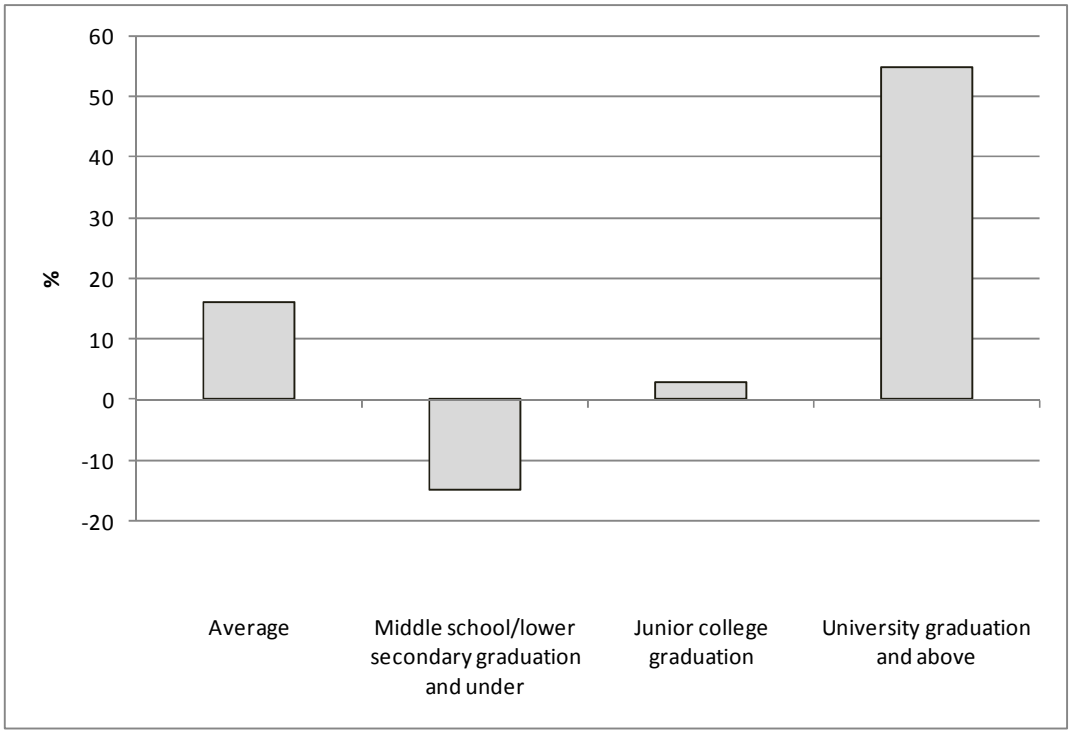
The provision of VET should also reflect students' preferences, since employers' needs may not correspond to students' interests. Wages, career prospects and work conditions affect students' choice of educational programme (Borghans, De Grip and Heijke, 1996). Students are understandably unwilling to undertake studies that lead to difficult, badly paid jobs with poor career prospects, even if that is what is demanded by employers. In Korea the number of students choosing high school VET has been steadily decreasing, possibly because it leads to unattractive jobs, mainly in the SMEs sector. Better provision of workplace training will only make high school VET more appealing if there are parallel efforts to improve working conditions in the jobs targeted by high school VET. As this would imply additional costs to companies, they might shift their attention to other sources of labour such as immigrants in order to fill vacancies that are not attractive to young Koreans.

During an economic downturn companies typically become more reluctant to offer workplace training since they need to cut costs and have less interest in the output of trainees or in trainees as potential recruits. The upper secondary system might respond by providing more general education and shifting job-specific training to later stages in the education and training process. This would be in line with evidence that students tend to postpone labour market entry and spend longer in formal education during a recession (*e.g.* McVicar and Rice, 2001; Lewis and Koshy, 1999). Another possibility is for government to invest in upper secondary VET in order to train skilled workers for employment in the public sector and/or in areas that are strategic for economic development in the long run. Before increasing spending on high school VET, the government should undertake a strategic economic assessment of whether investment at high school level is the best way of improving the skills of the Korean labour force.

At tertiary level the availability of workplace training in companies could guide students' choice of programmes and institutions. This is especially relevant for junior colleges, where students cover most tuition costs. In general annual fees in junior college are about 80% of those in universities. The wage premium for junior college education is significantly below that for university education (Figure 2.5). In the OECD review of tertiary education in Korea, Grubb *et al.* (2006) point out that basic information about quality is lacking and incentives to improve quality are weak. To make good choices students require better information and guidance on available programmes and providers. This may include indicators on the labour market performance of graduates and information on workplace training by programme and provider, *e.g.* on workplace training availability, its duration and the resulting qualifications. Information on workplace training would highlight employers' needs and indicate which institutions succeed in co-operating with industry. This information might be collected by the government and made available to students, parents and institutions, as recommended by the OECD service regulatory reform in Korea (OECD, 2007b). Better information on the availability of workplace training might also encourage junior colleges to develop good workplace training programmes.

Figure 2.5 How wages depend on education, 2005

Upper secondary = 0



Source: KRIVET (2008), "Responses to the National Questionnaire", unpublished.

Clearly established standards of workplace training would secure its quality

"Standards" of workplace training imply a binding set of rules that define how training is provided: its content and duration, how competences are assessed, and requirements for trainers' qualifications. Such rules should guarantee minimum standards for all workplace training. Many countries apply such standards. Swiss companies need to meet quality standards to be licensed to take apprentices. Permission to provide apprentice training may be withdrawn in Germany and Denmark if the company offers sub-standard training (Ryan, 2000). Ryan also argues that in the United Kingdom lack of regulations governing apprenticeship provides wider scope for substandard training than in countries with statutorily regulated apprenticeships.

As pointed out above, the quality of workplace training in Korea is poor. The classical economic argument (*e.g.* Becker, 1962, 1964) is that firms are not inclined to bear the costs of training for transferable skills in perfectly competitive markets, since these skills may be used by an employee in another company. This implies that companies will tend to offer firm-specific rather than general occupational training. (General occupational training provides occupationally related skills that are transferable to companies in the same field.) In practice, because of all kinds of market imperfections, firms often provide general training, but Becker's point is particularly relevant to Korea and to its SME sector given the high employee turnover in the Korean labour market.

