OECD Reviews of Vocational Education and Training

A Skills beyond School Review of Korea

Viktória Kis and Eunah Park

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Boxes

Acronyms and terms in Korean

Advanced specialist programmes	학사학위 전공심화과정
Customised programmes	맞춤형 프로그램
Economically active population survey	경제활동인구조사
Formula funding (or High Educational Competency Schools)	포뮬러 펀딩 (교육역량 우수 대학 지원사업)
GOMS (Graduates Occupational Mobility Survey)	대졸자 직업이동경로조사
Grant for colleges of excellence (or Representative school brand support)	대학 대표 브랜드 사업 지원
KEDI (Korean Educational Development Institute)	한국교육개발원
KRIVET (Korea Research Institute for Vocational Education and Training)	직업능력개발원
KSAT (Korean Scholastic Ability Test)	대학 수학능력시험
MEST (Ministry of Education Science and Technology)	교육과학기술부
MOEL (Ministry of Employment and Labour)	고용노동부
NQ (National Qualification including technical and non-technical qualifications)	국가 기술 자격 and국가자격
NCS (National competency standards)	국가직무능력표준
Polytechnics	폴리테크닉대학 or 기능대학
Postsecondary VET (vocational education and training)	중등이후 직업 교육 및 훈련
SME (small and medium enterprise)	중소기업
Statistical Yearbook for Employment of Higher Education Graduates	취업통계연보
Statistical Yearbook of Education	교육통계연보
Sector Skills Councils	산업숙련위원회

Summary: strengths, challenges and recommendations

Strengths

- Education is highly valued in Korean society. While this has some drawbacks, it has also contributed to the rise in upper secondary enrolment rates. Korean students have high educational aspirations and a high share of young people progress into tertiary education (OECD, 2011).
- Entrants to postsecondary programmes have strong literacy and numeracy skills, as indicated by PISA results. Korea also performs very well in terms of educational equity (OECD, 2010).
- There is a good research base on postsecondary vocational education and training (VET). The Korean Research Institute for Vocational Education and Training (KRIVET) conducts research that supports the development and implementation of VET policies.
- There are various surveys that provide useful information on transition from school to work, the outcomes of education and training programmes and the labour market. These surveys include the Graduates Occupational Mobility Survey, the Youth Panel Survey, the High School Graduates Occupational Mobility Survey and the Occupational Employment Statistics.
- Policy making is dynamic and aims to address many key challenges, as illustrated by the recent introduction of formula funding in junior colleges, measures concerning poor performing postsecondary institutions and the ongoing development of the national competency standards.
- The postsecondary education system is in principle well-articulated, allowing students to continue from a postsecondary VET programme to a university degree with recognition of the credits obtained – although some challenges remain, such as the co-ordination of curricula.

Challenges

- Various indicators suggest that there is a mismatch in terms of skills and education between postsecondary VET provision and labour market needs. While some of the origins of mismatch are rooted in culture and tradition, some features of the Korean education and training system also contribute to the challenge.
- Links between the VET system and industry and business are generally weak, including at national policy making level. This makes it harder to develop policies that help the VET system to meet rapidly changing labour market needs.
- Junior colleges offer programmes of variable and sometimes low quality. While the government has introduced various policy measures to tackle this, some challenges remain such as weaknesses in quality assurance mechanisms.
- Junior college degrees do not seem to adequately signal skills to employers, partly due to the lack of rigorous assessments of students before graduation. National (technical) qualifications also face a problem of recognition in the labour market. In addition, degree programmes are currently not linked to national qualifications – a challenge that has been recognised by the Korean government.
- Provision in junior colleges is driven by student preferences and not systematically balanced by signals of labour market needs. In addition, student choices may not be sufficiently well-informed, as high-quality information on the labour market prospects offered by different options is lacking.
- Participation in workplace training is optional in junior college programmes. Participation rates in workplace training vary and are often low. When workplace training does take place, arrangements to assure its quality are weak and students do not always obtain credits for the time spent in companies.

Recommendations

1. Take action to address systemic weaknesses in the way skills needs are signalled and how the VET system responds to those needs. Provide a package of mutually reinforcing measures to improve the capacity of the postsecondary VET system to meet the skills needs of the economy.

2. Promote industry involvement in VET through a high profile national body, which includes all industry, government and other stakeholders and has either a very influential advisory role or decision-making power in relation to VET policy.
3. Improve quality assurance in junior colleges by:
   - revising quality indicators used in funding allocation and accreditation to better reflect aspects of quality relevant to vocational programmes;
   - revising mandatory requirements for junior college programmes;
   - improving steering instruments that encourage continuous quality improvement.
4. Make degrees more transparent to potential employers and improve efficiency in the VET system by:
   - ensuring that curricula in junior college follow common (national) standards;
   - conducting systematic and rigorous assessments of learning outcomes in junior college programmes;
   - linking junior college programmes and degrees to national competency standards and national (technical) qualifications whenever relevant.
5. Improve the responsiveness of VET provision to labour market needs by:
   - further enhancing career information available to prospective students;
   - balancing student choice with signals of employer needs in junior colleges.
6. Make workplace training mandatory in junior college programmes. Ensure that workplace training is supported by quality standards and a clear legal framework.

References

OECD (2010), *PISA 2009 Results: Overcoming Social Background: Equity in Learning Opportunities and Outcomes (Volume II)*, PISA, OECD Publishing. doi: *10.1787/9789264091504-en*

OECD (2011), *Education at a Glance 2011: OECD Indicators*, OECD Publishing. doi: *10.1787/eag-2011-en*

Chapter 1

Introduction and initial assessment

This chapter describes the OECD policy study of postsecondary vocational education and training (VET), the review of Korea, summarises the main features of the country system and sets out an assessment of its strengths and challenges.

The policy review of Korea and its place in the wider OECD study

This review is one of a series of country reports on postsecondary vocational education and training (VET) in OECD countries, prepared as part of an OECD study (see Box 1.1). The series includes *reviews*, (such as this one) involving an in-depth analysis of a country system leading to a set of policy recommendations backed by analysis. In addition there are *commentaries*. These simpler exercises are largely descriptive but also include an assessment of strengths and challenges in the country system. The commentaries are designed to be of value as free-standing reports, but are also prepared so that they can become the first phase of a full review, should a country so wish.

Box 1.1 Skills beyond School: the OECD study of postsecondary vocational education and training

Increasingly countries look beyond secondary school to more advanced qualifications to provide the skills needed in many of the fastest growing technical and professional jobs in OECD economies. The OECD study, *Skills beyond School*, is addressing the range of policy questions arising, including funding and governance, matching supply and demand, quality assurance and equity and access. The study will build on the success of the previous OECD study of vocational education and training *Learning for Jobs*. which examined policy through 17 country reviews and a comparative report. The study also forms part of the horizontal *OECD Skills Strategy* (OECD, 2012a).

Full country policy reviews are being conducted in Austria, Denmark, Egypt, Germany, Israel, Korea, the Netherlands, Switzerland, the United Kingdom (England), and the United States (with case studies of Florida, Maryland and Washington State). Shorter exercises leading to an OECD country commentary will be undertaken in Belgium (Flanders), Canada, Iceland, Romania, Spain, Sweden and in Northern Ireland and Scotland in the United Kingdom. Background reports will be prepared in all these countries, and in France, Hungary and Mexico.

The exercise as a whole will therefore yield a wide range of published country reports and working papers and also involve a comparative report.

See: *www.oecd.org/edu/vet.*

This review follows a standard methodology. Korea initially prepared a country background report. An OECD team then made two visits to Korea on 20-23 September 2011 and 31 October to 4 November 2011 where they discussed the issues arising with a very wide range of stakeholders.

The structure of the report

This first chapter places the country review of VET in the context of the OECD policy study of postsecondary VET, presents the structure of the report, describes the main features of country system, compares its main features with other systems internationally, explores some key international indicators bearing on the system and examines its strengths and challenges.

The following chapters propose 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.

A snapshot of the system

Postsecondary VET in Korea

In Korea most young people enter high school (88.5% of 15-19-year-olds in 2008 (OECD, 2011a), either general (75.5%), vocational (23.5%) or other types (1%). Both types of high school allow students to pursue postsecondary studies. In 2009 85% of general high school graduates and 74% of vocational high school graduates enrolled in a postsecondary programme (MEST, 2010). Access to postsecondary education is selective and students are admitted to an institution and programme based on their performance on the Korean Scholastic Aptitude Test (KSAT).

Postsecondary VET accounts for 30.8% of tertiary enrolment (Kim, Woo, Ryu and Oh, 2011). It is provided by two types of institution: junior colleges and polytechnics. The junior college sector is much larger, enrolling over 50 times more students than polytechnics. Access to junior colleges is selective in principle, but not genuinely so in some institutions that struggle to fill their places. About two thirds of entrants are recent high school graduates, while most of the rest are students who re-took the KSAT test.

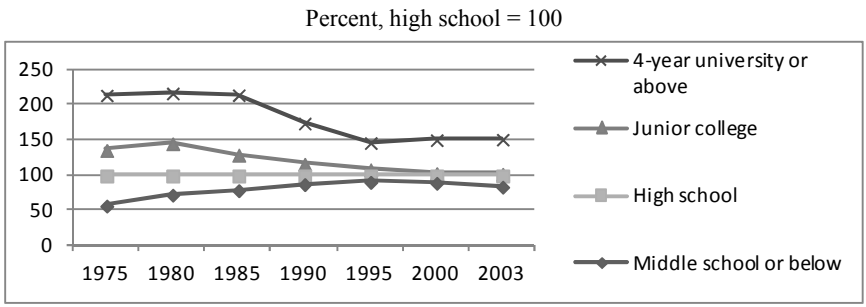
Junior colleges provide mostly two-year programmes, though they also offer three and four-year programmes in a variety of fields (engineering, medical and natural sciences, study humanities, education or social science, arts). In addition to general programmes, junior colleges also offer several types of special programmes (*e.g.* advanced specialist or customised programmes) but these represent less than 10% of junior college enrolment. The number of programmes offered in junior colleges has been growing,

reaching over 5 400 programmes in 2010. But following a previous period of expansion, the number of junior college students has been falling over the past ten years, in particular in the fields of science and engineering (Kim, Woo, Ryu, Oh, 2011). The number of junior colleges has also fallen from 158 in 2005 to 145 in 2010 (MEST, 2010).

Junior college provision is predominantly private. Almost 95% of junior colleges are private (136 out of 145) and enrol about 97% of over 767 000 junior college students. Government funding accounted for less than 10% of total junior college income in 2010 (MEST, personal communication February 2012). MEST provides funding to junior colleges through two major channels: grants to "colleges of excellence" (KRW 77.6 billion in 2011) and formula funding (KRW 181.2 billion in 2011) (MEST, 2011). Only 80 out of 143 junior colleges received government funding through formula funding or grants to colleges of excellence in 2011 (MEST, 2011). Performance indicators used in the funding formula include the employment rate of graduates (25%), the ratio of enrolment to the number of places allocated by quota (20%), income from industry relative to total income (5%), the ratio of full-time lecturers to the number required by law (10%), the ratio of cost of education to tuition income (20%), the amount of scholarships relative to tuition income (12%) and indicators of academic credits earned by students (3%) and the rate of increase in tuition fees (5%).

The labour market benefit of a junior college degree is more visible in terms of employment than in wage rates. Wage differentials between junior college and high school graduates have been decreasing over the past 30 years (Figure 1.1) down to 6% in 2010 (Kim, Woo, Ryu and Oh, 2011). But activity and employment rates among junior college graduates are higher than among high school graduates (see Table 1.1).

Figure 1.1 Wage gap by educational attainment



Source: Yoon and Lee (2010) "Korea", in G. Bosch and J. Charest (eds.) *Vocational Training: International Perspectives*, Routledge, New York.

Table 1.1 Activity and employment rates by educational attainment

December 2011, 15-year-olds and above

Educational attainment	Employment rate	Activity rate
High school graduates	61.6%	63.8%
Junior college graduates	75.6%	77.4%
University graduates and above	76.3%	77.8%

Source: Statistics Korea (2012), Economically Active Population Survey, *http://kosis.kr/ups/ups_01List01.jsp?grp_no=1003&pubcode=WC&type=F*

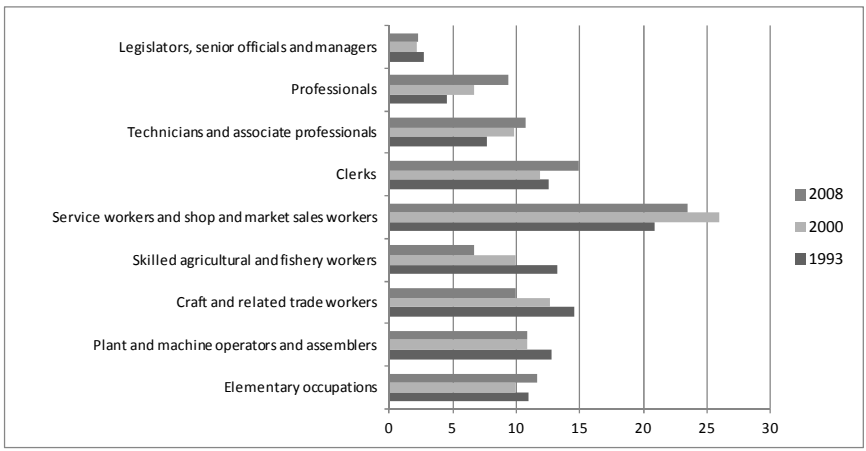
The smaller polytechnic sector serves a limited set of technical fields. All polytechnic colleges are public and charge relatively low tuition fees. 11 colleges operate in 43 campuses and enrol about 15 000 students. Access to polytechnics is selective. While the vast majority of entrants are recent high school graduates, an increasing share of entrants hold postsecondary qualifications (up to 6.3% in 2010 from 0.6% in 2003): in 2010 5% of entrants had a junior college degree and 1.3% a university degree. Polytechnics offer one-year and two-year programmes (as well as some shorter programmes) in technical fields like electronics, mechanical engineering or telecommunications. Technician training takes two years to complete. Master craftsman training is open to entrants who have relevant work experience or hold a technician certificate and the programme takes one or two years to complete. Craftsman training programmes typically take one year to complete. Polytechnics also offer shorter programmes for employed workers, the unemployed and retired military servicemen (Kim, Woo, Ryu and Oh, 2011). Data on the labour market outcomes of polytechnics are available from the National Health Insurance database, and show that the employment rate was 60.7% for recent junior college graduates and 85.5% for polytechnic graduates (KEDI, 2011).

Education and training programmes face the challenge of responding to changing skill needs, which partly result from economic and technological progress. US-based research suggests that technological progress leads to a fall in demand for low or mid-level skills workers performing routine tasks whose work is relatively easily replaced by computers/machines (*e.g.* assembly workers). Technological change has little effect on workers performing non-routine low-skilled tasks (*e.g.* truck drivers), while it increases demand for high-skilled workers performing non-routine cognitive tasks (*e.g* managers) (Autor, Levy and Murnane, 2003; Autor, Katz and Kearney, 2008; Autor and Dorn, 2009; Goos and Maning, 2007). Demand for labour is reflected in decisions made by employers regarding recruitment and wages (Hamermesh, 1993). Figure 1.2 shows the change in the composition of employment in terms of occupational categories since the

early 1990s in Korea. The observed changes are consistent with the predictions concerning technological change. The share of professionals more than doubled in 15 years and there was a large increase in the share of technicians and associate professionals (by 40%) (typically requiring postsecondary education). Regarding occupations typically requiring secondary level education, the picture is mixed. There was an increase in the share of clerks (19%), as well as in service, shop and market sales workers (12%) and a decrease in the share of plant and machine operators and assemblers (-15%), craft and related trade workers (-31%) and skilled agricultural and fishery workers (-50%). The share of elementary occupations increased slightly, by 6%.

Figure 1.2 The share of different occupational categories in total employment

Persons aged 15 years and above, Korea



Note: Excluding armed forces and conscripts.

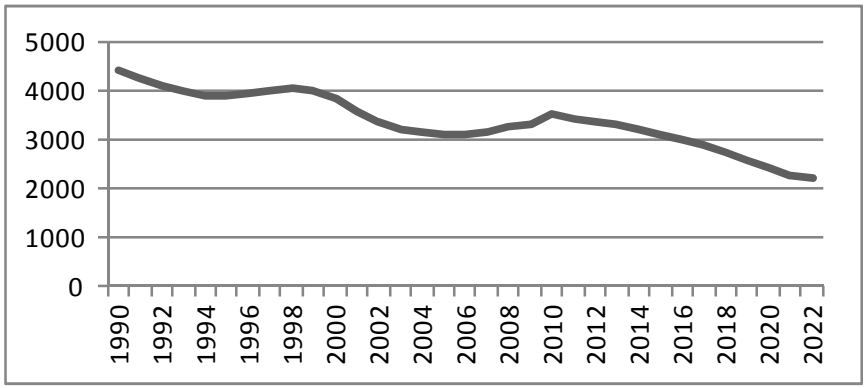
Source: Author's calculations based on data from International Labour Organization (2011), *LABORSTA Labour Statistics Database* website, *http://laborsta.ilo.org/,* accessed December 2011. Copyright © International Labour Organization (ILO Department of Statistics, *http://laborsta.ilo.org*/).

Demographic change is another important contextual factor. Over the past 20 years there has been a decline in number of high school age students (and thus potential postsecondary entrants) and the decline is expected to continue – between 2012 and 2022 the number of 15-19-year-olds is expected to decrease by a third (see Figure 1.3). This intensifies the competition for students among postsecondary institutions. As an already very high proportion of young people enter postsecondary education, even

rising enrolment rates could not compensate for the effect of demographic decline.

Figure 1.3 Historical population data and projections

15-19-year-olds, thousands



Source: OECD (2012), OECD.Stat website, *http://stats.oecd.org*, accessed January 2012.