In Korea, training firms' incentives to provide narrowly defined and often firm-specific skills (because they fear that more general skills will be poached by other employers) should be balanced by rules requiring provision of general occupational skills as well. As companies may view the introduction of standards as an additional burden, it would be necessary to support employers and encourage them to see standards as part of a broader upskilling of the firm and its workforce. Coherent and uniform standards applicable to all workplace training would guarantee comparable outcomes regardless of where the training is carried out. Clear standards should improve the overall perception of VET, especially at high school level (currently considered by some as a low quality option).

The government is currently piloting "vocational meister schools" (MEST, *Vocational Meister Schools Planned*, press release, 13 June 2008). Its aim is to revitalise high school VET by making it more responsive to industry needs and by emphasising strong workplace training. In this scheme, schools will have considerable autonomy to adapt quickly to changing industry requirements. While decentralisation of responsibilities to boost local innovations has many advantages, it should be balanced by common national rules and standards to guarantee VET quality (see, for example, Wößmann *et al.*, 2007).

Implementation

The establishment of good quality workplace training should improve the overall quality of VET and increase its value to students. This should not be at the expense of core competencies in general subjects such as mathematics or Korean in VET programmes. In other words, good quality and attractive VET needs to include both well taught general and occupation-related skills. Emphasis on general education in high school VET is particularly important in Korea given the high proportion of high school VET students proceeding to higher levels of education.

Create incentives for companies to provide workplace training

As discussed above, SMEs may face various obstacles for training both their own employees and students in initial VET. Co-operation by companies is one way of addressing these challenges. The SME Training Consortium, launched by the government, aims to increase the number of SMEs providing training to their employees and ultimately to improve skills in the SME sector. Local chambers of commerce and industry assisted in setting up the consortium, which has established an information network among members, conducted training needs surveys among SMEs, and planned training activities, among other things. Free riding was inhibited by grouping SMEs from the same region and sector in the consortium. Lee Young Hyun (2007) argues that this initiative diminished the risk of poaching of trained workers and boosted training in the SME sector. If so, it may also provide a potential framework to support initial VET in SMEs which may see the advantages of taking trainees as a way to screen future recruits due to the lower risk of poaching.

Evidence from other countries shows that for SMEs common strategies often prove more effective than individual firms' efforts to develop and provide training. For example, in Norway, Switzerland and Australia, training is sometimes organised by bodies that group several companies that could not provide good training on their own (see Box 2.1).

Box 2.1 External bodies involved in workplace training

Australia. Group training organisations (GTOs) are not-for-profit organisations supported by public authorities, with some charges to host employers. The role of GTOs is to employ apprentices and hire them out to host employers. They sometimes focus on a particular industry or region. The tasks performed by GTOs include:

- Selecting apprentices to suit the needs of employers.
- Arranging and monitoring training both on and off the job.
- Taking care of the administrative duties involved.
- Ensuring that apprentices receive a broad range of training experience (if necessary, apprentices are rotated from business to business).

For research papers on GTOs see www.ncver.edu.au/publications/bytheme.html.

Norway. Training offices *(opplæringskontor)* are owned by companies and usually concern specific trades. They work actively to identify potential training companies and establish new apprenticeship places, supervise companies with apprentices, and train staff involved in the tutoring of apprentices. Many training offices organise the theoretical part of the apprentices' training. They often sign the apprenticeship contracts on behalf of smaller training enterprises, thereby becoming accountable for completion of the training and its results (Norwegian Directorate for Education and Training, 2008).

Switzerland. The Swiss government established through the 2004 Act on VET the vocational training associations (*Lehrbetriebsverbünde*). These are associations of two or more training firms that share apprentices whose training is organised across several firms on a rotating basis. The aim is to allow firms that lack the capacity and resources to provide full training of an apprentice to be engaged and to decrease the financial and administrative burden on individual firms. One of the firms in the association has overall responsibility for the training of the apprentice, signs the apprenticeship contract and represents the association externally. The Confederation subsidises the *Lehrbetriebsverbünde* with initial funding (*Anschubfinanzierung*) during the first three years for marketing, administrative and other costs necessary to set up the joint training programme. After this initial support, the training associations are supposed to be financially independent. The associations are organised under an umbrella association (*Vereinigung Lehrbetriebsverbünde Schweiz*: *www.verbuende.ch/*). A 2008 evaluation, *Resultate Evaluation Lehrbetriebsverbünde*, OPET, Bern) found positive results in that a majority of firms in training associations would not have engaged in training otherwise.

Given all the disincentives to training in Korean SMEs, there are good arguments for setting up funding mechanisms to get round the problem of poaching. Korea has a universal training levy fund to which all employers contribute according to firm size, with those that train their employees getting a subsidy (Yoon Jin Ho and Lee Byung-Hee, 2005, PowerPoint© presentation).[18]

In some other countries companies that provide workplace training to students can claim reimbursement of their training expenses from the levy fund. This is not the case in Korea. The government should therefore consider reforming the scheme to make this possible. Subsidies to training companies should be offered only to firms that train according to quality standards. Shifting funding to companies should decrease public expenditure on equipment and facilities in school workshops, as an essential part of work-

18. In spite of these mechanisms, large firms tend to offer more training than small companies.

related training will be carried out in workplaces. Examples of funding arrangements for workplace training in other countries are presented in Table 2.3.

Table 2.3 Funding arrangements in workplace training

	Public funding		Firms' collective contribution (*e.g.* training levy)	Employers' contribution to VET		
	Direct subsidy	Tax deduction		Training equipment	Salaries of VET trainers	Travel expenses of a trainee
Australia	No	Yes	No	Yes	Yes	Yes
Austria	Yes	Yes	In some sectors	Yes	Yes	Yes
Denmark	No	No	Yes	Yes	Yes	No
Finland	Yes	No	No	-	-	-
France	No	Yes	Yes	Yes	Yes	No
Norway	Yes	No	No	Yes	Yes	Yes
Netherlands	No	Yes	-	Yes	Yes	Yes
Switzerland	No	Yes	In some sectors	Yes	Yes	Yes

Source: OECD (2008b), "The OECD International Survey of VET Systems: First Results and Technical Report", unpublished.

In Korea upper secondary male students who do not continue to tertiary education are required to serve in the armed forces after completing their studies. This may discourage companies from training since it makes the recruitment of former trainees less straightforward. For students in customised education, where the last year of upper secondary studies takes place in a company, their military service can be partly or completely waived depending on the time spent with the company after the end of their studies. The government should encourage flexible arrangements in this area in other high school VET programmes with workplace training.