The Korean postsecondary VET system in international comparison

Globally, Korean junior colleges and polytechnics may be grouped with a family of institutions offering postsecondary vocational programmes of one to three years in length at a level below bachelor degrees. These include, for example, the community colleges in the United States, professional colleges in Switzerland, Academies in Denmark, IUT's (*institut universitaire de technologie*) in France and Further Education Colleges in the United Kingdom. The one to three year programmes lead to qualifications variously described as sub-degrees, associated degrees, short-cycle qualifications and BTS (*Le brevet de technicien supérieur*) in France. In Spain the higher technical diplomas are somewhat similar, but often the same vocational schools provide training at upper secondary and postsecondary level.

These institutions, in Korea and elsewhere, may be contrasted with the tier of university-level vocational institutions providing professional or vocational bachelors degrees – for example the university colleges in Denmark, and the universities of applied science in the Germanophone countries.

The Korean programmes are mainly (although not entirely) aimed at and utilised by young people straight out of high school and therefore form part of the initial VET system. This contrasts with arrangements in many other

countries where the a major role of the institutions and programmes concerned is to provide additional skills for those already in a profession, or those seeking a change in career direction, or those re-entering the labour market.

The Korean programmes also have some distinctive features. Like associate degrees in the US and foundation degrees in the UK, the two year programmes in Korean junior colleges provide a well-articulated basis for promotion to a bachelor degree qualification through an additional one or two years in a university. But in Korean junior colleges the majority of those who start and then undertake the two year programmes move on to a university to complete a four year programme. This is a very different from, say, community colleges in the US, where programmes are extensively modularised, and students – often adults studying part-time – quite often do not complete the programme, or only seek to pursue some modules.

In Korea, a module of workplace training as part of the programme is mandatory in polytechnic but not in junior college programmes. Mandatory workplace training is relatively common in many parallel systems, such as the Academies in Denmark and in the Spanish institutions providing higher technical diplomas.

Comparing Korea with other countries: key indicators

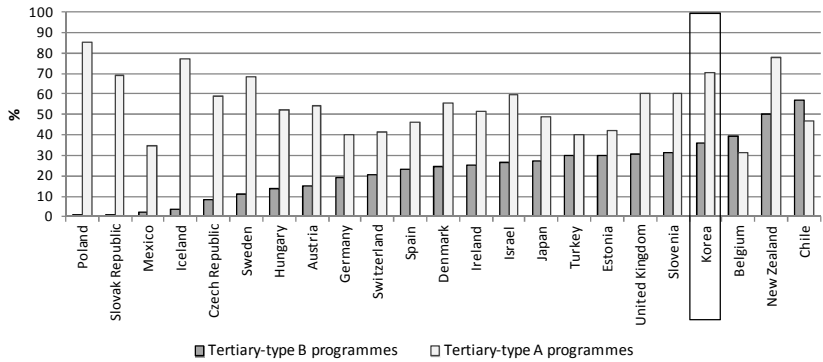
This section looks at some indicators comparing the Korean VET system, and its labour market context, with the pattern found in other countries. Comparisons of a statistical indicator for any one country with the OECD average are useful, but must always be interpreted with caution. Few indicators are unequivocally positive in one direction, and, there can be no presumption that convergence with the average is desirable.

Indicators of education and training

Entry rates to tertiary type A and B programmes in Figure 1.4 provide one indication of the importance of the vocational sector at postsecondary level. Tertiary-type-B programmes can in principle be associated with postsecondary VET. In Korea tertiary-type-B programmes include programmes provided by junior colleges, polytechnics and other programmes, such as the army, air force or nursing. But postsecondary VET programmes and institutions are heterogeneous across countries and international classifications provide an inevitably incomplete picture. For example, in Switzerland and Denmark nurses are trained in institutions classified as tertiary-type-A, while in Austria they are trained in institutions classified as “postsecondary non-tertiary”.

Figure 1.4 Entry rates to postsecondary education

2009



Note: The net entry rates represent the proportion of persons of a synthetic age cohort who enter a certain level of tertiary education at one point during their lives (see OECD, 2011b).

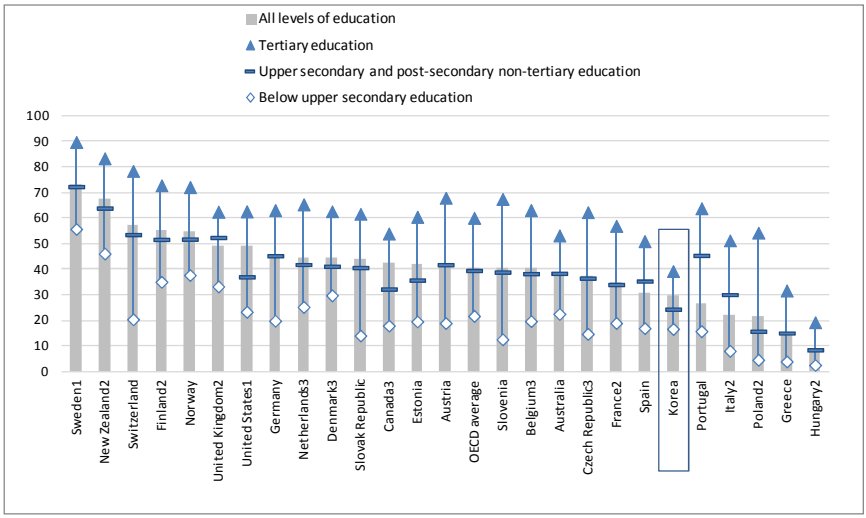
Source: OECD (2011a), *Education at a Glance 2011: OECD Indicators*, OECD Publishing. doi: *10.1787/eag-2011-en*

Adult participation in education and training is an important contextual indicator for initial vocational programmes, because it reveals the extent to which later on in life, adults can catch up in response to missed opportunities in initial education, augment basic skills with additional qualifications, and attain higher level qualifications. Participation of adults in formal or non-formal education in Korea is below the OECD average for all levels of education. In 2007 overall 30% of 25-64-year-olds participated in formal and/or non-formal training, while the OECD average was 41%. Participation rates by educational attainment are shown in Figure 1.5.

Patterns of participation in formal and non-formal training in Korea resemble those in most other countries in that those with higher level qualifications and those working full-time are more likely to participate. At the same time, unlike the usual pattern, among those with at least upper secondary education employed persons are less likely to participate than those not employed. Participation rates for persons with upper secondary or postsecondary non-tertiary education were 17% and 36% for employed and not employed persons respectively. For those with tertiary education the figures were 37% and 46% respectively.

Figure 1.5 Participation in formal and/or non-formal education, by educational attainment

Participation rate of the 25-64-year-old population, 2007



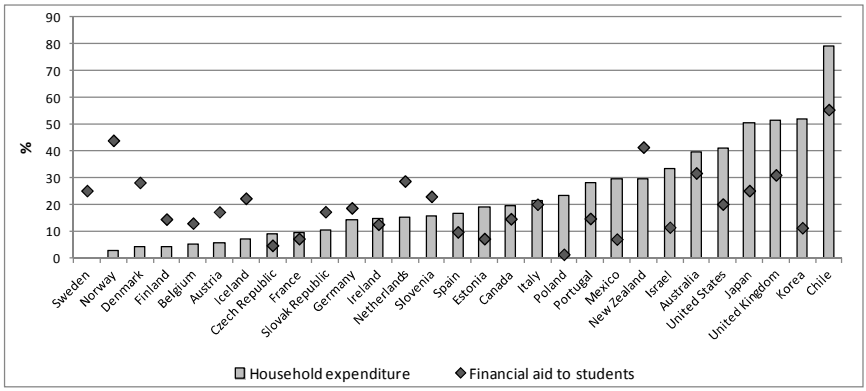
Notes: 1. reference year 2005; 2. reference year 2006; 3. reference year 2008.

Source: OECD (2010a), *Education at a Glance 2010*: *OECD Indicators*, Table A5.1b, OECD Publishing. doi: *10.1787/eag-2010-en*.(*www.oecd.org/edu/eag2010*).

The relative contribution from households to the financing of tertiary education (both type-A and B) in Korea is one of the highest among OECD countries (Figure 1.6), while financial aid to students is relatively low, especially compared to household expenditure.

Figure 1.6 Household expenditure and financial aid to students as a percentage of total expenditure, for tertiary education

2008



Notes: 1. Financial aid to students includes scholarships and grants to households, and student loans; 2. Reference year 2007 for Canada, 2009 for Chile; 3. For Canada, Denmark, Japan and the Slovak Republic some levels of education are included in others. Refer to code "x" in Table B1.1a (OECD, 2011a) for details.

Source: OECD (2011a), *Education at a Glance 2011: OECD Indicators*, Table B3.2b and B5.3, OECD Publishing. doi: *10.1787/eag-2011-en*

Labour market indicators

Youth unemployment is relatively low in Korea, which is one of only eight OECD countries where the unemployment rate of 15-24-year-olds is below 10%. The unemployment rate of 25 to 34-year-olds is also below the OECD average (5.6% in Korea against an OECD average of 9.5% in 2010) (OECD, 2012b).

Table 1.2 The Korean labour market

	Unit	2000	2009	2010	2010 OECD Total
Unemployment rate	% of labour force	4.6	3.8	3.8	8.5
Youth unemployment rate	% of youth labour force (15-24)	10.8	9.8	9.8	16.7
Long-term unemployment (12 months and over)	% of total unemployment	2.3	0.5	0.3	32.4
Employment rate of women	% of female population (15-64)	50.0	52.2	52.6	56.7
Temporary employment	% of dependent employment	…	21.3	19.2	12.4
Part-time employment	% of total employment	7.0	9.9	10.7	16.6
Growth of real GDP	% change from previous year	8.8	0.3	6.2	2.9

Source: OECD (2011b), *OECD Employment Outlook 2011*, OECD Publishing. doi: *10.1787/empl_outlook-2011-en*

Previous OECD analysis and recommendations

Recent OECD work on Korea relevant to postsecondary VET includes the *Learning for Jobs* review of high school VET (Kuczera, Kis and Wurzburg, 2009), a *Jobs for Youth* report on Korea (OECD, 2007a), a review of tertiary education (Grubb *et al.*, 2009), the 2008 economic survey (OECD, 2008), a review of regulatory reform (OECD, 2007b), and the review of innovation policy (OECD, 2009a) and a review on the recognition of non-formal and informal learning (OECD, 2009b). Some of the recommendations reviewed in this section have been followed by policy initiatives in Korea.

The OECD review of high school VET in Korea (Kuczera, Kis and Wurzburg, 2009) proposes a set of four interconnected recommendations. First, the role of industry and trade unions should be reinforced at all levels of policy formulation. The report highlights the efforts undertaken by the Korean government to improve the involvement of industry in VET through the establishment of sector councils. It recommends the creation of an institutional framework for enhancing industry participation in VET. Under this 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. Second, the report indicates that workplace training is little used in high school VET in Korea and, when provided, its quality varies. Incentives to firms to offer workplace training are weak. The report recommends improving 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. Third, the report proposes that newly recruited VET teachers should be encouraged to gain relevant work experience before entering the profession, particularly for high school VET, and to 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. Fourth, the report argues that curricula in high school VET should be more clearly linked to national technical standards and qualifications to increase efficiency and improve responsiveness to industry needs. The report recommends deriving the vocational part of the curriculum used by VET institutions from, or at least adapting 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. Given mixed evidence of the effectiveness of current NTQs, NTQs should be evaluated by the Ministry of Labour and reformed if necessary.

The OECD *Jobs for Youth* review of Korea (OECD, 2007a) recognises various government initiatives to encourage vocational education (*e.g.* creation of specialised high schools) and improve the performance of universities and colleges (*e.g.* promoting mergers and helping them specialise in certain fields of study). At the same time, the report argues that education has been largely supply-driven and has paid insufficient attention to changing labour market requirements. This has led to concerns of over-education and mismatches between labour supply and demand. The report provides various recommendations to improve vocational education. First, links between junior colleges and universities and the labour market should be strengthened (*e.g.* by including internships in the curriculum, linking government funding to the employment outcomes of graduates). Second, all students should have access to career guidance services so that they can make well-informed choices. Third, to reduce the risk of mismatch between the skills of tertiary graduates and labour market requirements, prospective students and their parents should receive high-quality information on the labour market outcomes of graduates by institution and field of study. Also, before launching new study programmes institutions could be required to prove that the proposed programme would respond to unmet labour demand. Finally, to promote VET at high school level, all students should have access to workplace training as part of their programme, there should be better pathways between high school VET and tertiary education, and short-cycle tertiary programmes should be developed in close connection with business.

The OECD review of tertiary education in Korea (Grubb *et al.*, 2009) also notes the gap between tertiary provision and labour market needs. The review highlights measures taken by Korea to improve the connections of tertiary institutions to labour markets (*e.g.* more internships, greater industry participation in the organisation of educational programmes, expansion of short VET programmes) and argues for a stronger role of VET in tertiary education, given its importance in terms of enrolment (25% of total tertiary enrolment, OECD, 2011a), in providing skilled labour for various fields crucial to the Korean economy and in offering access to tertiary education for disadvantaged students. It recommends improving pathways from colleges to universities, creating a qualifications framework and developing quality indicators. The resulting better measures of competence might encourage employers to shift from status-based hiring to hiring on the basis of quality, which in turn might strengthen the role of junior college degrees in the labour market. The report recommends the establishment of a national framework for quality assurance and a single independent quality assurance agency. The tasks of such an agency would include developing quality assurance procedures and elaborating quality indicators to provide better information to prospective students and their parents, and employers (Grubb *et al.*, 2009).

The 2008 OECD economic survey of Korea (OECD, 2008) also notes the problem of mismatch between skills provided in tertiary education and labour market requirements and argues that links between institutions and companies need to be strengthened. It also recommends fostering competition between institutions and argues that this should be supported by regulatory reform and increased transparency about the performance of individual institutions.

The OECD review of regulatory reform in Korea (OECD, 2007b) underlines the challenges of skills mismatch and weak links between vocational programmes and the labour market. It also argues for a new framework for quality assurance in tertiary education and a single entity responsible for quality assurance. It also recommends assessing the employability of graduates and making this information publicly available.

A country note for Korea on non-formal and informal learning (OECD, 2009b) recommends developing a strategic action plan to promote the recognition of non-formal and informal learning, as well as improving research on it. It also highlights the importance of targeting particular groups, such as older workers, women, immigrant workers, and people in military services. Further recommendations include developing a national qualification and credit framework, enhancing information and guidance.

The OECD review of innovation policy in Korea (OECD, 2009a) recommends setting up incentives that encourage institutions to adapt their provision to skills needs. It also highlights the need to raise the status of vocational programmes and qualifications. It argues that competition between institutions should be based on reliable information about their performance. Welcoming the introduction of the law on information disclosure, it recommends making information available at the level of individual departments or faculties. Finally, it recommends creating incentives for institutions to offer flexible lifelong learning programmes.

A brief assessment of the Korean postsecondary vocational education and training system

Strengths

- Education is highly valued in Korean society. While this has some drawbacks, it has also contributed to the rise in upper secondary enrolment rates – the enrolment rate of 15-19-year-olds increased from 75% to 88.5% between 1995 and 2008. Korean students have high educational aspirations, illustrated by the very high share (97% in 2003) of 15-year-olds who expect to complete a tertiary education programme (OECD, 2003). In 2008 72% of 20-year-olds enrolled in some form of tertiary programme, the highest proportion among OECD countries (OECD, 2011a).

- Entrants to postsecondary programmes have strong literacy and numeracy skills. In Korea the share of 15-year-olds performing at level 3 or above is the highest, while the share of those performing below level 2 is the lowest among OECD countries (among countries participating in PISA only Shanghai-China does better on this indicator). Korea also performs very well in terms of educational equity. The percentage of variance in reading performance explained by family background is one of the lowest among OECD countries. Over half of disadvantaged students in Korea excel in PISA, one of the highest percentages across OECD countries (OECD, 2010b).

- There is a good research base on postsecondary VET. The Korean Research Institute for Vocational Education and Training (KRIVET) was established in 1997 to promote VET and support the development of human resources in Korea. Its mission includes conducting policy research to support policy development and implementation, conducting research on the Korean system of qualifications, collecting data and analysing labour market trends, collecting and disseminating information on VET.

- There are various surveys that provide useful information on the education and training system. The Graduates Occupational Mobility Survey (GOMS) is a short-term panel survey of graduates of two or three year colleges and universities in Korea. Launched in 2006, it is conducted annually by the Korea Employment Information Service, funded by the Employment Insurance Fund and sponsored by the Ministry of Employment and Labour (MOEL). Graduates are contacted one and two years after graduation. Data are collected through face-to-face interviews and the sample covers 4% of the graduate population. The survey collects information on recent graduates' educational experience and their transition to and early performance in the labour market. Its key objective is to provide policy makers and researchers with information. In addition to GOMS, other surveys, such as the Youth Panel Survey, the High School Graduates Occupational Mobility Survey and the Occupational Employment Statistics, provide information on transition from school to work, the outcomes of education and training programmes and the labour market.
- Policy making is dynamic and aims to address many key challenges. For example, the recently developed formula funding model for junior colleges aims to steer institutional policies towards government objectives, the government has taken firm action by identifying poor performing postsecondary institutions, and the ongoing development of the national competency standards aims to make qualifications more transparent and better matched to employer needs.
- The postsecondary education system is in principle well-articulated, allowing students to continue from a postsecondary VET programme to a university degree with recognition of the credits obtained. Progression to university programmes is widespread, about half of junior college graduates do not enter the labour market but continue in a university programme. However, some challenges remain as there is no co-ordination of curricula between postsecondary vocational programmes and university programmes, and junior college graduates are often poorly prepared for university programmes.

Challenges

- Various indicators suggest that there is a mismatch in terms of skills and education between postsecondary VET provision and labour market needs. A relatively high share of postsecondary VET graduates enter jobs that typically require secondary level education. Employers often perceive a gap between what is learned in postsecondary VET programmes and the realities of workplaces. While some of the origins

of mismatch are rooted in culture and tradition, some features of the Korean education and training system also contribute to the challenge.

- Links between the VET system and industry and business are generally weak. At national policy making level there are various structures designed to engage employers, but their effectiveness seems limited. This makes it harder to develop policies that help the VET system to meet rapidly changing labour market needs.
- Junior colleges offer programmes of variable and sometimes low quality. While the government has introduced various policy measures to tackle this (*e.g.* formula funding with performance criteria, accreditation), some challenges remain. In particular quality assurance mechanisms in junior colleges are weak and rely on performance indicators that are not adapted to the requirements of postsecondary VET.
- Junior college degrees do not seem to adequately signal skills to employers. This may be partly due to the lack of rigorous assessments of students before graduation, that would be transparent to employers. National (technical) qualifications, which are based on standardised tests of skills, also face a problem of recognition in the labour market. In addition, degree programmes are currently not linked to national qualifications – a challenge that has been recognised by the Korean government, which is piloting reforms that would create such links.
- Provision in junior colleges is driven by student preferences, which may contribute to the problem of mismatch. Currently the influence of student preferences is not systematically balanced by signals of labour market needs. In addition, student choices may not be sufficiently well-informed, as high-quality information on the labour market prospects offered by different options (in particular different study programmes) is lacking.
- Participation in workplace training is optional in junior college programmes. Participation rates in workplace training vary and are often low. This is unfortunate, given the benefits of workplace training for students, employers and the VET system as a whole. When workplace training does take place, arrangements to assure its quality are weak and students do not always obtain credits for the time spent in companies.

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Chapter 2

Mismatches in skills and education

Education is highly valued in Korea and the vocational education and training (VET) system relies on good research and data, and dynamic policy making. To address the challenges faced by the Korean postsecondary VET system and improve its responsiveness to labour market needs. This chapter identifies a number of systemic challenges in the way skills needs are signalled and how the VET system responds. To address these challenges, a package of mutually reinforcing measures are needed – the components of this package being spelt out in subsequent chapters.

This chapter sets out a systemic analysis of the challenges of mismatches in skills and education in postsecondary VET in Korea. It argues that a vicious cycle of disincentives mean that the system is relatively unresponsive to the skills needs of the labour market, and that a sequence of mutually reinforcing measures are required to transform the vicious cycle into a virtuous cycle. It provides a framework for the package of five specific recommendations in the following chapters.

Challenge

Various indicators imply a mismatch between postsecondary VET provision and skill needs

It is a widely held view among policy makers, employers and academics in Korea that there is a mismatch between the attributes of graduates from education and training programmes and those required by the labour market (*e.g.* Kim, Woo, Ryu and Oh, 2011; Joo, 2007; Kim, Kim and Choi, 2011). This section looks at indicators of three (potentially overlapping) types of mismatch: mismatch in skills, education and field-of-study (see Box 2.1).

Box 2.1 Different types of mismatch

Skills mismatch

Skills mismatch arises when there is a discrepancy between workers' skills and those required by their job. Measuring genuine skills mismatch is hard and even data on self-reported skills mismatch are scarce (Quintini, 2011a).

Skills mismatch indicates that the skills of the labour force do not match the skills required in the labour market. This may point to various weaknesses in the system – initial education and training programmes may not offer skills in line with labour market needs (they may offer higher or lower level skills, or different sorts of skills than needed), they may not adequately prepare people for learning in the course of their careers or workers may have limited opportunities for upskilling in the course of their careers.

Education (or qualification) mismatch

Education (or qualification) mismatch arises when a worker holds higher or lower education credentials (or qualifications) than those required to perform their job adequately. There are three main measures of "required" education (or qualification). The "normative" method uses experts' assessment of required credentials. "Self-declared" measures use workers' own views on the credentials required in their job. The "statistical method" uses the mean or mode educational attainment of workers in each occupation as the "required" education (or qualification) (Quintini, 2011a).

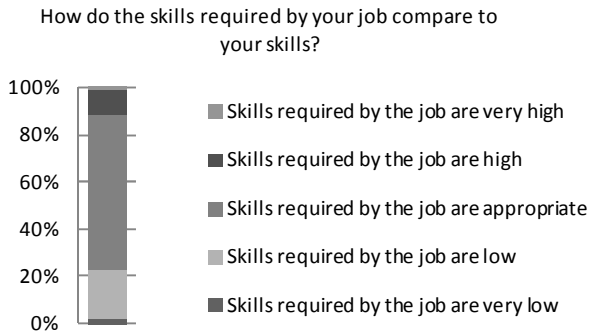
Box 2.1 Different types of mismatch (*continued*)

Education mismatch does not necessarily reflect skills mismatch. A number of researchers have argued that it may simply reflect heterogeneity in the skills of similarly educated people (for a review see Quintini, 2011a). Individuals with the same education background may have different types and levels of skills. This means that an apparently overeducated worker is not necessarily overskilled but may be well-matched or even underskilled for the job.

Mismatch may also arise in terms of *field-of-study*. For example, an over-educated worker may actually be well-matched or even under-skilled for their job if the qualification is not in the right field-of-study.

There are various national survey data sources on self-reported skills mismatch in Korea. Figure 2.1 shows that about 22% of junior college graduates report that they are under-skilled for their job and 11% report that they are over-skilled. Almost half of junior college graduates report that what they learned during their studies is useful in their job, but a third of graduates report that what they learned at college is not very useful or not useful at all (Figure 2.2). In explanation of this last point 78% say that their job is not related to what they learned in junior college, while 13% report that although what they learned is related to their job, it is not easily applicable to it (KEIS, 2012). A quarter of 150 surveyed employers perceived a mismatch between what young people learnt at junior college and requirements in companies (Kim, Kim and Choi, 2011). About half of those who perceived such a mismatch reported that the occupation-specific skills of graduates do not match company needs, while half of them thought that the problem is with generic competences.

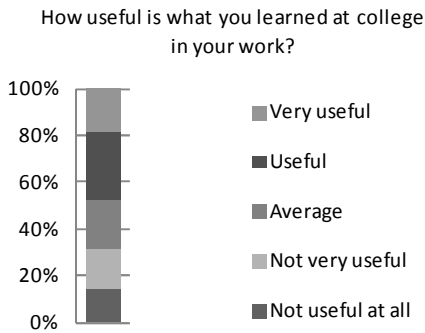
Figure 2.1 Self-reported skills mismatch among junior college graduates



Note: Survey conducted in 2009, graduates from August 2007 and February 2008.

Source: Author's calculations based on data from KEIS (2012), KEIS website, Graduates Occupational Mobility Survey 2008, *http://survey.keis.or.kr/survey_keis/m_eng/goms_1.php*, accessed March 2012.

Figure 2.2 Self-reported usefulness of skills acquired in junior college



Note: 2009, graduates from August 2007 and February 2008.

Source: Author's calculations based on data from KEIS (2012), KEIS website, Graduates Occupational Mobility Survey 2008, *http://survey.keis.or.kr/survey_keis/m_eng/goms_1.php, accessed March 2012.*

Education mismatch (or qualification mismatch[1]), in particular overeducation, is widely perceived in Korea as a problem. According to the "statistical method" of measuring such mismatch (see Box 2.1) the incidence of overeducation in Korea is about the OECD average, while the incidence of undereducation is above the OECD average (Quintini, 2011b). However, with this method junior college graduates working in jobs that

could be performed by high school graduates will not appear as "over-qualified" if it is common in Korea for junior college graduates to take jobs that require high school education.

Comparing the distribution of workers by education across occupations in different countries provide particularly interesting insights (see Box 2.2 on the "normative method" and Figure 2.3). In Korea two thirds of junior college graduates are in jobs that typically require secondary level education or below, compared with below one third of postsecondary VET graduates in six European countries. This suggests that postsecondary VET graduates in Korea suffer from "overeducation" (or that overeducation is more of a problem in Korea than in the other countries). An alternative explanation for the difference between Korea and the six European countries could be that Korean workers are not "overeducated" (or more overeducated than those in the European countries) but their jobs actually require higher level education. For example it could be that being a sales worker in Korea requires higher level education than an apparently parallel position in some European countries so that holding a postsecondary degree is necessary to be a well-trained sales worker in Korea. However the working methods and technologies used in the countries included in Figure 2.3 are unlikely to be so different from those used in Korea that they would justify systematically higher levels of education.

Box 2.2 Using cross-country data on occupational groups by educational attainment as indications of mismatch

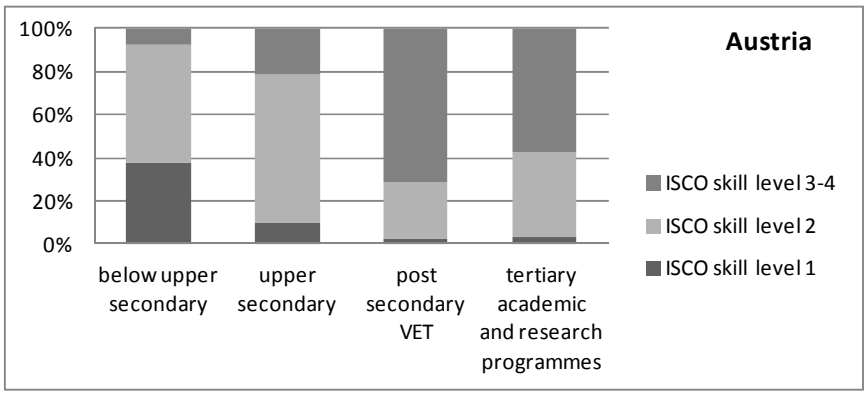
Data based on ISCO-88 categories allow occupations to be classified by the skill and education level they typically require. Some occupations (*e.g.* doorkeeper, cleaner) typically require ISCO skill level 1, which corresponds to primary education level skills. Another set of occupations (*e.g.* machine operator, electrical mechanic, sales worker, clerk) typically require skill level 2, which corresponds to secondary education level skills. Finally some occupations (*e.g.* nurse, engineering technician, business professional) typically require skill level 3-4, which corresponds to postsecondary level skills. This means, for example, that a postsecondary graduate holding a job that typically requires ISCO skill level 2 is probably overeducation.

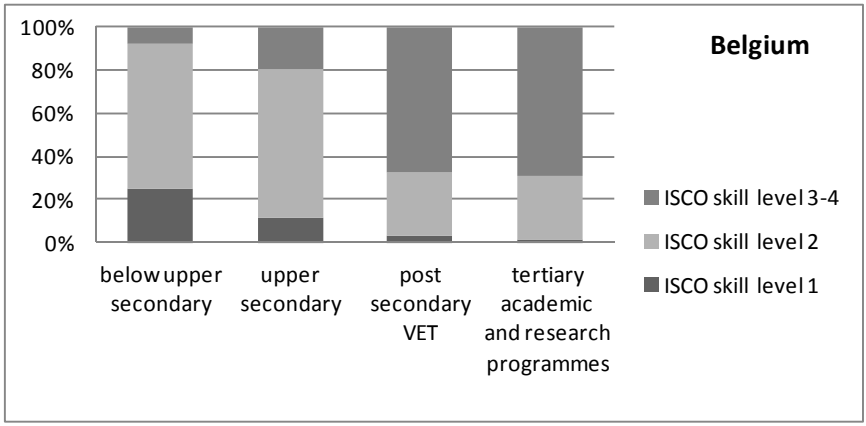
Box 2.2 Using cross-country data on occupational groups by educational attainment as indications of mismatch (*continued*)

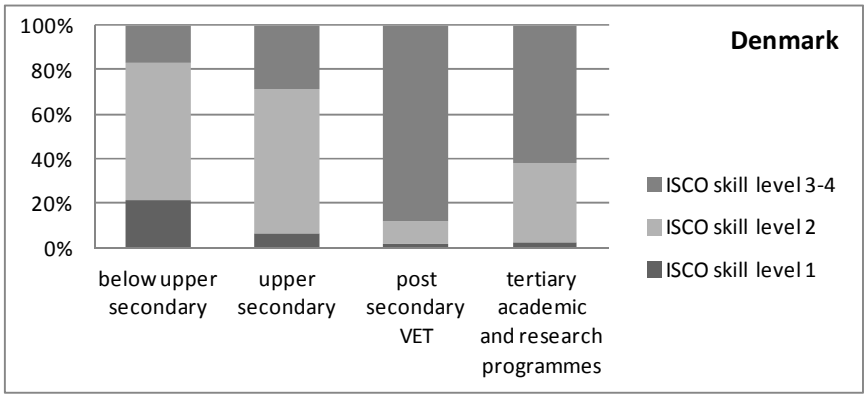
Using a logic similar to that of the "statistical method" (see Box 2.1) it is possible to obtain some additional indications of education mismatch by comparing countries to each other. To do this one has to assume that a given job requires similar skills across countries – for example that, regardless of the country, a clerk can be adequately trained in secondary education and typically does not need to pursue postsecondary studies. Using this assumption one might obtain some indications of "overeducation". For example if in country X those with postsecondary degrees hold ISCO skill level 2 jobs in a much higher proportion than in other countries, then country X probably has an "overeducation" problem. If one considers that the classification of jobs to skill and education levels is adequate, the conclusion is that country X has a more severe "overeducation" problem among postsecondary graduates than the other countries. If, alternatively, one considers that the classification of jobs to skill and education levels may be imperfect, than the difference between country X and the others can be interpreted as "overeducation" among postsecondary graduates in country X, while the other countries would not (necessarily) have an "overeducation" problem.

Figure 2.3 Distribution of workers in occupations requiring different skill levels, by educational background

25-34-year-olds, 2009




Belgium
100%
80%
60%
40%
20%
0%
below upper secondary
upper secondary
post secondary VET
tertiary academic and research programmes
ISCO skill level 3-4
ISCO skill level 2
ISCO skill level 1


Denmark
100%
80%
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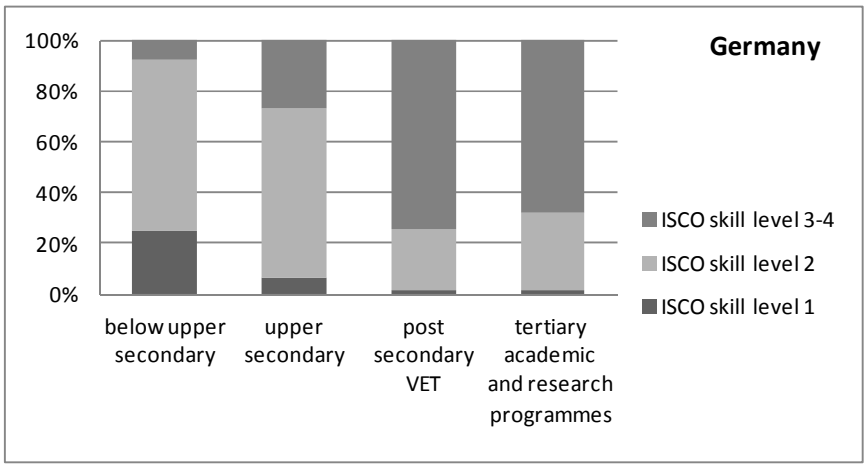
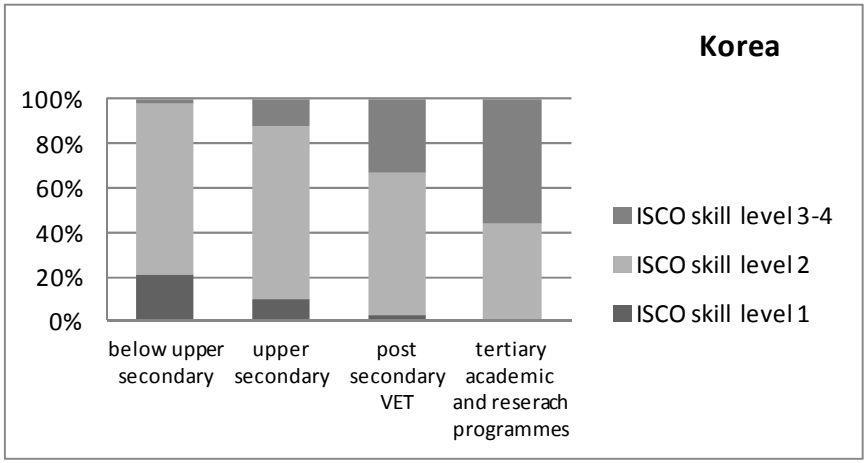
below upper secondary
upper secondary
post secondary VET
tertiary academic and research programmes
ISCO skill level 3-4
ISCO skill level 2
ISCO skill level 1


Germany
100%
80%
60%
40%
20%
0%
below upper secondary
upper secondary
post secondary VET
tertiary academic and research programmes
ISCO skill level 3-4
ISCO skill level 2
ISCO skill level 1