To address the issue of poaching, students in "customised education" are obliged to work for two years in the company in which they were trained. Such a practice might be adopted in other VET programmes with workplace training, but as it would oblige the student to waive the normally basic right to leave a poor employer, the quality of the training would have to be guaranteed. Students would also have to be able to complain to an independent arbitrator if they are unhappy with training quality.

Set up a legal framework

In most countries that offer workplace training, the student, the employer and/or the VET institution and other relevant bodies sign a training contract setting out the content and duration of the training, the student's remuneration and social security arrangements. The absence of a contract makes it harder to ensure adherence to quality standards. Box 2.2 shows contractual arrangements for workplace training in Australia and Austria.

Box 2.2 Contracts for workplace training

In Australia, the Australian Apprenticeship/Traineeship Training Contract is a legally binding agreement between the employer and the apprentice. A representative of the Australian Apprenticeships Centre is required to be present at the signature of the contract, and advises both parties on their rights and responsibilities as outlined by the National Code of Good Practice; and ensures that the apprenticeship is appropriate to both parties and that they have received relevant information. The training contract outlines the employer's obligation to employ and train the apprentice; provide the relevant wages and conditions; and ensure that the apprentice receives adequate facilities and supervision. Employers need to submit a training plan, which must be endorsed by the training provider (VET institution). The contract stipulates a probationary period, during which either party can terminate the agreement. Upon completion of the probation period, only by mutual agreement is it possible to transfer, suspend, cancel or vary the contract.

Source: *www.training.com.au/portal/site/public/menuitem.7e75abb80a4e4690f9fa5a1017a62dbc/.*

In Austria, a training contract, concluded between the host company and the student, forms the basis of the training relationship. The student (apprentice) receives health, accident, pension and unemployment insurance. The training relationship is regulated by labour and social laws, as well as by particular employee protection regulations for young people. Apprentices are entitled to a salary (*Lehrlingsentschädigung*), which is determined through collective bargaining and its amount varies among occupations. The training relationship finishes at the end of the training period as defined by relevant regulations.

Source: *www.bmukk.gv.at/schulen/bw/bbs/berufsschulen.xml#toc3-id4.*

2.3 Improving the skills of VET teachers

Challenge

In VET high schools, the teaching profession faces three main challenges. There is little evidence that teachers have adequate knowledge of the workplace, the career structure does not encourage those with industrial experience to enter the teaching profession, and the number of VET students is declining.

Teachers' qualifications in high schools are established by the Ministry of Education, Science and Technology. VET high schools have two types of teachers: teachers of theoretical subjects and teachers of practical skills – VET teachers.[19] The former must complete a four-year course in an institution which provides teacher certificates. The latter complete the courses related to their VET subject in junior college and obtain an

19. There is no standard nomenclature for professionals working in VET across OCED countries. In other review documents VET trainer refers to a person teaching practical skills, regardless of whether training is provided in VET institution or in workplace training in companies; VET teacher refers to teachers of VET theory (*e.g.* electricity in automotive programmes) in VET institutions and in the workplace. In this report, to be consistent with the Korean context, practitioners teaching practical skills in VET schools are called VET teachers. No distinction is made between teachers of VET theory and teachers of other theoretical subjects (*e.g.* mathematics, Korean).

associate teacher certificate by passing an examination. Their status is lower than that of a regular teacher. Work experience in the relevant area is not currently a requirement for VET high school teachers (Han and Kim, 2002). To become a permanent teacher in a public school the holder of a teacher certificate has to take the Teacher Employment Examination conducted by local educational authorities. This includes written tests, a brief interview and a short assessment of instructional ability (Coolahan *et al.*, 2004). In private schools, teachers are employed by principals. Private school teachers do not have the same formal status as teachers in public schools but in practice there are no differences in terms of rights, duties, and responsibilities (Han and Kim, 2002, p. 45).

In junior colleges and polytechnics, research and teaching experience are the main criteria for the recruitment of faculty members (KEDI, 2006). Work experience is not formally required, but the team was told that in many tertiary institutions relevant work experience was strongly valued. Polytechnics for example employ staff with trainers' licences at industrial sites[20] (Lee Young Hyun, 2007). Tertiary institutions also have the option of hiring practitioners from companies to teach students practical skills. They therefore have more freedom in recruiting than high schools, although the degree of delegated authority for the appointment of academic staff in tertiary private and public institutions varies. Private institutions have more autonomy in this respect than national and public institutions whose staff have the status of civil servants. The OECD review of regulatory reform in Korea reports that the government increasingly delegates the authority to recruit to national and public tertiary institutions (OECD, 2007b).

High school teachers' participation and performance in in-service training programmes affect their promotion and wages. Training aims to improve teachers' knowledge of education theory and methodology and their classroom performance and is provided in educational and training institutions.[21] Other forms of in-service training (*e.g.* on the curriculum and information technology) are available to teachers, but this training is voluntary and teachers may be asked to cover some of the costs (Coolahan *et al.*, 2004). The extent to which in-service training focuses on teaching of VET subjects and VET practical skills is unclear. The visiting team heard of some schools co-operating with industry to update the occupation-relevant skills of their VET teachers, but this mainly involves visits of industry experts to schools and training by industry on how to use new equipment purchased by schools. In sum, VET teacher training for high schools currently appears to give little emphasis to knowledge of the workplace and industry requirements. By contrast, research evidence (Choi *et al.*, 2001) and information collected during the visit provide good examples of teaching staff from polytechnics and junior colleges carrying out industry-based training to update their skills and learn about changes in the sector.

The current career structure for high school teachers does not encourage VET teachers to gain relevant industry work experience or those with practical experience in industry to become VET school teachers. Prospective VET teachers go through a lengthy, rigid and costly process to obtain the social status and employment security of teachers (Han and Kim, 2002). High school teachers' salaries are set centrally by the government. Salaries increase significantly with seniority, with the salary after 15 years of experience

20. The requirements and the paths to becoming a VET teacher in school and a trainer in a company are different.

21. MEST, Teachers' Education and Qualifications, *http://english.mest.go.kr/main.jsp?idx=0201090101*.

1.7 times higher than the starting salary compared with an OECD average of 1.4 (OECD, 2008a, Table D3.1). While teachers' salaries in Korea are relatively low in comparison to private sector salaries for those with similar levels of education (Han and Kim, 2002), advantages such as guaranteed lifetime employment, an early retirement age and free time are significant (Coolahan *et al.*,2004). Teachers who leave to work elsewhere lose their teacher status and related privileges and can only be rehired as temporary contract teachers unless they retake the national teacher examination. The incentives to become a VET teacher therefore encourage early entry into the teaching profession and long service. There is no incentive either to gain relevant work experience in industry prior to teaching or for highly skilled employees in industry to join the teaching profession.[22]

These problems may be exacerbated by the sharp decline in the numbers of students in VET high schools. While the VET student population dropped by nearly half between 1999 and 2006, the number of teachers fell by only 13%. Changes in the VET programmes offered also affect the demand for teachers' skills. For example more technical and fewer commercial programmes require more teachers trained in technical subjects. The visiting team was told that this issue is addressed by retraining VET teachers whose skills are redundant for the VET programmes available. The team is not aware of the results of this training. Oversupply of VET teachers will make it more difficult to create room for new recruits with industrial experience.

Recommendation 3

Encourage newly recruited VET teachers to have relevant work experience prior to entering the profession, particularly for high school VET. Require all VET institutions to ensure that VET teachers regularly update their skills in the vocational area, including their knowledge of technologies and working practices.

Supporting arguments

There are two arguments for this recommendation. First, relevant workplace experience improves the teaching of practical skills. Second, VET teachers need to update their knowledge and skills regularly to keep abreast of changes in working and production methods in industry. Relevant workplace experience improves the teaching of practical skills

Given evidence that VET teachers' skills improve student outcomes, VET teachers of practical skills should ideally have formal qualifications in the subject area, pedagogical training and relevant occupational experience. The importance of these elements in VET teachers' initial training varies across countries (see Box 2.3). In terms of academic standards, requirements for teachers in Korea are high. This contrasts sharply with the lack of any requirement for work experience.

22. The opportunity cost for employees rises if wages in their companies are based on seniority and if work experience gained in the company is not transferable to school.

Box 2.3 VET teacher education in Norway and Denmark

In Norway there are two possible paths for VET teachers. First, three years at University College, prior to which candidates should have a trade- or journeyman's certificate, work experience and qualification for higher education. During the course, the student follows 12 weeks of pedagogical practical training in a school or other training institution. In order to strengthen the vocational breadth of their competences, the students must also follow up to 12 weeks of practical training in co-operation with an enterprise within the chosen upper secondary programme. Second, one year practical pedagogical education (*Praktisk pedagogisk utdanning*): candidates are required to have either a craft- or journeyman's certificate or other completed upper secondary education, plus a certificate qualifying the student for higher education/non-formal or informal learning, plus two years of theoretical education in the trade, plus at least two years' work experience following the trade- or journeyman's certificate. Those with professional bachelor's or master's degrees and at least two years of relevant work experience are also eligible to enrol in the pedagogical training.

In Denmark, work experience is at the core of VET teacher preparation. A candidate for a post as a VET teacher is required to have relevant apprenticeship training and five years of work experience. Prior training in pedagogy is not necessary but can be started after beginning teaching (Sören, 2007).

Jung *et al.* (2004) show that VET teachers in Korea are not well prepared to teach practical skills. Lack of relevant work experience is very possibly a reason. Studies carried out in the United States found that when VET teachers lack occupational experience students' achievement suffers, with occupational experience being particularly beneficial to novice teachers (see the literature review in Lynch, 1998). VET teachers of practical skills who go through tertiary education with no "hands-on experience" may find it difficult to teach students about the working environment; soft skills such as teamwork, communication, dealing with conflicts and knowledge of company culture can be only partly developed in a tertiary institution. VET teachers who lack work experience may also be more theory-oriented in their teaching and neglect practice as a way of skills development. An Australian case study (Lugg and Saltmarsh, n.d.) notes that teachers without work experience tend to separate "head and hand knowledge", as illustrated by an example: "During the class led by a teacher without employment in the relevant industry students were learning how to identify components and demonstrate some aspects of power tools. The tools were not plugged in and students were not invited to touch them. Instead they were asked to complete diagrams of the tools and label their parts." As reported by Harris, Simons and Bone (2006) students best learn occupational skills through "hands-on" experience and trial and error. Teachers who worked in industry bring with them not only their practical knowledge but also their personal relationships with their previous colleagues. These relationships support co-operation between VET institution and industry, including the arrangement of workplace training for students. In addition, according to Australian evidence, work-relevant qualifications of VET teachers in secondary schools can improve industry's perception of the quality of VET programmes (Spark, 1999, in Dalton and Smith, 2004).

VET teachers of practical skills need to regularly update their knowledge of the modern workplace

VET needs to adapt quickly when new production methods and working practices are introduced in industry. VET teachers therefore have to be aware of new technologies

applied in industry and their impact on working and production methods, as well as of the generic skills required in the workplace in order to link students' learning to the labour market. In many countries keeping VET teachers abreast of these changes is a challenge as their ties to enterprises diminish significantly after they enter the teaching profession. While in service, VET teachers have little opportunity to be in contact with industry as part of their work (Dalton and Smith, 2004). Training of VET teachers in Korea is an even greater issue as many had no relevant work experience prior to their employment in schools.

VET teachers can update their skills either through participation in courses organised by educational and training institutions or through direct contacts with industry. The latter route, fostered by the creation of links between VET institutions and workplaces, is a relatively cost-effective way to retrain VET teachers, as it relies on existing structures and knowledge. Learning partnerships between VET teachers in VET institutions and trainers in companies was evaluated by the Economic Information Office in Finland as "one of the most effective and economic means of developing teacher's professionalism" (Cort, Härkönen, Volmari, 2004).

Implementation

This recommendation is designed to enhance the practical skills of teachers in VET subjects in VET high school. While this is important, implementation of this recommendation, it should be emphasised, must not be at the expense of general subject teaching. As previously noted (see Section 2) many VET high school graduates wish to continue their studies at tertiary level and in order to do this, they need good general education.

Work experience for prospective teachers

More industry training for those studying to be VET teachers, or simpler paths for those with work experience, can help to develop more occupationally relevant experience in the VET teacher workforce. There are various ways of encouraging this. Relevant work experience might reasonably count towards teacher qualifications; for example, it could be recognised and/or rewarded in the teacher employment examination (for example with additional points). This would give tertiary institutions that educate prospective VET teachers an incentive to seek training places for their students in companies. This type of initiative might be first introduced as a pilot and if successful scaled up.