Korea
100%
80%
60%
40%
20%
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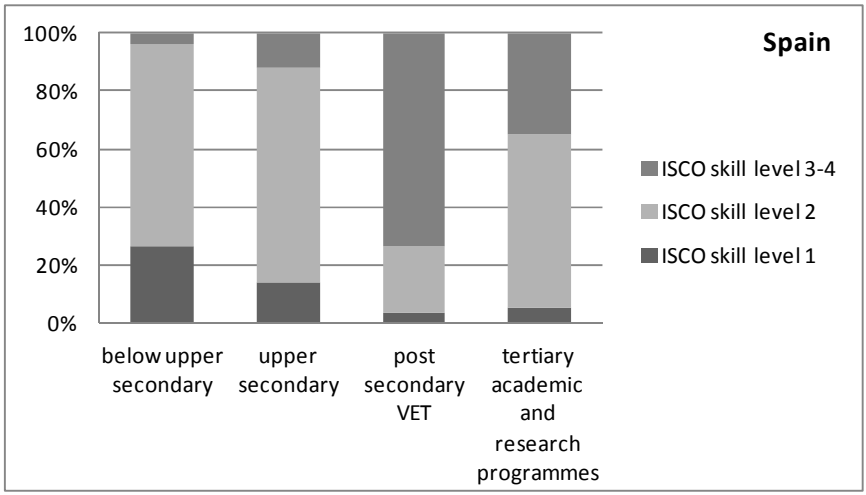
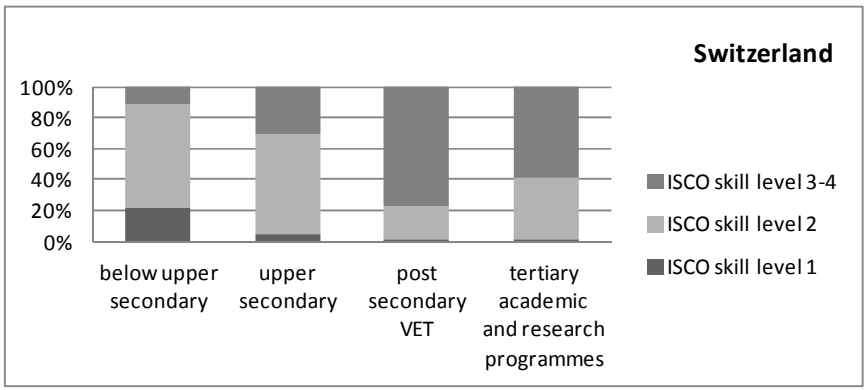
below upper secondary
upper secondary
post secondary VET
tertiary academic and reserach programmes
ISCO skill level 3-4
ISCO skill level 2
ISCO skill level 1


Spain
100%
80%
60%
40%
20%
0%
below upper secondary
upper secondary
post secondary VET
tertiary academic and research programmes
ISCO skill level 3-4
ISCO skill level 2
ISCO skill level 1

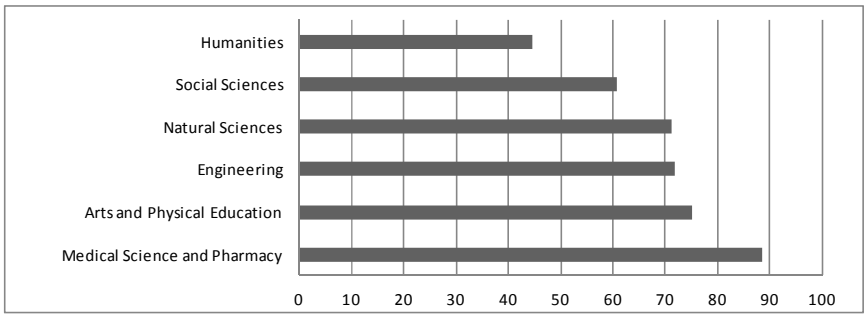

Switzerland
100%
80%
60%
40%
20%
0%
below upper secondary
upper secondary
post secondary VET
tertiary academic and research programmes
ISCO skill level 3-4
ISCO skill level 2
ISCO skill level 1

Note: The reference year for Korea is 2007.

Source: Author's calculations based on data from Eurostat (2009), EU Labour Force Survey 2009, and Statistics Korea (2012), Economically Active Population Survey, *http://kosis.kr/ups/ups_01List01.jsp?grp_no=1003&pubcode=WC&type=F*

Field-of-study mismatch arises when the field-of-study of a worker does not match the field of employment. Figure 2.4 shows that the study-job match rate, based on self-assessment, varies by discipline among junior college graduates. Among graduates in humanities less than 45% of graduates find a job that matches their field-of-study, while in medical fields and education almost 90% do. Some of the mismatch may indicate desirable flexibility or that the mix of provision in junior colleges is not in line with labour market needs.

Figure 2.4 Study-job match rates among junior college graduates



Source: KEDI (2009), *Statistical Yearbook for Employment of Higher Education Graduates.*

Mismatch has multiple costs

Overeducation can have multiple costs.[2] First, if workers are overeducated and overskilled, they could have pursued lower levels of education to acquire the skills needed for their job, suggesting some waste of time and resources. But over-skilling combined with over-education may not necessarily be worrying, if it reflects the dynamics of technological change – if the skills of graduates reflect emerging technologies, while firms are slow to adapt in terms of skill utilisation (Mendes de Oliveira *et al.*, 2000). Second, if workers are overeducated and adequately skilled, they might have been able to acquire the same skill set through a lower level education programme (of possibly better quality), which again creates inefficiencies. Third, a combination of overeducation and underskilling may signal field-of-study mismatch and/or weak quality in education

programmes. In this case also there are inefficiencies, as it would have been possible to produce better skilled students with the same resources. Finally, workers who are both undereducated and underskilled have limited productivity, which is a problem both for them (lower wages) and the firm.

Another potential consequence of the mismatch is that young people delay their entry into the labour market if they do not find a job that they consider commensurate with their education and/or skills – this has an opportunity cost for graduates and for the Korean economy. In Korea educated youth seem to prefer staying out of the labour market rather than accepting jobs that do not meet their expectations. The time taken by junior college graduates to find their first job also supports this: those who obtained their first job in a large company took longer to find it than those who started their career in an SME (KEIS, 2012). It is reasonable to assume that it is harder to obtain a job in a large company than in an SME, so the figures above suggest that graduates tend to wait hoping to find a job in a large company, and accept an SME job only once they have given up on it.

Box 2.3 provides an overview of empirical evidence on the consequences of mismatch.

Box 2.3 Empirical evidence on the consequences of mismatch

Empirical evidence on the consequences of mismatch is reviewed in Quintini (2011a). Over-qualification and over-skilling appear to reduce job satisfaction (*e.g.* Tsang, 1987; Battu *et al*., 2000; Verhaest and Omey, 2006, Verhofstadt, Witte and Omey, 2007; Hersch, 1991; Tsang *et al*., 1991). For under-qualified workers the evidence is inconsistent. In terms of participation in training, mismatched workers are more or less likely to take part in training depending on who they are compared to. Over-qualified workers are more likely to participate in training than well-matched workers with the same qualification (Hersch, 1991; van Smoorenburg and van der Velden, 2000, Verhaest and Omey, 2006), but less than well-matched workers in the same job. For under-qualified workers the relationship is the opposite (Büchel and Mertens, 2004; Verhaest and Omey, 2006). Much of the empirical evidence of the consequences of mismatch for firms and the economy is not conclusive.

On the case of Korea Joo (2007) and Kim, Kim and Choi (2011) provide some evidence on the wage penalty associated with field-of-study and skills mismatch. Kim, Kim and Choi (2011) suggest that over-skilled or over-educated junior college graduates earn 10% less than well-matched junior college graduates, while those with a mismatch in their field-of-study earn 5% less.

Some features of the institutional and policy environment may cause mismatch

Although the high value attached by Korean culture to education is clearly a strength, many in Korea believe that demand (on behalf of both employers and students) for academic and higher level credentials is excessive. The source of such preferences is sometimes identified in Confucian tradition, but if traditional values were the sole factor at work, reducing overeducation might not be feasible or even desirable, at least in the short run, given that those cultural preference have both intrinsic value and underpin many strengths in the Korean education system.

While culture matters, other factors like public policy also do so. In the words of Amartya Sen, "While culture does not work in isolation from other social influences, once we place culture in adequate company, it can greatly help to illuminate our understanding of the world" (Sen, 2004 p.50). Sen argues that the influence of culture does not mean simple cultural determinism. In the case of Korea, he highlights how the country's remarkable educational progress was influenced not only by its cultural values, but also by a practical understanding of the importance of education based on the experience of other countries. It will be argued here that some features of the Korean education and training system and the incentives they create mean that quite rational decisions by employers and students can also cause mismatch. The critically important policy implication is that reforming these features may significantly reduce the mismatch and the "overeducation" problem independently of the cultural status of education.

In the economist's ideal world, employers observe their workers' productivity and offer wages that reflect individual productivity. Students have perfect information and choose study programmes that maximise their productivity and therefore their earnings. In this world any mismatches are temporary. But a number of factors mean that student choices and hiring decisions by employers do not work like this. The discussion below looks at why this might be so in Korea. Later recommendations are designed to tackle this challenge systemically, and encourage a more skills-friendly set of incentives.

First, rational choices by students may lead to a poor match between the skills of graduates and skill needs in the labour market for at least two reasons. High school students lack high quality information on the labour market outcomes of the different options available to them. Without adequate information their choices cannot adequately respond to skill needs in the labour market. Another reason is that student choices are not exclusively based on labour market prospects. For example, students may seek higher social status through education and opt for higher level

programmes even if these do not necessarily offer better employment prospects than lower level ones.

Second, rational choices by employers may also aggravate mismatch. Employers have limited information on the productivity of potential recruits. Education credentials (*e.g.* degrees, national (technical) qualifications) are visible and thus have a potentially valuable signalling function. But high dispersion in the productivity of individuals holding the same credential diminishes its signalling value. Employers will pay more attention to visible characteristics that have the highest signalling value – in the Korean context this may imply a preference among employers for academic degrees from prestigious institutions (for the reasons explained in Box 2.4). Weak quality assurance in Korean postsecondary VET means that there is little certainty that graduates have acquired a targeted set of skills so the skill set of graduates and thus their productivity becomes more heterogeneous.[3] The resulting higher dispersion weakens the signalling value of credentials and, for the reasons mentioned above, could make it rational for employers to prefer university to junior college graduates regardless of their field of study.

Box 2.4 The signalling value of credentials and recruitment decisions

Credentials (*e.g.* degrees, qualifications) are correlated (more or less) with productivity and thus have a signaling value to employers. But high dispersion in the productivity of applicants holding a given credential diminishes the correlation and therefore signalling value, as employers have less certainty about the actual skills of the credential holder.

Consider the example of an employer who wants to recruit a tourist guide. If the employer perceives wide variation in tourist guide skills among holders of a junior college degree in tourism, they may simply focus on what is clearly visible to them: the hierarchy of different levels of education and between institutions at the same level. They may prefer to hire a university graduate even if their field of study was not in tourism. This is because Korean employers are aware of the very close link between KSAT scores and admission into different types of postsecondary education and different institutions. So while they may be uncertain about what skills a junior college graduate may have, they expect with more certainty university graduates to have greater ability (from which they infer higher productivity) than junior college graduates simply because their KSAT scores were higher. As a result, even if the job does not require university level education, it is rational for the employer to hire a university graduate from an unrelated field of study rather than a junior college graduate with a degree from the relevant field.

Finally, productivity may not be adequately rewarded by wages. Direct evidence on this is hard to obtain, but in Korea returns to education are relatively low and for most workers age is a more important wage determinant than education (Lee and Lee, 2006). The wage-increasing effect of age is justified to the extent that individuals continue to develop job-related skills while working. But an excessive role of age and low returns to education may also reflect a blend of cultural and institutional features of the Korean VET system. Older workers may be paid more than younger ones regardless of their productivity, a wage setting practice that may be rooted in the traditional "hobong" system in Korea (DFAT, 1999) – a practice hard to address by policy, but that has been declining over the past years (Bae, 1997; Kim and Park, 1997; Kim and Kim, 2003). An alternative, potentially overlapping, explanation is that wages reflect productivity but not education (and training), because of the weak productivity signalling value of education credentials (see Box 2.4). As argued above, this may be caused by weak quality assurance in postsecondary education leading to high dispersion in graduate productivity.

Recommendation 1

Take action to address systemic weaknesses in the way skills needs are signalled and how the VET system responds to those needs. Provide a package of mutually reinforcing measures to improve the capacity of the postsecondary VET system to meet the skills needs of the economy.

Supporting arguments

The most effective way of addressing the mismatch problem is to implement a package of simultaneous and mutually reinforcing reforms, designed to promote skills-friendly incentives both in the postsecondary VET sector and in the Korean labour market.

Student preferences and employer preferences are part of a potentially vicious cycle. If employers prefer university graduates because vocational degrees fail to adequately signal occupational skills, employment outcomes for vocational graduates will be weaker. If high school students observe this, they will have an even stronger preference for university programmes, so that only those with the weakest KSAT scores will end up in vocational programmes. This in turn will reinforce employer perceptions that university graduates have higher ability, so that their preference for university graduates will be even stronger. This vicious cycle can clearly aggravate the mismatch problem. But the cycle could become a virtuous one leading to a better match. A combination of policy reforms (in particular

recommendation 3 and 4) would improve the productivity signalling value of education and training credentials, which in turn would strengthen the mechanisms that improve student choice in terms of matching skills needs. As junior colleges have strong incentives to respond to student choice, improvements in student choice (in terms of alignment with skills needs) would affect the behaviour of junior colleges (*e.g.* in terms of programmes provided, staffing practices), making them more responsive to labour market needs.

The five chapters which follow set out a sequence of policy recommendations that would steer the Korean VET system towards a better match between postsecondary VET provision and labour market needs. These recommendations are designed to be a package of mutually reinforcing recommendations, so that reforms in one area can facilitate reforms in other areas, while modifying one feature of the VET system may make little difference if the other features are unchanged. The following paragraphs describe some ways in which these different recommendations are intertwined.

Effective industry engagement (recommendation 2) facilitates the implementation of various other reforms. Industry participation in the development and updating of degree programmes and qualifications ensures they remain aligned to constantly changing labour market needs. If companies have strong links with the VET system, it is easier to offer workplace training to all VET students (recommendation 6). The availability of workplace training opportunities can then be used to balance student choice in the definition of the mix of provision (recommendation 5) to achieve a better match with skills needs in companies.

Stronger quality assurance in postsecondary VET programmes should ensure that graduates who are better prepared for entry into the labour market and successful careers. High quality programmes are more likely to be perceived by companies as relevant to their needs, thus worth the investment of time and money. This facilitates industry engagement (recommendation 2) and encourages companies to offer workplace training to VET students (recommendation 6).

Degrees and qualifications that are transparent and meaningful to employers (recommendation 4) can alter the way companies judge potential recruits. The resulting improvement in employment outcomes for VET graduates should make VET a more appealing option for prospective students, which in turn should help better align their choices with labour market needs. At the same time, making degrees and qualifications more meaningful to employers requires stronger quality assurance in postsecondary VET programmes (recommendation 3).

Balancing student choice with signals of employer needs (recommendation 5) and mandatory workplace training (recommendation 6) help align VET provision to labour market needs. This should not only yield better employment outcomes for graduates, but also facilitate industry engagement with the VET system (recommendation 2). At the same time, successfully implementing mandatory workplace training requires a strong framework for engaging companies with the VET system (recommendation 6).

Notes

1. This report uses the term "education mismatch" rather than "qualification mismatch", because in Korea the term "qualification" typically refers to credentials delivered outside the formal education system, such as national, national technical and private qualifications.
2. Admittedly, education may have desirable outcomes beyond labour market outcomes, such as better health and reduced crime rates. This section focuses on the skills developing function of education.
3. Another factor, which adds to the effect of weak quality assurance, is that as increasing numbers of young people enter postsecondary education, their characteristics are likely to become more heterogeneous on entry.

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Chapter 3

Effective industry engagement in vocational education and training policy making

At present, the level of industry engagement in vocational education and training (VET) policy making essential to a good VET system is lacking in Korea. To this end, this chapter recommends that industry involvement in VET should be promoted through a high profile national body, which includes all relevant stakeholders.

This chapter looks at industry engagement in postsecondary VET. The challenges described, the recommendation and the arguments also very relevant to high school VET. In fact the recommendations here build on those in the OECD review of high school VET in Korea (Kuczera, Kis and Wurzburg, 2009).

Challenge

At present the engagement of employers and trade unions with VET policy and provision is very limited and institutions providing postsecondary VET have weak connections with companies.[1] At the level of national policy there are various structures aiming to engage employers, but their effectiveness seems limited. First, various policy review committees in the Ministry of Employment and Labour involve employers and trade unions. But interviews conducted during the review visits suggest that in practice these committees do not offer real opportunities to engage with VET policy making. Second, there is a tripartite body, which involves employer organisations, trade unions and representatives of relevant ministries. But VET does not feature on their agenda, which focuses more on issues of wage adjustment and working conditions. Finally, Sector Skills Councils were designed to represent the voice of employers on skills needs, but interviews conducted during the review visits suggest that they may not effectively represent employers. Sector Skills Councils do not involve representatives of trade unions.

The government is clearly already aware of the challenge and of the importance of strengthening links between the VET system and companies. Initiatives designed to foster such links include the creation of dual type programmes in high school VET, various government grant programmes (*e.g.* the Grand School-Industry Collaboration Project), the creation of customised training programmes and the establishment of Sector Skills Councils. But interviews conducted during the review visits and a historic review of Korean VET policies (Lee, 2007) suggest that, despite these efforts, links between VET institutions and industry remain weak. Lee (2007) has argued that companies often participate in a passive way and, in the absence of any clear immediate benefits from participation, see few returns from collaboration.

The absence of employer engagement in VET policy making would be less worrying if VET graduates had a smooth transition into the labour market and employers were satisfied with their preparation. But as shown earlier there are indications of mismatch between VET provision and labour market needs. During the review visits, representatives of SMEs reported that they struggle to fill some vacancies partly because graduates do not

want to work for SMEs and partly because there is a mismatch between the profile of graduates in terms of speciality and the profile of vacancies. Kim, Kim and Choi (2011) report that employers perceive mismatches in the skills of graduates as a problem because new recruits need substantial training, costing money and taking the time of more experienced employees. Weak employer engagement with the development of qualifications also leads to insufficient recognition of qualifications in the labour market in terms of employment and wages (see Chapter 5). Without active employer engagement in the ongoing development of National Competency Standards, there is a risk that despite reform efforts the new system of standards and qualifications will have limited recognition in the labour market in terms of employment and wages.