In areas in which VET teachers lack sufficient qualifications and knowledge, flexible ways of hiring practitioners from industry on temporary contracts might be encouraged. Some schools and teachers might be unhappy with this. Han and Kim (2002) report that the government had intended to bring more practitioners into VET schools but the unions opposed this on the ground that "it would hurt teacher professionalism". The visiting team was told that some schools worried that accepting industry practitioners as teachers without full formal qualifications would lower the status of VET schools.

Despite the potential opposition, the context is favourable. There is an over-supply of upper secondary teachers (Han and Kim, 2002), while a falling youth population implies reduced demand for teachers. The risk of any shortage in teachers as a result of more stringent requirements for work experience is therefore low.

Evaluation and comparison of occupationally relevant qualifications would have to be undertaken carefully. US evidence shows that while hands-on experience improves VET teachers' ability to teach practical skills, the length of work experience in industry makes little difference, and may even be associated with lower teaching quality beyond a certain threshold (Lynch, 1998). The nature of the work experience may therefore be more important than its length. In countries where occupational qualifications are recognised and valued on the labour market, a certificate or a licence provides information on the level of skills. Often in these countries prospective VET teachers are required to have formal occupational qualifications in addition to relevant work experience. Korea also has an occupational qualification system, but it is not clear whether it gives a strong enough signal of occupational competences to be used on its own as a selection criterion for becoming a VET teacher. More "traditional" methods of evaluation, such as interviews, might be applied in any assessment of the occupational skills of potential VET teachers.

In-service training

Given the present oversupply of teachers, upskilling of the workforce will have to occur mainly through in-service training rather than additions to the workforce. VET high schools can usefully learn from practices at tertiary level, such as the exchanges of knowledge and staff between VET tertiary institutions and companies. Participation in training in practical skills should be encouraged and facilitated through formal arrangements. Teachers' participation in training will always tend to be low if there is no relevant framework. Dalton and Smith (2004) observe that VET teachers often think they are too busy to update their skills and knowledge. In Korea, development and updating of work-related knowledge may be encouraged by linking this to the wage and promotion system. To make the system more flexible and adapted to local needs, more responsibility for staff training might be delegated to individual schools.

2.4 Qualifications and assessment procedures

Challenge

Parallel systems of qualifications with few links between them

Upon completing a VET programme, students in vocational high schools, junior colleges and polytechnics receive "graduation degrees" delivered by the Ministry of Education, Science and Technology (MEST). In VET high schools the curriculum is developed by individual institutions following guidelines from MEST and the metropolitan and provincial offices of education. Guidelines for the general content of the programmes (*e.g.* courses in mathematics, Korean language) are relatively strict,[23] while institutions have some room to adjust the vocational content of the curriculum. Employers are not involved in the elaboration of these guidelines, although they may in practice negotiate the adjustment of VET content to their needs with individual institutions. Junior colleges have more freedom to define curricular content.

23. Although recent reform of the curriculum (the Seventh Curriculum) extended schools' autonomy in terms of curriculum management, there is still a strong centralising tendency (Han and Kim, 2002).

A system of national technical qualifications (NTQs) was developed under the responsibility of the Ministry of Labour. The Ministry of Labour, in co-ordination with 15 other ministries, is also responsible for the national technical standards, which underpin the NTQs. Human Resource Development Service of Korea (HRD Korea) develops standards and elaborates and conducts tests for the acquisition of qualifications (OECD, 2005a).

Interviews conducted during the review visit suggest that employers have limited confidence in the Korean VET system and, consequently, in the degrees awarded. At least two characteristics of the current system contribute to this. First, there is no systematic means of ensuring that VET curricula reflect NTQ requirements and little co-ordination of VET curricula and NTQs (Lee and Jung, 2005). This is to a great extent the result of weak collaboration between MEST and the Ministry of Labour. Second, quality assurance mechanisms in the formal VET system are weak. During the review visit stakeholders reported that quality control mechanisms are weak in vocational high schools. The OECD reviews of tertiary education (Grubb *et al*., 2006) and regulatory reform (OECD, 2007b) found that quality assurance mechanisms in junior colleges and polytechnics are weak and provide recommendations for strengthening them. In other words, there are few mechanisms to ensure that students have acquired a well-defined set of skills before obtaining a degree.

Vocational high schools, which largely rely on MEST guidelines for the curriculum, are especially affected by these problems. Insufficient attention to labour market needs represents a challenge to their viability. Strengthening the relevance of VET to the labour market would be very difficult without improving links between MEST and the Ministry of Labour, since the latter is in charge of co-ordinating the involvement of employers.

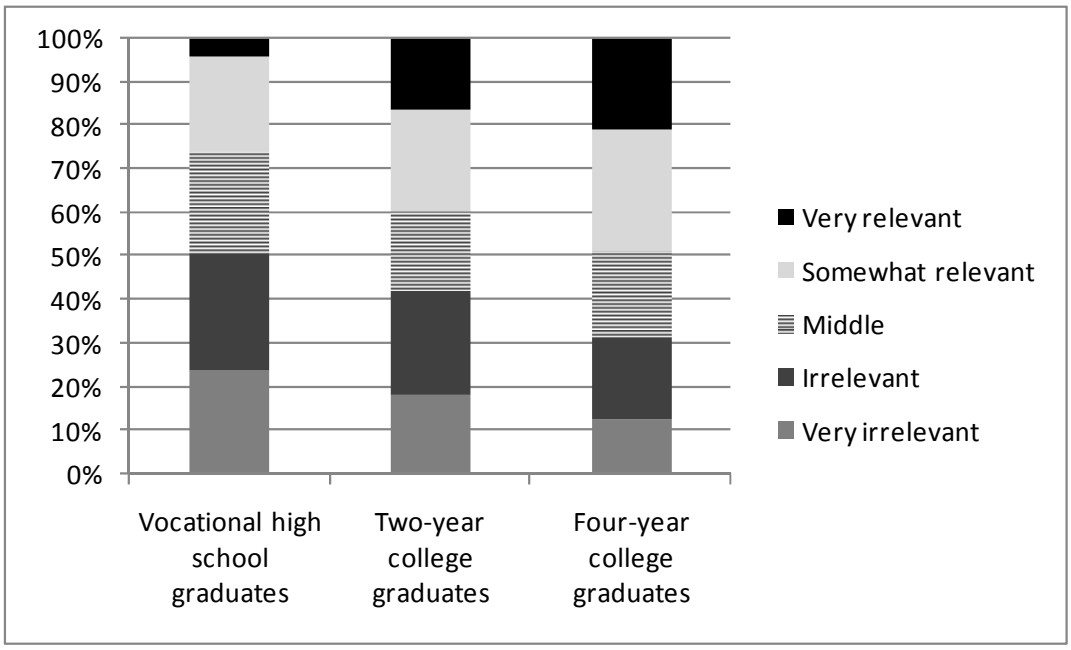
The problems created by the parallel system of degrees and licensing exams have been underlined by previous OECD reviews of Korea (on adult learning, see OECD, 2005a; on tertiary education, see Grubb *et al*., 2006). For VET, the existing system raises concerns about the relevance and signalling value of VET degrees in the labour market and about its efficiency.

Limited relevance and signalling value of VET degrees in the labour market

Currently individual VET institutions aim to adjust their curriculum to employer needs, often following consultation with local employers. While this allows VET institutions to respond to local needs, it also allows for wide variation among institutions in terms of the skills covered. When combined with weak quality assurance arrangements, it means that potential employers have little certainty regarding the skills possessed by someone with a graduation degree, and the level and quality of those skills.

The current system leaves room for considerable variation among VET institutions. Some schools may succeed in meeting employers' needs, while others may fail. Data in Figure 2.6 show that the competences associated with VET programme specialisations have limited relevance to subsequent job, indicating a mismatch between labour market needs and the content of VET programmes.

Figure 2.6 Degree of match between occupation and VET programme specialisation by educational level



Source: Office of Statistics (2003) in KRIVET (2008, p. 46), "Responses to the National Questionnaire", unpublished.

When individual institutions adapt their curriculum to employers' needs on the basis of local consultation, they typically adapt it to a particular firm or small group of firms. This increases the risk that the skills acquired will be highly firm-specific and limit future inter-firm professional mobility. In some institutions graduation degree is delivered upon completing the programme and does not require assessment of vocational competencies. Some institutions adapt their curriculum to local firms' needs and test students' vocational competences with the involvement of firms. While this approach ensures that the graduation degree will be recognised by the firms involved, the degree will have limited recognition by other firms in the same sector.

Loss of efficiency in terms of time and money

VET institutions do not provide sufficient preparation for NTQ exams. Only some elements covered by the curriculum taught in VET institutions are recognised in NTQ exams. For instance vocational high school graduates are exempted from the written part of the corresponding level (*i.e.* craftsman) of the technical qualification examination. Often students have to prepare separately for the remaining part of their NTQ exam, typically through costly private tutoring over several months. This is wasteful both for students and for the educational system.

Recommendation 4

Derive the vocational part of the curriculum used by VET institutions from, or at least adapt it to, national technical standards of high quality which are relevant to industry needs. At the end of a VET programme students should be able to obtain two certificates: a graduation degree awarded by a VET institution; and, on the basis of an NTQ (national technical qualification) examination, a technical qualification. Given mixed evidence of the effectiveness of current NTQs, NTQs should be evaluated by the Ministry of Labour and reformed if necessary.

Supporting arguments

Three arguments support this recommendation. First, national technical standards can be a key tool for linking VET curricula to labour market needs. Second, convergence of VET curricula with NTQs should improve efficiency in the VET system. Third, good technical standards support the alignment of VET and labour market needs.

National technical standards as a way to help equip VET students with the right skills

The purpose of initial VET is to equip students with the skills needed by the labour market. National technical qualifications are intended to represent the set of skills required for different occupations. Aligning the curriculum in VET institutions with national technical standards will allow VET to equip students with the skills required by the NTQs. If NTQs adequately reflect labour market needs, this will improve the quality of VET, since the content of VET programmes will be more relevant to labour market needs. This can lead to better employment outcomes for VET graduates and thus help raise the status of VET.

An alternative way to equip young people with the skills and competences needed to acquire NTQs (without aligning VET curricula on the national technical standards) would be to provide those skills through training provided by firms to new employees (recent VET graduates), or by training programmes offered outside the formal VET system (*e.g.* private tutoring). However, reliance on firm-based training to employees would in practice mean that the workforce would be inadequately trained since, as discussed in Section 2.1, the Korean labour market generates a number of barriers to employee training. Even where employee training does take place, young people neither in education nor in employment would not have access to such training, while employees in SMEs and irregular jobs would have fewer opportunities to improve their skills (Chang Wonsup, 2002; Korean Ministry of Labour, 2006 in Lee, 2007). Private tutoring can be costly, and thus limit access for young people from disadvantaged backgrounds.

A well-designed national qualification system developed with the involvement of employers and a VET curriculum based on, or adapted to, national standards would substantially increase the signalling value of VET programmes to employers. If the curriculum were derived from national standards, the graduation degree would certify that students have completed a programme which should equip them with competences needed in the labour market.

Increased efficiency for students and the VET system

Aligning curricula in VET institutions with national technical standards would improve efficiency in terms of the time and money students invest in training. Students would use the time spent in VET institutions to learn job-relevant skills and prepare for the NTQ examinations. Upon graduation, they would be prepared to take the examinations rather than, as so often at present, be obliged to turn to private tutoring. Employers would benefit too, since the alignment of the VET curriculum with NTQs would increase the pool of skilled and immediately employable workers in the labour market.

The process of adjusting the curriculum to employers' needs would also be more efficient. The curriculum, devised with a view to national technical standards, would be developed with employers at sectoral level, rather than by individual VET institutions. These would have room to adapt the curriculum to specific local needs, but would not need to carry out the time and resource-consuming process of identifying labour market needs and constructing curricula to meet them.