The interrelated nature of different VET issues also presents a challenge. Key components of a good VET system (*e.g.* systematic workplace training, programmes adapted to labour market needs and reliable qualifications) rely heavily on employer engagement, but at the same time strong employer engagement is difficult to achieve when these other elements of a good VET system are lacking. If the mix of VET provision and the content of programmes are poorly linked to labour market needs, then employers may see the VET system as irrelevant and consider that it is not worth investing their time into engaging with it. But without employer engagement the VET system is likely to remain poorly connected to company needs, and thus employers' perception that VET is of marginal interest is likely to persist.

Recommendation 2

Promote industry involvement in VET through a high profile national body, which includes all industry, government and other stakeholders and has either a very influential advisory role or decision-making power in relation to VET policy.

Supporting arguments

This recommendation is supported by four arguments. First, engaging employers is key to a good VET system. Second, the influence of different stakeholders needs to be balanced. Third, stronger employer engagement would facilitate other desired reforms. Finally, a carefully designed framework would facilitate industry engagement with the VET system.

Engaging employers is one key to a good VET system

For Korea, as for other OECD countries, improving the level of employer engagement represents a key step in developing the effectiveness

of its VET system (OECD, 2010) and specifically in the review of Korea (Kuczera, Kis and Wurzburg, 2009). First of all, employers can judge if the content of programmes and qualifications meet current labour market needs and guide their adaptation to emerging requirements. This may involve their participation at national (sectoral) level to determine the core content of programmes and qualifications, as well as consultations at local level to adapt curricula to local needs. In Denmark for example about 80% of the curriculum in short-cycle postsecondary vocational programmes is defined at national level to ensure a common core skill set, while 20% is defined locally to respond to local employer needs. Employers and trade unions are actively involved at both levels.

Second, employer engagement in policy development is crucial for successful policy implementation. For employers to have sufficient incentives to actively engage with VET institutions, they need to see VET policies and programmes as "their" programmes. Successful workplace training relies on active employer engagement. Employer involvement in designing the system (*e.g.* content requirements, quality control) makes employers more likely to offer workplace training. Employers should also have a major role in defining the mix of provision (see Chapter 6 on student choice). If the mix of provision is balanced by the availability of workplace training, then employers influence the mix through their willingness to offer training places. Alternatively, if the mix of provision follows some assessment of skill needs, employers need to be consulted to identify these needs.

The influence of different interest groups needs to be balanced

There needs to be a balance between the influence of different stakeholders – employers, trade unions and the government. An important role for the government is to take into account the perspectives of employers and unions in policy development and, at the same time, support the interests of students. While employers have an essential role in articulating skills needs, they may be interested in investing in a narrower skill set than that which would be in the interest of VET students and society as a whole. To some extent this depends on the level at which their interests are articulated. Employers as a whole have a very strong interest also in general transferable skills. Sectoral organisations naturally have an interest in sector-specific skills, while individual companies in firm-specific skills. But from the point of view of employers transferable skills have both positive and negative sides to them – they are important and applied in all occupations, but less positively for employers, they also bid up wages and increase job turnover (OECD, 2010).

In several OECD countries (*e.g.* Austria, Denmark, Germany, Norway, Switzerland) trade unions balance the influence of employers in VET policy development. As representatives of the workforce, trade unions can voice the student and employee interest in skills development. They have incentives to protect the interests of existing workers, ensure that employees have access to training and their skills are sufficiently transferable to allow for mobility across companies. Less positively, they also have incentives to reduce access to shortage occupations to maintain high wages and union bargaining power (OECD, 2010).

In the current Korean context the government dominates VET policy making with relatively little influence from industry. Therefore it is employer engagement with the VET system, as well as the involvement of trade unions, that need to be strengthened.

Stronger employer engagement could facilitate other desired reforms

As argued above, the lack of industry engagement, VET programmes of variable quality and weakly recognised qualifications can form a vicious cycle. But it is possible to break this cycle and turn it into a virtuous one. In the virtuous cycle the VET system provides high quality programmes that are relevant to labour market needs, and as a result employers will perceive the VET system as a source of well-trained recruits and will be interested in sustaining the relationship with it. This in turn helps sustain the quality of the VET system, as policies and programmes can be designed to meet labour market needs, systematic workplace training maintains links between VET institutions and companies and improves the skills of VET students. The resulting quality of VET graduates sustains and improves employer confidence and engagement.

Stronger industry engagement should help to support other reforms that would improve the VET system, including those recommended in this report. Implementing mandatory workplace training (see relevant recommendation below) is not possible without the support of industry, while adapting VET programmes to industry needs requires these needs to be articulated by representative bodies of employers. Degrees and qualifications will lack recognition in the labour market if companies do not feel that they reflect rapidly changing occupational requirements and can be trusted as a signal of employee skills (see Chapter 2, and Chapter 5).

A national body that expresses the voice of employers and trade unions in relation to VET is just one element in this cycle and cannot lead to immediate and radical changes in the VET system on its own. But it is an essential component of a good VET system and, together with other

measures can help move towards a virtuous cycle of strong industrial engagement and high quality VET.

A carefully designed framework facilitates industry engagement

Countries with strong postsecondary VET systems have typically established a framework for engaging employers and trade unions at various levels. The existence of a framework ensures systematic collaboration, rather than *ad hoc* partnerships over-dependent on personalities and of varying quality. Such a formal framework can usefully complement other forms of school-industry co-operation, such as local partnerships between companies and institutions providing VET.

Bodies for industry engagement may operate at different levels serving different purposes. A single national body allows for broad and strategic advice on VET policy. Bodies organised at local level can help improve links between individual institutions and local companies, facilitating work placements for example. Finally sectoral organisations are helpful in developing the industry or occupation-specific curricula associated with particular qualifications.

Ideally the Korean VET system would involve systematic co-operation between industry and the VET system at all relevant levels, national, sectoral and local. Some countries, such as Austria, Germany, Denmark and Switzerland have a long tradition of such co-operation. In Switzerland, for example, the role of employers and trade unions in VET design and delivery is even stipulated by law. As Korea has a weak tradition of industry involvement in formal education and training, focusing on strong collaboration at national level would be a good starting point.

There are different options for how such a body might be structured. It would need to include representatives that are recognised as such by the great majority of Korean employers and trade union members. Otherwise it would not really change the relationship between companies and VET policy making, and despite the existence of formal arrangements companies may continue to perceive the VET system as poorly linked to their needs. In England weak recognition by employers of bodies that are supposed to represent them has been identified as a cause of low industry engagement in VET (Gleeson and Keep, 2004). Conversely, such bodies can work well to facilitate the implementation of VET policies, if recognised by individual employers. In Norway, for example, employer bodies hugely facilitated the expansion of apprenticeships by actively promoting apprenticeships among their member firms (Bowman, 2005).

Box 3.1 provides some examples of institutional arrangements for industry involvement in VET policy making. The frameworks in Denmark

and Switzerland build on strong industrial bodies (employer organisations and trade unions) and a long tradition of engagement in VET. The industry-led UKCES in the United Kingdom does not build on strong and traditional industrial bodies, but involves high profile representatives of large and small employers (including CEOs of large companies), as well as other stakeholders.

Box 3.1 Industry-led bodies engaged in VET policy

Denmark

The Council of Academy Profession Programmes and Professional Bachelor Programmes (*i.e.* short and medium cycle postsecondary VET) was set up in 2008. The board has up to 21 members, including those appointed by the Minister of Science, Innovation and Higher Education after nomination by various employer organisations (8 members), trade unions (2), the organisation of Danish regions (1), organisation of local governments (2), student organisations (2), University Colleges (1) and Academies of Professional Higher Education (1). The Council meets six times a year and advises the Minister about the development of new programmes, the mix of provision, quality assurance and improvement. It also provides a yearly report, which reviews existing programmes and describes new initiatives.

Source: Danish Agency for Higher Education and Educational Support (2012), *Skills beyond School: OECD Review of Post-Secondary Vocational Education and Training – National Background Report for Denmark, http://en.fivu.dk/publications/2012/oecd-review-skills-beyond-school/oecd-review-skills-beyond-school-denmark.pdf*

Switzerland

The involvement of professional organisations in VET policy making is required by law. The term "professional organisations" in Switzerland refers to trade associations, employer association and trade unions, and include both companies and business persons. Professional organisations have the leading role in the content and examination process of both secondary postsecondary VET programmes (in Switzerland postsecondary VET is referred to as "professional education and training", PET).

Box 3.1 Industry-led bodies engaged in VET policy (*continued*)

Professional organisations in postsecondary VET, as in secondary level VET, draft core curricula for PET college degree programmes, which are then approved by the Swiss authorities (Confederation). National examinations leading to a federal diploma are also led by professional organisations. They ensure those federal PET diplomas are relevant to the needs of the profession and the labour market. Professional organisations draft examination rules, which cover admission requirements, occupational profiles, the knowledge and skills to be acquired, qualification procedures and the legally protected title. They also conduct examinations. The role of Swiss authorities (at Confederation level) includes approving examination rules, supervising examinations and issuing federal diploma.

Source: OPET (Federal Office for Professional Education and Technology), (2011), *Skills beyond School. The OECD Policy Review of Post-Secondary Vocational Education and Training. Swiss Background Report*. OPET, Bern; OPET (2012) Federal Office for Professional Education and Technology website, *www.bbt.admin.ch,* accessed January 2012.

United Kingdom

The UK Commission for Employment and Skills (UKCES) was launched in April 2008 with the aim of increasing the employer voice in the United Kingdom's VET system and promoting investment in skills to drive enterprise, jobs and growth. It is led by commissioners from large and small employers, trade unions and the voluntary sector. It also includes representatives of further and higher education institutions and from the Devolved Administrations.

Its strategic objectives are:

- To provide world-class labour market intelligence which helps businesses and people make the best choices for them.
- To work with sectors and business leaders to develop and deliver the best solutions to generate greater employer investment in skills.
- To maximise the impact of changed employment and skills policies and employer behaviour to help drive jobs, growth and an internationally competitive skills base.

UKCES works with government departments and agencies, as well as with researchers across the UK to develop an evidence base, to pool expertise and maximise the influence of research and labour market intelligence over policy and practice. The UKCES also funds and manages the Sector Skills Councils and oversees their relicensing process. As a UK-wide body, it helps ensure a strategic approach to skills development that overarches all four nations (with devolved administrations for education and training policy) of the UK.

Box 3.1 Industry-led bodies engaged in VET policy (*continued*)

A recent shift in the approach to employer engagement advocates that employers should own their skills agenda and develop their own initiatives, rather than relying on a policy agenda set by government with incentives for employers to join in. In 2011 the Prime Minister announced a fund of up to GBP 250 million to test out approaches that empower employers to take control of skills development. The UKCES is working closely with government to follow this approach.

Source: UKCES (2011), UK Commission for Employment and Skills website, *www.ukces.org.uk*, accessed December 2011.

The proposed body should have a clearly defined and important (either very influential advisory or decision-making) role in policy making. This would ensure that it has a real impact on VET policies and would encourage initial and sustained participation of employers and unions. Senior industry representatives are unlikely to give their time to official meetings if they do not see that they can have a large influence on policy and there are substantial benefits involved. This body could also take the lead on the development and regular updating of national skills standards and qualifications (see Chapter 5).

It would be sensible for this body to engage with policy making in VET both at upper secondary and postsecondary level. As argued in the earlier OECD review of VET at upper secondary level (Kuczera, Kis and Wurzburg, 2009), Korean vocational high schools would benefit from greater industry engagement both at national policy making level and at local level. Vesting a single industry-led body with responsibilities regarding both upper secondary and postsecondary level would have various benefits. It would help ensure coherence and continuity in the content of VET programmes at different levels. In addition, industry leadership overseeing VET at both levels would ensure that the skills needs of the economy drive policy development, rather than potentially fragmented institutional frameworks and their sponsoring bodies.

To maximise the effectiveness of such an industry-led body, there needs to be a framework for systematic dialogue with the government. Involving both ministries that hold responsibilities for postsecondary VET (MEST and MOEL) in the dialogue would be essential to improve co-ordination and coherence in national policies related to VET. It would also be easier to persuade industry representatives to attend a single forum, rather than talking separately to the different institutions and ministries dealing with

VET policy. Achieving effective co-ordination and collaboration across ministries remains a challenge in Korea. One of the benefits of this body could be to push for better co-ordination and collaboration. Making the body genuinely industry-led (rather than led by a ministry) would resolve the problem of which ministry should sponsor it.

Notes

1. Some of the arguments presented below echo those provided by the OECD review of VET in Korea (Kuczera, Kis and Wurzburg, 2009), as the challenges involved in engaging employers with the VET system are similar at secondary and postsecondary level. But this chapter gives more attention to the postsecondary level and reflects policy developments since the earlier review.

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Chapter 4

Quality assurance in junior colleges

Quality in junior colleges is much too variable at present. This chapter argues that quality assurance could be substantially improved through revised quality mechanisms and indicators.

In this chapter "quality" refers to the capacity of a programme, alongside previous education, to equip students with the skills required for successful labour market entry and a rewarding career over the long term.

Challenges

Variable and sometimes weak quality in junior colleges

According to interviews conducted during the visit, the quality of links between junior colleges and industry varies greatly across institutions. This is worrying, because high quality VET requires strong and consistent engagement of industry, as argued in Chapter 3. In Korea links between junior colleges and industry depend on individual institutions' willingness and capacity to establish them. National data on institutional practices are not available, but interviews with policy makers, employer associations and individual junior colleges suggest that many institutions have very weak links to industry. At the same time there are some encouraging counter examples. For example, in some junior colleges customised training programmes have been developed in collaboration with industry and students often participate in the training provided by companies. But these programmes apparently represent only a small share of postsecondary VET.

Industry involvement is lacking in various institutional mechanisms. First, the governance of junior colleges does not routinely involve industry representatives. For example, while there are various national requirements regarding the composition of governing boards of junior colleges, involving industry representatives is not mandatory. Second, the content of programmes is typically developed by teachers at the college and without industry involvement or consultation. Curricula are often academically focused and provide insufficient preparation for entry into the labour market. Third, workplace training is not systematically part of junior college programmes. This has various disadvantages, students do not benefit from the learning experience offered by a real workplace and teachers miss an opportunity to keep in touch with rapidly changing industry needs (on the benefits of workplace training see Chapter 7). As a result of patchy industry engagement, provision in some junior colleges may not adequately reflect employment opportunities (see Chapter 6 on student choice) and the content of programmes may not always be well-adapted to skills needs in the labour market.

The competences acquired by students are not usually adequately assessed during or at the end of the programme (see recommendation 4). There are various potential reasons for this. First, various stakeholders argued in interviews that teachers are reluctant to fail poorly performing

students because academic failure is generally not well-accepted in Korean culture. Second, junior colleges have few incentives to fail underperforming students, as they pay tuition fees, which constitute 65% of their funding (Kim, Woo, Ryu and Oh, 2011). These factors combined with weak quality assurance mechanisms mean that students may continue to graduate from some colleges even if they have learnt very little during their programme.

Government regulations require all postsecondary institutions to comply with certain requirements (*e.g.* regarding teaching staff and facilities), but these do not include certain factors that are critical to quality in VET, such as the involvement of industry in the governance and curriculum development of junior colleges.

Recent policy initiatives aiming to promote quality and accountability are welcome but some challenges remain

The government has introduced a series of measures to address the quality challenge. A website providing information to the public on individual institutions ("Academy Info") was created in 2008. Self-evaluation for junior colleges was introduced in 2010-11. An external evaluation and accreditation regime was implemented in 2010-12. Junior colleges that do not obtain accreditation will lose access to government funding as of 2014. While the new system of voluntary accreditation and evaluation for junior colleges is very welcome, it still leaves many gaps. The criteria for accreditation are the same as for universities and do not sufficiently reflect aspects of quality that are specific to postsecondary VET. The evaluation team consists of academics and the process does not involve industry representatives at any stage.

The government also introduced formula funding for junior colleges, designed to provide incentives to institutions to improve quality, but it is a major challenge for formula funding to establish indicators that adequately reflect quality. Current indicators used in the funding formula include: the employment rate of graduates (25%); the ratio of enrolment to the number of places allocated by quota (20%); income from industry relative to total income (5%); the ratio of full-time lecturers to the number required by law (10%); the ratio of the cost of education to tuition income (20%); the amount of scholarships relative to tuition income (12%); and indicators of academic credits earned by students (3%); and the rate of increase in tuition fees (5%) (MEST, 2011). These are mainly input indicators and therefore only weakly capture the extent to which programmes prepare students well for labour market entry and a successful career.

The government recently published a list of underperforming postsecondary institutions. Students from 17 junior colleges will face

restrictions in the amount of money they can borrow from the student loan programme, 15 junior colleges will lose access to government funds and two junior colleges have been closed down. While this initiative can address poor quality in the weakest institutions, it will only be effective in the remaining institutions if they believe they may be at risk of similar threats in the future, and if the criteria employed to identify underperformance can genuinely identify weak quality.

Recommendation 3

Improve quality assurance in junior colleges by:

- ***revising quality indicators used in funding allocation and accreditation to better reflect aspects of quality relevant to vocational programmes;***
- ***revising mandatory requirements for junior college programmes;***
- ***improving steering instruments that encourage continuous quality improvement.***

Supporting arguments

This recommendation is supported by three arguments. First, stronger quality assurance would improve employment outcomes for junior college graduates. Second, it would require quality indicators adapted to the requirements of postsecondary VET. Finally, this could be implemented through revised mandatory requirements and improved steering instruments.

Stronger quality assurance would improve employment outcomes for junior college graduates

Quality assurance can ensure that all institutions and programmes meet minimum quality standards. This combined with rigorous assessments of students (see recommendation 4) truncates the distribution of skills among graduates at the lower end. Conversely, weak quality assurance and the lack of rigorous assessments of students makes the skills of degree holders less transparent to employers. As argued in Box 2.4, if junior college degrees fail to signal graduates' occupational skills, it is rational for employers to prefer university graduates, even if the job does not require university level skills and the junior college graduate holds a degree in a relevant field of study. Conversely, with stronger quality assurance employers could be sure that all graduates from a given programme have acquired the key competences required for a particular occupation, regardless of which institution they

attended. Degrees would act as a proof of occupational competences, rather than a mere indicator of where the student stood in the ability distribution at the end of high school. Then it would make sense for employers to hire junior college graduates for jobs in their field-of-study, rather than hiring university graduates. This is because junior college graduates would already have a set of key occupational skills, would need less training when entering the company and would be productive more quickly than university graduates.

Improving the quality assurance system for postsecondary VET requires changes in at least two areas. First, quality indicators used to underpin quality assurance mechanisms (*e.g.* funding allocation, accreditation) should be improved. Second, a combination of regulations and incentives should ensure that institutions meet minimum standards and seek continuous improvement. These proposals are presented below.

Stronger quality assurance requires indicators adapted to the requirements of postsecondary VET

Quality indicators used in the quality assurance process need to be adapted to postsecondary VET. While some quality indicators are relevant for both academic and vocational programmes (*e.g.* employment rate of graduates), others are not. Criteria with a strong academic focus (*e.g.* teachers with PhDs) are important for universities but may be unnecessary or even sometimes undesirable for vocational programmes – since teachers with PhDs could encourage institutions to become more academic, and therefore less concerned to meet labour market needs. In Korea the share of full-time lecturers is a quality indicator used in formula funding, but this discourages institutions from employing staff who work part-time in industry and part-time as lecturers, even though this type of employment would help ensure that lecturers continuously update their occupational skills and maintain regular contact with companies. Consideration should be given to removing this indicator from the formula for junior colleges. Conversely, some criteria are very important for vocational programmes but less so for universities (*e.g.* teachers with recent industry experience). To reflect this, quality indicators must be carefully selected taking account of data availability, potential adverse effects and other contextual factors.

Currently used indicators should be adapted to reflect those input factors that are most relevant to vocational programmes, for example:

- *Links with industry:* Regular dialogue with local industry representatives is important to ensure that provision is relevant to local labour market needs. Industry participation on institutional governing boards is an indicator of quality – a widespread practice for example in the United States, but currently rarely used in Korea.
- *Student participation in workplace training*: As argued in the Chapter 7 on mandatory workplace training, the inclusion of mandatory workplace training in all postsecondary VET programmes has a number of benefits. The inclusion of workplace training in curricula or the level of participation in workplace training are therefore good indicators of the quality of a programme.
- *Industry experience among teachers*: Ensuring that teachers are familiar with the rapidly changing requirements of modern industry is a major challenge (OECD, 2010). Teachers should have work experience relevant to the subject they teach and have opportunities to regularly update their knowledge and skills (*e.g.* by spending time in workplaces).

Quality indicators should also include more and better output measures, such as various measures of employment outcomes. The recent move from employment rates self-declared by institutions to data collected through the Health Insurance Register is welcome, and provides a more statistically robust basis for quality judgments. The currently used employment indicator, available at the level of institutions, should be broken down to identify the labour market outcomes for individual programmes. More subtle indicators would capture, for example, the extent to which graduates find a job that is related to their study programme and adequately uses their skills. In Austria and Denmark, as part of the accreditation process, programmes must demonstrate labour market relevance (see Box 4.1). In Denmark this approach may reflect the fact that the postsecondary VET programmes concerned are largely publicly funded. In Austria *Fachhochschule* programmes receive public funding but also require tuition fees from students.

Box 4.1 Ensuring labour market relevance in the accreditation process

Austria

FH (*Fachhochschule*) programmes offer vocational training at higher education level. When applying for accreditation, applicant institutions must provide an analysis of labour market relevance and prove that the programme is needed to meet labour market needs. There are different requirements for the accreditation of new programmes and for the re-accreditation of existing programmes.

For the accreditation of a new programme the analysis must be conducted by an independent institution. The analysis has to assess labour market demand for the programme based on macro-economic data (*e.g.* sectoral employment, unemployment rates), an assessment of employment opportunities for graduates (*e.g.* using interviews with HR managers in relevant companies). In addition, the analysis must show that the programme will attract enough students by setting out the geographical areas from which the programme might attract students, describing existing related postsecondary education and training programmes and their recent enrolment numbers, and estimating how many students may enrol in the requested new programme.

For re-accreditation of existing programmes the applicant institution may conduct the analysis itself. The analysis of labour market demand for an existing programme must analyse the employment outcomes of graduates, information on the relevance of their studies to the jobs held by graduates, an assessment of the course contents by the graduates with regard to their current employment situation, and institutions must collect feedback from companies and organisations that employ graduates. Finally, institutions must provide information on the number of applicants and enrolled students, as well as updated information on related postsecondary programmes.

Source: FH Council (2010), Guidelines of the Fachhochschule Council for the Accreditation of Bachelor's, Master's and Diploma Degree Programmes, *www.fhr.ac.at/fhr_inhalt_en/00_documents/AR_08102010_Version1.1.-en.pdf*

Denmark

Re-accreditation criteria for existing postsecondary VET programmes include indicators of labour market relevance. First, the programme must demonstrate that there is a need for graduates of the study programme in the labour market, and that local provision is based on dialogue with employers and other relevant stakeholders concerning current labour market needs and expected trends. Second, there should be enough relevant work experience placements for all students (such placements are mandatory).

Source: Danish Evaluation Institute (2010), External Evaluation of EVA 2010, *www.eva.dk*

It is also important to carefully consider the incentives created by performance indicators. Among the indicators used in formula funding, for example, the employment rate encourages junior colleges to ensure that their programmes lead to jobs. But its effect might be attenuated by another indicator, the ratio of enrolment to number of places allocated by quota. The latter indicator encourages junior colleges to fill all places allocated by quota, even if they may not have good employment outcomes.

Stronger quality assurance can be implemented through revised mandatory requirements and improved steering instruments

Minimum quality standards can be implemented across all programmes and institutions either by inclusion in accreditation criteria or by inclusion as criteria for government authorisation to operate. In Korea the government already requires all institutions and programmes to meet certain requirements, so if accreditation remains voluntary, the set of minimum requirements used for government approval should be revised to include other key aspects of quality (*e.g.* industry involvement in programme development).

Alongside minimum quality requirements for institutions, appropriate "steering" arrangements may give incentives for institutions to aim for continuous quality improvement beyond minimum requirements. This may involve steering instruments such as performance-related funding or performance contracts (OECD, 2008). In Denmark development contracts provide a framework for creating improvement plans and measuring progress (Box 4.2).

The potential of government financial incentives for junior colleges is limited, at least in the current context, as the weight of government funding in the income of junior colleges is small – government sources accounted for less than 10% of junior college income in 2010 (MEST personal communication February 2012), and only 80 out of 143 junior colleges received government funding through formula funding or grants to "colleges of excellence" in 2011 (MEST, 2011). Recognising this, key minimum quality standards are better enforced through mandatory requirements rather than encouraged through steering instruments.

The behaviour of junior colleges would also be affected by any changes in student choice (on improving and balancing see recommendation on student choice). Junior colleges have strong incentives to respond to student choice. So if student choices are better aligned to labour market needs and junior colleges adapt their provision accordingly to attract students, then the mix of programmes in junior college should be better aligned to labour market needs.

Box 4.2 Development contracts in Denmark

Each postsecondary institution concludes a development contract with the Ministry of Science, Innovation and Higher Education. Development contracts are agreed following a dialogue between both parties and are valid for three years. They set out specific objectives focusing on quality assurance, alignment of policy objectives and the performance of the institution, openness and documentation of institutional performance, managerial focus on meeting ministerial demands in relation to policy objectives, dialogue between the ministry and the institution on priority of objectives, strategies and monitoring of fulfilment of demands.

Institutions commit to meeting a number of demands, formulated in terms of indicators and milestones. Some indicators are centrally defined and thus obligatory for all institutions, while others are defined locally. Every year the institutions prepare a report on the fulfilment of demands. If an institution fails to fulfil the demands set out in its contract, there may be a follow-up procedure, although there are no direct economic consequences.

Source: Danish Agency for Higher Education and Educational Support (2012), *Skills beyond School: OECD Review of Post-Secondary Vocational Education and Training – National Background Report for Denmark, http://en.fivu.dk/publications/2012/oecd-review-skills-beyond-school/oecd-review-skills-beyond-school-denmark.pdf*

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Chapter 5

Degrees and qualifications

This chapter notes that postsecondary vocational education and training (VET) qualifications do not always transparently signal particular competences to potential employers, undermining their labour market value. To resolve this problem, the chapter recommends that curricula should follow common standards, students rigorously assessed, and junior college programmes linked to national competency standards where possible.

Challenge

Junior college degrees inadequately signal skills to employers

Employers do not appear to place much trust in junior college degree certificates as a proof of occupational skills, instead they seem mainly to rely on educational attainment (*i.e.* university versus junior college level degree) to judge potential recruits. This is not surprising given the lack of rigorous continuous or final assessment. Various stakeholders reported to the review team that in some extreme cases students register in a junior college and subsequently graduate with very little work input.

Qualifications also inadequately signal skills

According to a survey of 2 000 companies (Korea Labour Institute cited in Kang, 2002), employers recruiting workers at the beginning of their career considered qualifications a less important factor in recruitment choices than applicants' academic ability, signalled by their grade point average. The benefits of holding a qualification are also limited for those already in employment. The survey found that just over half of the companies gave higher wages to qualification holders and less than half offered other benefits (*e.g.* access to education and training, transfer to other positions). When assessing the difference between the work competences of qualification holders and those not holding a qualification, the proportion of companies perceiving no significant difference was higher than the proportion of those considering qualification holders more competent.

Weak rationale for the current arrangement of postsecondary VET programmes and national (technical) qualifications

Postsecondary vocational programmes lead to a degree certificate. Separately individuals may take an examination to obtain a national (technical) qualification (NQ – this includes national technical qualifications administered by MOEL and national non-technical qualifications administered by other ministries). But postsecondary vocational programmes typically provide insufficient preparation for a NQ examination. Although candidates for some NQs (in particular some non-technical NQs) are required to hold a relevant education degree, those aiming to obtain a NQ must prepare separately.

The "parallel system" of degrees and qualifications does not seem to have a strong rationale. Instead it seems to reflect underlying institutional structures with junior college programmes and degrees managed by MEST on the one hand, and NQs managed by MOEL (and other ministries for

non-technical NQs) on the other hand. The challenge is the same for high school vocational programmes, as argued in the OECD review of high school VET in Korea (Kuczera, Kis and Wurzburg, 2009). Although the existence of "parallel systems" is less of a problem for postsecondary VET graduates than for individuals with lower levels of education, it remains a source of inefficiencies that could be avoided (over 60% of qualification holders had a high school diploma or below, and only 13% of qualification holders were postsecondary VET graduates (Kang, 2002)).

In areas covered by both NQs and junior college programmes, the overlap is a source of inefficiency. First, students or graduates of junior colleges have to invest additional time and money to prepare for a NQ test. Second, national standards are developed for the NQ but not systematically taken into account in the development of curricula in junior college programmes. The government has recognised this challenge and is exploring ways to converge towards a unitary system. Qualifications delivered upon successful completion of a programme are being developed and the pilot is expected to be implemented for a selected set of qualifications in 2012/13.

Recommendation 4

Make degrees more transparent to potential employers and improve efficiency in the VET system by:

- ***ensuring that curricula in junior college follow common (national) standards;***
- ***conducting systematic and rigorous assessments of learning outcomes in junior college programmes;***
- ***linking junior college programmes and degrees to national competency standards and national (technical) qualifications whenever relevant.***

Supporting arguments

This recommendation is supported by two arguments. First, common core curricula and rigorous assessments improve the signalling function of degrees. Second, linking degrees to national (technical) qualifications would remove wasteful duplication.

Common core curricula and rigorous assessments improve the signalling function of degrees

As argued in Chapter 2, when employers are less certain about the skills of those holding a certain degree, the degree's signalling value is distorted – rather than signalling the applicant's occupational skills as a tour guide, a junior college degree in tourism may merely signal that the applicant did not have high enough KSAT scores to enrol at a university, making them a less desirable recruit. Thus, the failure of degrees to reflect skills in a way that is transparent to employers can aggravate the "overeducation" and mismatch problem. Improving the signalling function of degrees requires strong quality assurance (see recommendation on quality assurance in junior colleges) to ensure that a given credential signals the core set of skills needed for the job. This requires two things.

First, a particular degree programme should cover this core skill set regardless of the institution at which it is taught. Curricula in junior college programmes should be based on national standards, establishing a required core set of competences that must be included. Part of the programme content would thus be defined centrally, while part of the content might be defined by the institution, allowing junior colleges to adapt programmes to local needs. The centrally defined content ensures that graduates of a given programme share a core set of skills regardless of institution, making degrees comparable across institutions and more transparent to employers.

Second, it is essential to check whether students have acquired the skills targeted by their programme. Only students who perform above a certain threshold would be allowed to graduate – and this threshold should be sufficiently demanding so that employers can be sure that graduates have acquired the core set of skills needed for their occupation. In addition, the outcomes of the assessment may be graded (*i.e.* several levels are defined) so that degrees signal to employers the occupational skills of graduates beyond the minimum threshold. Rigorous assessments of students are widespread in postsecondary programmes in many other OECD countries (see Box 5.1).

Box 5.1 Student assessment in postsecondary VET

Universities of Applied Science – Austria

All professional bachelor and master programmes are accredited and evaluated by the Council of Universities of Applied Science (*Fachhochschulrat*). Programmes are modularised, and each module prescribes qualifications and competences that students should have obtained upon completion of the course. Each institution can develop curricula for the programmes it provides, but each programme must be accredited and the proposed curricula must be approved as part of the accreditation procedure.

Similarly, each institution can set its own examination procedures, but these must be approved through accreditation. Students are tested typically after completion of the relevant module to check whether they have acquired these skills. Examination assignments are developed by teachers, based on the curriculum. At the end of the programme, students prepare a diploma thesis in an area relevant to their occupational field. They also must pass an oral examination in front of a board of examiners. The composition of the examination board must be approved in the accreditation process.

Source: FH Council (2010), Guidelines of the Fachhochschule Council for the Accreditation of Bachelor's, Master's and Diploma Degree Programmes, *www.fhr.ac.at/fhr_inhalt_en/00_documents/AR_08102010_Version1.1.-en.pdf*

Short and medium cycle postsecondary VET programmes – Denmark

Postsecondary VET programmes include both internal and external examinations. External examinations must cover the main content areas of the programme. Students must be assessed by external examiners for at least half of the programme content (measured in academic credits).

Each postsecondary VET programme must contain at least three examinations:

- An internal or external examination before the end of the second semester to assess whether the student has achieved the learning outcomes defined for the first year of study.
- An internal or external examination after the student's work placement (such placements are mandatory) to assess whether the student has achieved the learning outcomes defined for the work placement.
- An external examination related to the final examination project.

The results of all the examinations are used to assess whether the learning outcomes of the education programme have been achieved.

Source: Danish Ministry of Science, Innovation and Higher Education, personal communication (February 2012).

Junior colleges should be required (*e.g.* through accreditation criteria) to conduct systematic and rigorous assessment of students because in the absence of such requirements most institutions are unlikely to do so. Most of the funding in junior colleges comes from tuition fees, which creates strong incentives to retain students and allow them to progress rather than failing them and facing a risk of students dropping out, particularly in a context of falling numbers of young people. Some stakeholders also told the review team that the tendency to let students pass is due to academic failure being seen as unacceptable in Korea.

Industry involvement in the development of assessment criteria and their participation in assessments (*e.g.* as members of the examination board) increases transparency and credibility of degrees in the eyes of employers. The same holds for the NCSs and NQs: they need to be developed and updated with active industry involvement to ensure that they are relevant and meaningful to employers.

Rigorous assessments in junior college programmes are a pre-requisite for the award of "completion-based" qualifications. It is hard to eliminate duplications (*i.e.* the need for junior college graduates to separately prepare for NQ examinations) as long as rigorous assessments in junior college programmes are lacking. National (technical) qualifications are awarded on the basis of standard-based examinations. Junior college degrees have to be based on similarly rigorous assessments to gain credibility and transparency in the eyes of employers.

Linking degrees to national (technical) qualifications would remove wasteful duplication

Currently there is no one-to-one match between degrees and national (technical) qualifications in Korea. There are two broad options for simplification. One option is to offer "completion-based" qualifications in fields where there is an overlap between national (technical) qualifications and junior college programmes: the curriculum should build on corresponding national standards, prepare students for rigorous assessments at the end of their programme, following which they would obtain a national (technical) qualification. In the remaining fields degrees and national (technical) qualifications would remain separate. This should occur only if degrees and NQs are clearly different, so that degree holders typically do not aim to obtain a NQ. In Switzerland, for example, there are two pathways to a postsecondary VET credential. On the one hand, individuals may take the examination for a "federal PET diploma" (professional education and training (PET) is the term commonly used for postsecondary VET in Switzerland). Examination contents, assessment methods and criteria are

nationally defined. Individuals may prepare for the exam as they wish and various preparation courses are offered. On the other hand, individuals may complete "PET college programmes" and obtain a "PET college degree" after rigorous assessment, which is based on national assessment criteria and methods. The two pathways are separate, but both offer recognised credentials (which employers regard as credible proofs of skills) and unnecessary overlaps are minimised.