Good technical standards are a precondition for successful alignment of VET and labour market needs

There is some evidence suggesting that NTQs yield limited wage returns on the labour market. A study analysing the economic payoff for individual investment in VET in Korea (Hawley and Paek, 2005) shows that, controlling for various background variables, the acquisition of a technical qualification (vocational training or certificate) is not significantly correlated with the earnings of academic or vocational high school graduates. Jeong (1995) reports that master craftsman qualifications (higher level NTQs) did not bring obvious returns in terms of tasks performed and promotion opportunities, which remained based on the educational level (two- *vs*. four-year college) and seniority. Similarly, the OECD review of adult learning in Korea (OECD, 2005a) reported that wages are based on seniority and job classifications and do not take NTQs into account. There are two possible explanations for this pattern. The first is that NTQs do not increase the productivity of employees and therefore do not lead to higher earnings. The second, which is consistent with observed practice, is that employers set salaries based on educational level and seniority rather than productivity. Lee Man-Khee (2008) provides a review of previous studies on returns to qualifications in Korea, which indicates mixed evidence. Kang (2002) argues that the signalling value of qualifications in Korea is low. For example, when recruiting new employees less than a third of employers take into account whether the applicant has a qualification or not.

Despite the apparently limited returns to wages, employees seem to attach some value to NTQs. Chang Hong-Geun (2002) reports that 75% of irregular workers would like to participate in training leading to an NTQ, and many graduates from VET institutions enrol in private institutions to acquire vocational qualifications (Halász, Sweet and Taguma, 2008). The fact that they are willing to invest in the acquisition of a qualification suggests that they expect returns from their training. However, Kang (2002) suggests that people do not seek to acquire qualifications in order to work in the relevant occupation but instead view qualifications as a "roundabout way" to acquire credit points. Credit points are then taken into account in their academic degrees, which are highly valued by society and in the labour market.

NTQs were not evaluated directly in the course of this review. But we note that our recommendation can only bring the expected positive results if national technical standards adequately reflect labour market needs and employers engage with the national technical qualifications system. The Ministry of Labour should assess whether NTQs adequately reflect labour market needs and reform them if necessary.

A strong framework for employer engagement, as recommended in Section 2.1, is crucial to ensure effective employer involvement in the development and continuous updating of standards. Employers should be consulted at sectoral level and participate in the elaboration of qualification procedures and criteria (*i.e.* they should define what competences are needed for each occupation). They should also be invited to sit on the assessment boards that deliver NTQs.

Implementation

Collaboration between MEST and the Ministry of Labour

Since MEST is responsible for vocational high schools and junior colleges, while the Ministry of Labour is in charge of the NTQ system, strengthening links between the formal VET system and NTQs requires co-operation between the two ministries. As discussed in Section 2.1, collaboration between MEST and the Ministry of Labour needs to be improved to ensure the effectiveness of many aspects of the VET system.

Alignment without merging degrees and vocational technical qualifications

In the Korean context it is preferable to align VET institutions' curricula and graduation degrees with national technical qualifications without seeking to merge them. During the review visit some stakeholders expressed concerns about the risks of making success in the NTQ examination a precondition for graduation. Many indicated that obtaining a degree from VET institutions is relatively easy, while obtaining NTQs seems difficult. For example, in 2005, the graduation rate from vocational high schools was 90% (KRIVET, 2008). In the same year, the pass rate in the craftsman (corresponding NTQ level) examination was 62% overall and 85% in the case of vocational high school graduates (MEST, personal communication, 7 September 2008). Between 1977 and 2002, only 21% of those who took NTQ exams were successful (Shin, 2005). Quality assurance mechanisms are weak in vocational high schools (as suggested by interviews conducted during the review visit and noted above) and tertiary VET institutions (as argued in the tertiary review of Korea, Grubb *et al*., 2006). Kang (2002) also argues that quality control in Korean VET is weak: graduation degrees are awarded simply upon completion of the programme and do not reflect labour market needs.

Full merger, in this context, would be likely to lead to undesirable outcomes. If criteria for graduation followed stricter NTQ standards, it would lead to much higher failure rates in VET institutions. This would create considerable tensions, owing to the low social acceptance of academic failure in Korea. The opposite risk would be a relaxation of the rigorous NTQ assessments in order to maintain high graduation rates. This would strongly damage the value and credibility of NTQs. Furthermore, it is not clear whether generic skills are well reflected in NTQs, which might put too much emphasis on job specific skills in VET studies in high school, and lead to poor preparation of VET students in general subjects.

In the light of these risks, it would be preferable to maintain the separation between the graduation degree and the NTQ in terms of assessment and certificate delivered, while aligning them in terms of content and timing. VET students might obtain two certificates: a graduation degree, which certifies completion of the course and attainment in certain subjects, and a national technical qualification, which certifies competences related to a specific occupation. They could obtain the graduation degree even if they fail the technical qualification. The key element would be the link between these two elements in terms of content and timing: the curriculum would equip students with the skills required by NTQ examinations, which students would be prepared to take at the end of a VET programme.

Aligning the curriculum of VET institutions with NTQ requirements would not mean creating a one-to-one relationship between individual VET programmes and individual NTQs. Such a relationship would not be realistic, as the number of technical qualifications (over 600 NTQs and over 900 private qualifications, Korean Ministry of Labour, 2007, in Halász, Sweet and Taguma, 2008) is much larger than the number of VET programmes. However, even though NTQs are more specific than VET programmes, some of the required competences are relevant to several NTQs. For example, Kang (2002) indicates that the 600-plus NTQs are grouped into 26 occupational fields. The competences required for closely related NTQs can be covered in the relevant VET programmes.

Incentives for VET institutions to implement this recommendation

Alignment of curricula in VET institutions with NTQs might be achieved simply by making it a precondition for public funding in VET high schools and public junior colleges. Alternatively, a voluntary approach could create incentives, including non-financial incentives, to encourage institutions to implement this change.

Adapting curricula in VET institutions to NTQ standards may send a signal of quality to potential students and thereby act as a non-financial incentive. Korean students are insufficiently informed about the quality of available programmes and VET institutions. If information on the relation between the curriculum of a programme and NTQ standards were available to students, it would indicate to them which VET programmes can equip them with the skills required by national technical standards, thereby eliminating the need for private tutoring to obtain an NTQ. This would encourage students to choose these programmes. Such incentives would certainly be essential for junior colleges. Since about 90% of junior colleges are private and rely mainly on tuition income, incentives related to access to public funding would not be effective.

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Annex A

Background Information

1. Biographical information

Viktória Kis is a policy analyst at the OECD Directorate for Education, where she works on "Learning for Jobs" - the OECD programme of work on Vocational Education and Training. She is responsible for several country reviews and for analytical work on the quality of VET. Prior to this project, she worked on the Thematic Review of Tertiary Education and is the author of "Quality Assurance in Tertiary Education: Current Practices in OECD Countries and a Literature Review on Potential Effects". Before joining the OECD as a consultant to the World Bank she worked on the evaluation of a school grant programme in the former Soviet Republic of Georgia. She also co-ordinated a meeting of the "Global Learning Network of Producer' Organisations" at Rimisp – Latin American Centre for Rural Development in Chile. She holds a Master's degree in International Affairs from Sciences Po Paris and an M.Sc. in Educational Research Methodology from the University of Oxford. Viktória is a Hungarian and Vietnamese national.

Małgorzata Kuczera is a policy analyst in the OECD Directorate for Education where she works on "Learning for Jobs" - the OECD programme of work on Vocational Education and Training. She is responsible for several country reviews, and for analysis of the comparative characteristics of VET systems, and has presented the results of this work in many international contexts – including the 2nd High Skills Forum in China. Prior to this activity, she co-authored the OECD review of equity in education "No More Failures. Ten steps to Equity in Education" and has presented this work at many international and national events. During a traineeship at the European Commission she worked on issues of efficiency and equity in education. She has an M.Sc. in political science from Jagellonian University, Poland, and a Master's degree in International Administration from the University Paris I, Sorbonne-Panthéon. Małgorzata is from Poland.

Gregory Wurzburg is a senior analyst in the Education Directorate, Organisation for Economic Co-operation and Development. Currently responsible for OECD work on political economy of education reform; parental choice, school autonomy and system accountability; country reviews focused on drawing policy lessons from PISA; education of migrants; VET; co-operation with other parts of the OECD examining economic implications of education policy. Previously he was responsible for OECD work on the economics and finance of lifelong learning; also contributing to work on the policy lessons from PISA, the role of human capital in economic performance, implementation of lifelong learning, intellectual capital reporting in financial markets, labour market outcomes and educational attainment, and human resources and enterprise flexibility.

Greg is a former Director of Research and Operations for Youthwork, Inc.; Executive Director for the National Council on Employment Policy; Research Associate in the Center for Social Policy Studies, George Washington University; Program Analyst in government of Washington, D.C. He has published extensively. He holds a B.A. from Georgetown University (English and chemistry) and a MPhl from George Washington University (education policy, economics).

2. Programme of the review visits

Fact-finding visit, 19-22 May 2008

Monday 19 May, Seoul

Meeting with researchers and statistical experts in VET and in labour market from Korean Research Institute for Vocational Education and Training (KRIVET)
Meeting with officials from the Korean Ministry of Education, Science and Technology
Meeting with officials from the Ministry of Labor
Meeting researchers and statistical experts from the Korean Labor Institute
Meeting with representatives of the Federation of Korean Trade Unions
Meeting with representatives of the Korean Employers Federation

Tuesday 20 May, Seoul

Meeting with officials of the Seoul Metropolitan Office of Education responsible for upper-secondary education
Visit to Gyeonggi Mec-Tec. High School
Visit to Induk Institute Of Technology
Visit to Junior College/Jeonmun daehak

Wednesday 21 May, Incheon, Cheonan

Meeting with officials of the Incheon Metropolitan Office of Education responsible for upper-secondary education
Visit to Korea Polytechnic College – Incheon Campus
Visit to Kye San Technical High School
Visit to M.I.Tech - firm providing training to upper secondary students

Thursday 22 May, Cheonan, Seoul

Visit to Korean University of Technology and Education
Meeting with representatives of the Ministry of Education, Science and Technology
Discussion with the national coordinator

Main visit, 4-10 September, 2008

Thursday 4 September 2008, Seoul

Meeting with researchers in VET and in labour market from Korean Research Institute for Vocational Education and Training (KRIVET)
Meeting with officials from the Korean Ministry of Education, Science and Technology
Meeting with representatives of: Korean Employers Federation, Federation of Korean Trade Unions,
Small Business Institute, Sector Council - Korea Shipbuilders' Association, Sector Council – Korea Semiconductor Industry Association

Friday 5 September 2008, Seoul

Meeting with a representative of the Korea Chamber of Commerce and Industry

Workshop with representatives of:

Gyeonggi Provincail Office of Education, Sudo Electric Technical High school, Seoul Girls' Commercial High School, Daelim College, Kyunbuk College, Shingu College Korea, Polytechnic Colleges(Seoul/Kyonggi), The Korea Chamber of Commerce and Industry, The Korea Chamber of Commerce and Industry, Sector Council - Korea

Monday 8 September 2008, Busan

Visit to KyungNam College University of Information & Technology
Visit to Energy Science High School
Visit to Automotive High School

Tuesday 9 September 2008, Daegu, Gumi

Visit to Yeungjin College in Daegu
Visit to Gyeong Buk Domestic Science High School in Gumi
Meeting with Gyeongsangbuk-do Office of Education

Wednesday 10 September 2008, Seoul

Meeting with a representative of Human Resources Development Service of Korea
Discussion with the national coordinator
Meeting with officials of the Ministry of Education, Science and Technology

Learning for Jobs

OECD Reviews of Vocational Education and Training

KOREA

For OECD member countries, high-level workplace skills are considered a key means of supporting economic growth. Systems of vocational education and training (VET) are now under intensive scrutiny to determine if they can deliver the skills required. *Learning for Jobs* is an OECD study of vocational education and training designed to help countries make their VET systems more responsive to labour market needs. It will expand the evidence base, identify policy options and develop tools to appraise VET policy initiatives.

The Korean VET system is part of a system of education which has achieved huge advances in a very short time; school results and educational attainment levels are now among the highest in OECD countries. At the same time, the rapidity of change has presented the Korean VET system with some significant challenges, including weak involvement of industry in VET, lack of quality standards for workplace training, weak linkages between VET degree and national technical qualifications and lack of practical work experience among VET teachers. Among the review's recommendations:

- Provide an institutional framework for enhancing industry participation in VET
- Improve the provision, quality and relevance of initial workplace training
- Ensure that VET teachers have relevant practical experience
- Link the vocational part of the curriculum in VET institutions to national technical standards

OECD is conducting country VET policy reviews in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales), and the United States (South Carolina and Texas). The initial report of *Learning for Jobs* will be available on the OECD website in 2009. The final report on the study's findings will be published in 2010.

Background information and documents are available at ***www.oecd.org/edu/learningforjobs***.