Another option is to create a unitary system with a one-to-one link between degree programmes and national (technical) qualifications. In effect this would imply creating a national (technical) qualification for junior college programmes that currently do not have an obvious related qualification. Denmark in effect has a unitary system. Curricula in postsecondary VET programmes follow standards that are shared by all institutions offering a particular programme, with some of the curriculum allowed to vary between institutions. Students are rigorously assessed and upon successful completion of the programme and passing the required tests, they obtain a degree certificate that is recognised by employers (Danish Agency for Higher Education and Educational Support, 2012). If such a system were implemented in Korea (as it is now piloted with "completion-based qualifications"), it might allow for the possibility of taking just the test for a NQ without completing an entire junior college or polytechnic programme. This would leave open the possibility of more efficient modes of provision, such as shorter preparation courses for those with relevant work experience, allowing some recognition of prior learning.

Whichever system is chosen, the following factors should be kept in mind.

- *No parallel consultations.* Industry representatives should not be approached by multiple consulting bodies about the same issue. They should participate in the development of standards and assessments for a particular occupation or field, but not separately for the body dealing with NQs and another body dedicated to junior colleges.
- *Avoid duplications in terms of preparation for examinations*. The system should avoid junior college graduates preparing separately for a NQ examination because a particular NQ is relevant for them but they did not receive sufficient preparation for the examination during their degree programme. If a national (technical) qualification cannot be obtained through a junior college programme, it should be clearly different in its scope so that it typically does not attract junior college graduates.

- *Recognised credentials for junior college graduates*. Students who successfully complete their programme and pass rigorous assessments, should obtain a credential that is recognised by employers as a meaningful proof of occupational skills. Depending on whether a unitary system is chosen or not, this may be called a NQ or a degree, the crucial point is that junior college graduates should hold a credential that is widely recognised in the labour market.

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Chapter 6

Student choice in postsecondary vocational education and training

The preferences of students largely drive the mix of provision in junior colleges, so there is some risk that they do not reflect labour market needs. To address these issues, the chapter recommends further enhancing the career information provided to prospective students and balancing student choice with signals of employer needs.

This chapter examines the way in which the mix of provision (*i.e.* the range of programmes provided and the number of students in each programme) is determined in postsecondary VET. References to junior college programmes in this chapter concern general programmes and exclude specialised programmes (*i.e.* advanced specialist courses, trust courses, and customised education courses). General programmes account for over 90% of junior college enrolment (4% of junior college students enrol in advanced specialist or trust courses).

Challenge

Junior college provision is driven by student preferences and may therefore not match labour market needs

The mix of provision in junior colleges is mainly driven by student preferences for study programmes. Tuition fees make up two thirds (65%) of the total income for junior colleges (Kim, Woo, Ryu and Oh, 2011). Only 80 out of 145 junior colleges receive funding from formula funding or grants for "colleges of excellence", for the remaining 65 colleges the proportionate role of tuition fees is even higher. Most junior college provision is private: in 2010 93.8% of junior colleges were private and enrolled 97.2% of junior college students (MEST, 2010). Demographic decline in the number of young people is intensifying competition for students and some junior colleges are fighting for survival. Junior colleges therefore have little incentive to scale down programmes with poor labour market prospects as long as there is student demand for them. Recently, the government has introduced measures to encourage more attention to labour market needs. The recently introduced formula funding by the government takes into account indicators of employment outcomes, but its impact is limited by the small weight of income from formula funding in the budget of junior colleges. The government has also identified and published a list of under-performing colleges – putting intense pressure on them to improve performance to avoid closure. While it is too early to assess the impact of these new measures, overall student demand remains a stronger driver of the mix of provision than labour market relevance.

Weaknesses in the information available to students

Given that student preferences play a major role in determining provision in Korea, it is essential to ensure that students and their families make decisions based on relevant and high quality information. While there are various information sources, some gaps remain.

All tertiary education institutions are legally required to publicly disclose a set of indicators determined by the government. While this initiative is welcome, the law only requires that information is available for individual institutions, there are no such requirements for programmes within each institution. This makes it impossible for prospective students to compare the labour market outcomes of different programmes, which would help them make better informed career choices. Also, the publication of performance indicators by institution risks distorting student choices in a way that may actually worsen the mismatch. As students know the ranking of institutions (and know that employers are aware of these rankings too), but have no quality indicators of different programmes within institutions, they are more likely pay more attention to the institution chosen and less to the kind of programme. This increases the risk of intensifying the search for high status institutions and increasing the "inflation" in education and the mismatch problem.

The indicators required by the law cover, among others, what graduates do (employment, further studies), admission procedures, tuition fees, teaching staff and research. These create a good basis, but they could be enriched to provide better information to prospective students, in particular regarding the labour market relevance of programmes within institutions. More nuanced indicators, such as whether graduates find a job in a sector relevant to their study programme and the wages of graduates would help prospective students make better choices.

A number of surveys could be better exploited. The Youth Panel Survey, the Graduates Occupational Mobility Survey and the High School Graduates Occupational Mobility Survey collect very rich data on the educational background and labour market experience of young people. These surveys were introduced between 2001 and 2011 with the objective of providing data for researchers, informing policy makers and for career guidance and counselling purposes. However, the career guidance potential data does not seem to be fully realised. Websites designed to guide students in their choice of postsecondary education (*e.g. ipsi.kcce.or.kr*) focus on explaining admission requirements and procedures at different institutions, with little or no attention to the outcomes of different programmes within each institution.

Preferences for higher level degrees may contribute to the mismatch

Many stakeholders reported to the review team that students, parents and employers often prefer programmes leading to a higher level degree. Typically a four-year degree is seen as preferable to a two-year degree, which is in turn preferred to a high school diploma. These preferences may reflect a combination of three factors:

- Higher level degrees may lead to better employment prospects because they equip students with higher level skills and make them more productive ("productivity effect"), which employers see and reward with higher wages.
- Higher level degrees may lead to better employment prospects because employers perceive the degree as a signal of a characteristic the applicant had prior to postsecondary studies, such as ability or determination ("signalling effect"). For example although the content of a university degree may be less relevant for a company, it may consider that the strongest high school graduates go to university rather than postsecondary VET, and are therefore preferable.
- Higher level degrees may grant higher social status irrespective of employment outcomes.

As argued earlier, some indicators suggest that the second and the third factors play a relatively important role in Korea. The degrees delivered by postsecondary VET programmes (and indeed by university programmes) send a weak signal of the work-related skills and thus productivity of graduates, as the acquired competences are not assessed in a way transparent to employers (see recommendation 4). When considering potential recruits, employers are more likely to pay attention to what is clearly visible to them: the hierarchy of different levels of education and between institutions at the same level. This is then reflected in employment probabilities and wages, so that higher level degrees yield better employment prospects even though the skills could have been acquired through a lower level programme. In addition, it is as previously discussed a widely held view that parents and students in Korea have a strong preference for academic pathways.

The first effect (productivity effect) is desirable in terms of achieving a match between education and training and labour market needs. But both the "signalling effect" and the search for higher social status create incentives for students to pursue higher level programmes even if the skills required for a particular job could be acquired through a lower level programme. The signalling effect means that for employers, in turn, it will be rational to prefer graduates with higher level degrees. This is worrying for several reasons. First, it contributes to the mismatch between VET provision and labour market needs in terms of education level and field-of-study. This is because some higher level programmes may be able to attract students even if they do not deliver skills in need in the labour market, while lower level programmes with labour market relevant content may struggle to attract students. Second, this may lead to unnecessarily long training programmes and thus inefficient provision. This is wasteful for families who pay for tuition and for young people who miss out on work opportunities. It is also

suboptimal for society as a whole. The signalling and the social status benefits are by definition relative to the educational attainment and status of other workers, so the desire to be placed higher than others risks leading to a general "inflation" in the duration of studies and educational attainment, without guaranteeing a better match to labour market needs. The OECD review of tertiary education in Korea (Grubb *et al.*, 2009) suggested that there are many cases of university graduates taking jobs designed for postsecondary VET graduates, who in turn take jobs that could be filled with upper secondary graduates.

Recommendation 5

Improve the responsiveness of VET provision to labour market needs by:

- ***further enhancing career information available to prospective students;***
- ***balancing student choice with signals of employer needs in junior colleges.***

Supporting arguments

This recommendation is supported by four arguments. First, student choice is an important factor in determining the mix of provision but has some limitations. Second, high quality career information can help align student choices to labour market needs. Third, some non employment-related influences that contribute to the mismatch may be addressed indirectly. Finally, student choice can be balanced by employer needs through compulsory workplace training.

Student choice is an important factor in determining the mix of provision but has some limitations

In principle three major actors may drive the mix of postsecondary programmes and their content: employer demand, government policy or student (and parental) preferences. In practice it is normally some combination of these three sources that drives provision. Student choice and employer demand may be brought into balance in a market for apprentices, since every apprentice placement by definition involves both a willing employer and a willing student, as in dual training programmes (*e.g.* apprenticeships in Austria, Denmark, Germany and Switzerland). Following a similar principle, in Switzerland many postsecondary VET programmes require students to have relevant work experience, thus student choices are balanced by jobs available in the labour market. Such

mechanisms create an automatic link between labour market opportunities and postsecondary provision. When provision is driven by the government (or other public authorities), it is typically based on an assessment of skills needs. In polytechnics in Korea these assessments are used to plan the mix of provision. Polytechnics can offer places in each programme according to quotas defined annually by a government body, following an assessment of skills needs. Some countries (*e.g.* Ireland, Finland) use forecasts as a broad guide to inform students and VET institutions. Finally, student choice drives some postsecondary VET programmes, such as junior college programmes in Korea.

As set out in the Learning for Jobs review of VET (OECD, 2010a), the optimal balance between these different factors depends on who pays, student age, breadth of the programme and predictability (see Box 6.1). The substantial role of government funding in polytechnic programmes provides the rationale for the relatively limited weight given to student preferences and the greater weight given to government-led assessments of skills needs. Conversely, junior colleges are mainly funded through tuition fees. This might suggest that student choice should play the major role in determining the mix of provision.

Box 6.1 What factors should determine the mix of provision?

Given that the benefits of VET are realised both by students and employers, an effective VET system needs to reflect both employer demand and student preference. The relative weight given to these factors varies across countries. The optimal balance depends on factors including:

- *Who pays:* If students pay most or all of the cost of VET courses – for example at postsecondary level – then the mix should be equivalently dominated by (informed) student preference. At any level, if employers wish to influence the mix of provision, they should be willing to contribute to the training, typically through the provision of workplace training and experience.
- *Student age:* Younger, school-age students may be less able to make longer-term career decisions, so student preferences for certain vocational programmes should be balanced by attention to labour market outcomes, particularly where provision is free of charge to the student.

Box 6.1 What factors should determine the mix of provision? (*continued*)

- *Breadth and orientation of programme:* Programmes with a large element of general skills, often designed to prepare students for the next level of education, as well as direct labour market entry, need not be constrained so tightly by employer demand. Conversely, in programmes that are designed for direct labour market entry, that contain much occupation-specific content and that rarely lead to further studies, employability should be a major factor determining provision.
- *Predictability.* In some sectors, like education and health care, labour force requirements may be more predictable than in some others. In these areas it may be more reasonable to match provision closely to expected requirements (recognising that migration can make a difference).

Source: OECD (2010), *Learning for Jobs*, OECD Reviews of Vocational Education and Training, OECD Publishing. doi: *10.1787/9789264087460-en.*

In the economist's ideal world students would observe the labour market outcomes of different educational pathways and wages would reflect the productivity of workers. They would then make choices after careful consideration of costs and benefits, leading to a good match between VET provision and labour market needs. In practice, however, a number of factors suggest that in Korea the way student choice currently drives provision may contribute to the mismatch between postsecondary programmes and labour market needs. As discussed below, policies can tackle this challenge by ensuring that student choice is well-informed and by balancing student choice with signals of employer needs.

High quality career information can help align student choices to labour market needs

Choices made by students who lack adequate information on programmes and their outcomes may aggravate the mismatch between postsecondary provision and labour market needs. To address this challenge, prospective students need high quality, up-to-date information on the characteristics of different programmes, the occupations they target and the employment outcomes of graduates. Data on employment outcomes (*e.g.* employment rates, income) send an important signal of labour market needs. Such information can help minimise the influence of uninformed prejudices about vocational pathways and certain occupations.

In Korea rich data are available on the educational and labour market experience of young people, thanks to the introduction of various surveys since 2001 (Youth Panel Survey, Graduates Occupational Mobility Survey, High School Graduates Occupational Mobility Survey). To make the best use of these data, they should be available to students and their families, and career guidance professionals in a user-friendly format. This might be implemented through a career guidance website (see the Danish example in Box 6.2), providing information career options, the views on study programmes and the labour market outcomes of recent graduates from different programmes.

To achieve the best results, information on employment outcomes and other quality indicators of postsecondary programmes should be available for individual programmes and institutions. The current system only allows a comparison of institutions.) Making information available for individual programmes within institutions would allow students to make better informed choices of programmes, as well as institutions.

Box 6.2 Career information in Denmark

The national guidance portal (the Education Guide) provides up-to-date information on jobs, education and training programmes and careers. It is targeted at young people and adults, as well as career guidance practitioners. The website contains detailed information on every education and training programme, including a description of the programme, admission requirements and rates, employment and further education opportunities. There is also detailed and up-to-date information on a wide range of occupations, including a description of the occupation, typical workplaces where you can work in that occupation, average income of recent graduates, current employment opportunities in different regions of the country, and future labour market opportunities – the last part takes into account ongoing and potential future changes in the industrial structure in the country and describes in what other sectors workers might find employment.

Source: Education Guide (*Uddannelses Guiden*) (2011), Danish Education Guide (*UddanelsesGuiden*) website, *www.ug.dk*, accessed November 2011.

Some non employment-related influences that contribute to the mismatch may be addressed indirectly

Student choices of careers and education pathways are not exclusively based on income and employment prospects, but also on preferences not related to labour market outcomes. For example, a now somewhat old survey (data from 1994 in Lee, 2001) found that "cultivating character" and

"better marriage prospects" were seen by Korean parents as very important reasons for educating their children. Factors like individual tastes and interests also play a significant role. As argued in a study of US college students (Culpepper, 2006), coercing students into careers they do not want would be counterproductive and would risk damaging their engagement in the programme. More broadly speaking, employer interests need to be kept in balance with those of society at large, including the interests of students in pursuing enjoyable and fulfilling jobs – and at least avoiding the most unpleasant jobs.

A cultural preference for high status academic education may be gradually modified in a constructive way by various policy measures. Employer attitudes to degrees and skills might be influenced through a qualifications system that provides clearer signals of skills levels (see Chapter 2). It is possible to influence preferences indirectly by enhancing the benefits (*e.g.* in terms of employment) of vocational programmes. Strengthening the responsiveness of VET programmes to labour market needs, promoting the quality of training and making quality more visible to all stakeholders would help improve the status of vocational programmes. As argued in Chapter 2, various levers need to be pressed simultaneously to generate a virtuous circle of improvements. Such changes take time to happen, but policies addressing these factors can push the system in the desired direction.

Student choice can be balanced by employer needs through compulsory workplace training

As argued above, student preferences should not be the only factor driving the mix of provision. For different reasons, employer interests should not be the only determining factor either. Employers may want very narrow skills in occupational niches limiting the capacity of their staff to move on to other jobs, while the interest of students is to have wider skills that open up their career options. Skills shortages, as perceived by employers, may occur in industries in structural decline that offer limited career prospects and are therefore wisely shunned by potential recruits, or in jobs that are perceived as "low wage traps". While employers may perceive a shortage of workers in "three D jobs" (dirty, difficult, dangerous), young people may sensibly prefer to choose occupations with more pleasant conditions. The VET system has to find a way to bring into balance the sometimes conflicting interests of employers and those of students.

Student choice may be balanced by signals of employer needs in two major ways: by guiding training provision through an assessment of skills needs or by constraining provision to fields where employers offer

workplace training. As argued in the Learning for Jobs comparative report (OECD, 2010a) and summarised below, assessing and forecasting skills needs is difficult and using workplace training to balance student choice is preferable in most occupations.

An assessment of labour market demand may be based on consultations with employers and unions on current skills and/or long-term needs, or forecasts prepared by independent bodies. The results of such assessments can be used as a broad guide by governments and public agencies, or serve as a basis for planning the provision of VET programmes (for more information on assessing future skills needs see OECD, 2010a). In Korea the mix of provision in polytechnics is strongly shaped by such external assessments of skills needs. They may also be used for the authorisation of new programmes. In Belgium-Flanders, for example, close attention is given to labour market relevance before an institution can launch a new programme. The accreditation process examines whether a similar programme is already offered in the country, region or city; and whether there is evidence of labour market demand for additional graduates from that particular programme. In addition, tertiary institutions often have an advisory board for each programme, which includes employers (Kis, 2010).

Creating reliable forecasts is challenging. Skills demand depends on numerous factors, many of which are difficult to predict (*e.g.* technological progress, global economic conditions and government policies). Evaluations of forecasting models suggest that they can provide useful indications on broad trends, but are less reliable at the level of specific occupations (Neugart and Schömann, 2002; Sexton, 2002; Barnow, 2002; Richardson and Tan, 2007). In some specific areas, such as healthcare and education, forecasts may play a more important role, as they can be linked to more predictable (primarily demographic) demand trends and involve the state as a dominant employer.

Alternatively, employer needs and student preferences may be brought into balance by using the availability of workplace training as a signal of labour market needs. Given the difficulties described above and the various benefits of workplace training (see Chapter 7), this option is often preferable. One way to build in an element of labour market needs into VET provision is to limit the offer of programmes to those in which employers are willing to offer some workplace training. In apprenticeship programmes student choices are naturally limited to programmes in which employers are willing to offer substantial workplace training over several years. In Korea, given the currently limited involvement of employers with the VET system, a first step could be to use employer willingness to offer a relatively short period of workplace training as an indicator of labour market relevance (see the last recommendation). Following a similar OECD recommendation

(Kuczera *et al.*, 2008) Sweden is currently implementing a reform that makes work placement compulsory in upper secondary VET programmes (see Chapter 7). The logic of doing this is to make labour market relevance an influencing factor in the offer of programmes. Even though the duration of the work placement may be short, it means that a programme cannot run unless it is relevant enough to attract employer support for at least a modest work placement.

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Chapter 7

Mandatory workplace training in junior college programmes

Although there are major benefits from workplace training for both students and companies, the use of workplace training in junior college programmes is currently patchy. This chapter recommends that workplace training should become mandatory in junior college programmes, as in polytechnics, and such workplace training should be supported by quality standards and a clear legal framework.

Challenge

At present participation in workplace training is optional for junior college students and there is wide variation across institutions and programmes in participation rates. There are diverse arrangements for collaboration between junior colleges and companies with some colleges offering customised training programmes that follow the needs of particular companies, while others only have very weak links with companies. But many stakeholders have argued to the visiting OECD team that the use of workplace training is generally limited in junior college programmes.

Quality control of workplace training for junior college students varies across institutions and is often weak, according to interviews conducted during the review visits. When workplace training follows the interests of individual companies with little or no quality control, there is a risk that students may be used as cheap unskilled labour and learn little, or else acquire skills that are narrowly firm-specific. The challenge of ensuring the quality of workplace training in VET programmes has also been recognised by the Korea Research Institute for Vocational Education and Training (KRIVET), which is developing guidelines for companies offering workplace training.

Participation in workplace training is not systematically recognised in junior college credits, reducing the incentives for students to search for workplace training opportunities. The lack of recognition in credits may be related to insufficient quality control– giving credits for workplace training would need to be justified if students develop competences related to their programme of study during the time spent in a company.

Interviews with representatives of companies and training institutions suggest various obstacles to the expansion and higher quality of workplace training for junior college students. During interviews a number of stakeholders reported that SMEs are particularly reluctant to offer workplace training to students. This is a serious challenge – SMEs accounted for 88% of employees in Korea in 2009 (SMBA, 2012) and junior colleges often lead to jobs in SMEs (81% of the first jobs of junior college graduates are in companies with less than 300 employees, Chae and Chung, 2009), which suggests that without the involvement of SMEs workplace training opportunities for junior college students will remain scarce. Another potential reason for the scarcity of workplace training is that junior colleges may offer programmes of little relevance to employers.

Recommendation 6

Make workplace training mandatory in junior college programmes. Ensure that workplace training is supported by quality standards and a clear legal framework.

Supporting arguments

This recommendation is supported by four arguments. First, workplace training provides major benefits to students and companies. Second, making workplace training mandatory not only benefits students, it also enhances the relationship between junior colleges and employers. Third, successful international experience demonstrates the feasibility of mandatory workplace training. Finally, a supportive framework can encourage and assist companies in offering workplace training.

Workplace training provides major benefits to students and companies

There are four major advantages, from both the student and employer point of view, of providing part of the training programme in workplaces rather than in VET institutions (for more details see the Learning for Jobs comparative review of high school VET, OECD, 2010a). These benefits were highlighted in the OECD Learning for Jobs review of Korea (Kuczera, Kis and Wurzburg, 2009), and they apply to all vocational programmes, including those at postsecondary level.

- *Providing a strong learning environment*. Workplaces offer real on-the-job experience. This makes it easier to acquire hard skills, as students can learn on up-to-date equipment and learn from company employees, able to use the latest technologies. This is also more cost-effective than buying equipment in VET institutions, which becomes very costly as technologies change rapidly. Many soft skills (*e.g.* team working, conflict management) are better learnt in workplaces than in simulated work environments at VET institutions.

- *Improving school to work transition*. In the workplace, employers and trainees get to see each other for what they are, when under pressure, and when there is conflict. Research shows that the employee characteristics on display in these contexts are critical to job performance, so that employers learn about the performance of trainees and retain the best from among them. Students can learn about the day-to-day reality of an occupation and about at least one potential

employer. This provides critical information to students about the line of work they might or might not wish to pursue.

- *Doing useful work*. Apprentices and trainees who undertake useful work generate a productive benefit for the employer. This benefit tends to be important in the case of apprenticeships (see evidence from Switzerland and Germany in Schweri *et al*., 2003, Mühlemann *et al.,* 2007). Such a benefit is also possible in more substantial internships, but more difficult to obtain in very short work placements (unless trainees perform only unskilled tasks, but that would be a poor learning experience). Their contribution typically increases with experience and depends also on how their work is organised.
- *Ensuring that VET provision matches labour market needs.* Employer willingness to offer workplace training places is an indicator of their support for the associated vocational programme. Employers will be particularly keen to offer workplace training in contexts where they have labour shortages – both because students contribute to production and because they may be future recruits.

Making workplace training mandatory not only benefits students, it should also substantially enhance the relationship between junior colleges and employers

Mandatory workplace training benefits the VET system as a whole and changes the dynamics within the VET system. To guarantee sufficient work placements, VET institutions must build partnership with companies and ensure that the mix of programmes on offer and their content are suited to labour market needs (see also Chapter 6 on student choice). Mandatory workplace training ensures that the focus of VET institutions is not only on competition for students and internal institutional dynamics, but also on the skills needs of companies. While the encouragement of workplace training moves the VET system in the right direction, mandatory workplace training ensures that all institutions and programmes are required to build strong links to companies, even in contexts where for reasons discussed earlier, they are running a programme which is popular with students but is of limited labour market relevance. This shift in dynamics can be a useful element in a broader improvement process of the VET system. As VET programmes become more relevant to labour market needs and VET institutions develop systematic links to companies, the quality and status of VET programmes is likely to improve, particularly in the eyes of local employers. A historical review of VET in Spain (Homs, 2007) has argued that the reform that made workplace training mandatory in VET programmes had a positive impact: it ended the isolation of VET institutions

and improved the school-company relationships, helped VET teachers to be in contact with companies and facilitated the transition of VET graduates to jobs.

Mandatory workplace training in VET programmes should also benefit VET teachers in junior colleges. Keeping the technical skills of VET teachers up-to-date is a major challenge in many countries. In Korea VET teachers in junior colleges are not required to have work experience in the subject they teach. Those that did work in their occupation before starting to teach may have been teaching full-time for years. As the requirements in many workplaces change rapidly, many teachers may no longer be familiar with today's technologies and working methods in companies. If workplace training were to be mandatory, VET teachers would have to develop an outreach role with companies. This would give them an opportunity for them to maintain contact with companies and sustain familiarity with their requirements. For example, to find workplace training opportunities teachers would need to establish contacts with companies and persuade them of the value of trainees from the programme – this would require teachers to understand companies and their skill needs. To control the quality of workplace training, teachers would need to keep in touch with companies while students are in workplace training and follow-up after its completion for mutual feedback. In Denmark mandatory work placements are seen by many VET teachers as an important means of ensuring that they are aware of modern workplace requirements.

Mandatory workplace training also benefits students. When workplace training is optional, students who know people working in the relevant sector may find it easier to find a work placement opportunity, while those without such connections may struggle. Also, when workplace training is not part of the programme (*e.g.* students participate in workplace training during holidays), disadvantaged students may prefer to find a paid job unrelated to their studies rather than being in work placement. Mandatory workplace training ensures that all students obtain the benefits of work placements. Finally, an indirect benefit to students is that programmes with mandatory workplace training are likely to be more relevant to the labour market and thus yield better employment prospects.

Successful international experience demonstrates the feasibility of mandatory workplace training

A number of countries have successfully implemented mandatory workplace training in predominantly school-based programmes (see Box 7.1). The transition from patchy provision to mandatory workplace training is always challenging, especially in the absence of a long tradition

of school-company collaboration, as is the case in Korea. But given the benefits it is a challenge worth taking up. In Korea the benefits have already been realised in polytechnics and could be achieved in junior colleges as well. This may have been easier for polytechnics than it would be for junior colleges – polytechnics enrol a relatively small share (2%) of postsecondary VET students and their programmes target particular industries identified by the government as important for economic development and facing skills shortages.

Differences in terms of workplace training between two institutional sectors have been successfully overcome in Denmark. Prior to the 2009 introduction of mandatory workplace training in all postsecondary VET programmes, work placements were widely used in medium cycle programmes, which cater mainly for public sector jobs (*e.g.* public administration, education and health sector). Conversely, the use of workplace training was not systematic in short cycle programmes, which lead predominantly to private sector jobs. Implementing mandatory work placements in short-cycle programmes was a challenging task and involved developing new guidelines, adjusting programme regulations and finding work placement opportunities (Danish Agency for Higher Education and Educational Support, 2012).

The engagement of employers in workplace training was facilitated by a tradition of school-company collaboration in Denmark, linked to a strong apprenticeship system at upper secondary level. But this type of national context is clearly not essential. It is notable that Spain implemented mandatory workplace training in both upper secondary and postsecondary VET programmes in 1990, even though it does not have a strong apprenticeship system. Similarly, Sweden has a predominantly school-based VET system, although it has tried to introduce apprenticeships several times (the most recent initiative started with a pilot in 2008) and is making major policy efforts to ensure that all VET students participate in workplace training. Although workplace training has been mandatory for several years for high school VET students, the legislation allowed for numerous exceptions where students were allowed to complete their practical training at school. In practice "exceptions" were widespread and workplace training was far from universal[1] (Swedish Ministry of Education and Research, personal communication, December 2011). Following a report by a national commission and an OECD recommendation (Kuczera *et al.*, 2008), which argued for mandatory workplace training, the government has increased the pressure on schools to reduce the percentage of students who do not participate in workplace training. The conditions that allow students to do their practical training at school have become stricter. Schools cannot launch a new programme unless they demonstrate that there will be sufficient

workplace training opportunities. If an existing programme fails to attract sufficient work placements, it is not required to close down immediately but will be under serious pressure to address the problem (Swedish Ministry of Education and Research, personal communication, December 2011).

Box 7.1 Mandatory workplace training in school-based VET programmes

Spain

In Spain all postsecondary (as well as upper secondary) VET programmes include a compulsory module of workplace training. Only students who have at least one year full-time relevant work experience may be exempted. The work placement lasts between 10 and 20 weeks, depending on the qualification targeted by the programme. The objectives of work placements include complementing school-based learning to facilitate transition into the labour market, learning about work environments, promoting professional identity and maturity, and evaluating learning outcomes that cannot be assessed outside a work context. Generally, students participate in workplace training after successful completion of the other modules included in the programme. But if the type of training or the availability of places in companies requires it, work placement may be completed at another point of the programme. During the work placement students receive guidance and support from a teacher at the VET institution they attend and from the person who supervises their work at the company.

Source: Spanish Ministry of Education and Science (2007), *Real Decreto 1538/2006, Boletín Oficial del Estado*.; Spanish Ministry of Education, Culture and Sport (2011), *El portal de la formación profesional, www.todofp.es*, accessed December 2011.

Denmark

Participation in workplace training has been mandatory in all postsecondary VET programmes since 2009. The aim of making it mandatory was to ensure that programmes are professionally oriented, and relevant to employers and students. In the majority of occupations vocational provision is limited to the availability of workplace training opportunities – institutions cannot increase student intake if work placements are not available for additional students. In a small number of occupations (*e.g.* teachers, nurses) provision is regulated by government defined quotas. The duration of the work placement is three months in short-cycle (academy) programmes and six months in medium-cycle (professional bachelor) programmes and it can take place at one or several companies. VET institutions are responsible for ensuring that the work placement is adapted to the content of the programme. Although not required by law, many institutions prepare an agreement with the company that offers workplace training, setting out the content of the work placement. At the end of their placement students are individually assessed to check that they have acquired the targeted competences.

Source: Danish Agency for Higher Education and Educational Support (2012), *Skills beyond School: OECD Review of Post-Secondary Vocational Education and Training – National Background Report for Denmark, http://en.fivu.dk/publications/2012/oecd-review-skills-beyond-school/oecd-review-skills-beyond-school-denmark.pdf*

A supportive framework can encourage and assist companies in offering workplace training

Offering workplace training creates various challenges for companies. It involves additional administrative tasks and experienced workers need to allocate some of their time to supervising the trainee, a task which requires management and training skills. These are often particularly burdensome for SMEs, which may lack the administrative and managerial capacity to deal with these additional tasks. As a result, engaging SMEs in workplace training is often challenging both in Korea and in other OECD countries.

A number of policy tools can be used to encourage companies to offer workplace training. Some of the suggestions below reflect those already presented in the OECD review of high school VET in Korea (Kuczera, Kis and Wurzburg, 2009). Specific bodies that group and co-ordinate training activities in several companies can reduce the burdens, support SMEs taking on trainees and encourage workplace training provision (see Box 7.2).

Box 7.2 External bodies involved in the organisation of workplace training for VET students

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.*

Source: Department of Education, Employment and Workplace Relations (DEEWR) (2011), training.com.au website, *www.training.com.au*, accessed December 2011.

Box 7.2 External bodies involved in the organisation of workplace training for VET students (*continued*)

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.

Source: Norwegian Directorate for Education and Training (2008), Responses to the National Questionnaire – OECD Learning for Jobs, unpublished.

In Korea the Ministry of Employment and Labour introduced the SME Vocational Training Consortium programme in 2003 after a pilot in 2001 (Lee, 2009). The tasks of consortia include the identification of training needs in SMEs and development of training programmes for their employees. Consortia also take care of the administrative tasks related to requests for public subsidies for training (through the Vocational Competency Development Program). The government subsidises the costs of staffing and training facilities (Lee, 2007). An evaluation of the training consortia (Lee, 2009) found that after a promising pilot the large-scale implementation of the programme was less successful in engaging SME-s. A major reason for this was that consortia become centred on VET institutions and SMEs ended up losing interest in the initiative. The evaluation also found that SMEs preferred on-the-job training to courses provided by training institutions. But regulations concerning training consortia are biased towards courses in training institutions rather than on-the-job training. This suggests that with adequate support SMEs may be willing to offer on-the-job training to VET students. The SME Vocational Training Consortium programme and the lessons learned from its implementation may therefore be helpful in designing an initiative that might help SMEs offer workplace training to VET students.

The absence of a clear legal framework can also be a barrier to workplace training. Interviews conducted during the review visits suggest that the lack of insurance against industrial accidents sometimes inhibits companies from taking on trainees. The same issue was identified in previous OECD reviews of upper secondary VET in Korea (Kuczera, Kis and Wurzburg, 2009) and Mexico (Kis, Hoeckel and Santiago, 2009). A

legal framework with specific contracts for students in workplace training exists in many countries. Setting out various aspects of workplace training, including insurance arrangements, such frameworks can facilitate the use of workplace training both for VET institutions and companies. A study of five European countries (Ryan, 2000) identified the existence of a strong institutional framework, including a legal framework, as an important condition to the successful implementation of apprenticeship training. Box 7.3 describes some key elements of the legal framework for workplace training in the Community of Madrid, Spain.

Box 7.3 Legal framework for workplace training – Community of Madrid, Spain

In Spain national legislation stipulates that participation in work placement is mandatory for all upper secondary or postsecondary VET students. Autonomous communities create their own legal framework for implementation. The instructions set by the education authorities of the Community of Madrid include, among others, the following requirements:

Collaboration agreements. Workplace training takes places under collaboration agreements signed by the company's (or other collaborating institution's) legal representative and the school's principal, subject to approval by the General Directorate for Secondary and Vocational Education. Annexes to the agreement will specify information on participating students, the place of training, start and end dates, hours of work, and details of the training programme.

The **training plan**, annexed to the collaboration agreement, specifies the set of training activities that the student will perform while in the company. The training plan is agreed between the teacher who supervises the workplace training on behalf of the school and the person responsible on behalf of the company.

Timing. Workplace training takes place after the completion of other modules required by the programme. It takes place during the academic year (*i.e.* excluding holidays), unless specific circumstances require it to be otherwise.

Monitoring and evaluation. The workplace training module is evaluated by the teacher who supervises the module on behalf of the school. The teacher has to visit the company at least every two weeks. The purpose of the visits is to interview the in-company supervisor of the student, observe the students and document the monitoring process. The evaluation of the workplace training module will take into account the evaluation criteria defined for the training plan, information collected during visits to the company, information provided by the students and the company's assessment of the student.

Box 7.3 Legal framework for workplace training – Community of Madrid, Spain

Relationship between the student and the company (or other collaborating institution). Students are covered for workplace accidents under the regulations on Student Insurance.

Source: General Directorate for Secondary and Vocational Education, Community of Madrid, Spain (2009) *Instrucciones de la Dirección General de Educación Secundaria y Enseñanzas Profesionales, por las que se concertan, para los centros públicos, determinados aspectos relatives al modulo profesional de formación en centros de trabajo, www.madrid.org,* accessed December 2011

As argued in the OECD review of high school VET in Korea (Kuczera, Kis and Wurzburg, 2009), compulsory military service may also discourage companies from offering workplace training. Students who have not served in the armed forces before enrolling in postsecondary education may have to do so during or after their studies, which makes retaining former trainees as employees less straightforward. To tackle this problem, the government should encourage flexible arrangements. For example, many students choose to serve in the army in the middle of their programme, so organising workplace training at the end of the programme may be more appealing for companies, as the students will be more mature and better trained and it will facilitate their transition to jobs. This would follow the approach of Spain, where the workplace training element of VET programmes is at the end of the programme.

Notes

1. Data on the use of 15-week work placements is patchy (Kuczera *et al.*, 2008). A survey in 1998 found that only 60% of students were participating in a full 15-week workplace training (Skolverket, 1998).

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OECD (2010), *Learning for Jobs,* OECD Reviews of Vocational Education and Training, OECD Publishing.
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