Learning for Jobs

OECD

Synthesis Report of the OECD Reviews of Vocational Education and Training

Learning for Jobs

OECD

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Foreword

Following a severe recession the need to help young people into work is a major objective for OECD countries and their education systems. Vocational education and training for young people can play a big role in meeting this challenge but, as this report makes clear, reforms are needed in many countries.

Those graduating from vocational programmes need to be equipped not just with the skills that will get them their first job, but also with the broader capacities for further learning on and off the job that will support career development in a labour market undergoing rapid evolution. To that end, vocational programmes need to be of high quality, with teachers and trainers who understand the needs of modern industry, and linked to clear opportunities for further learning. Workplace learning should play an important role in all vocational programmes. Above all, we need an effective partnership between education and training systems and industry, to provide for workplace training, to ensure that skills have real labour market relevance and that young people gain an early appreciation and understanding of the world of work.

This OECD report is linked to 17 individual country studies undertaken across the globe. In this review, and in its successor on postsecondary vocational education and training, to be undertaken in 2011-12, our aim is to exploit the rich diversity of international experience in this field, and thereby help countries to develop their policies.

The authors of this report were Simon Field, Kathrin Hoeckel, Viktória Kis and Małgorzata Kuczera. Jennifer Gouby played the key role of preparing the text and steering the report to publication.

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Learning for Jobs: summary and policy messages

The message of Learning for Jobs

Vocational education and training has been neglected

Vocational education and training (VET) can play a central role in preparing young people for work, developing the skills of adults and responding to the labour-market needs of the economy. Despite this role, VET has been oddly neglected and marginalised in policy discussions, often overshadowed by the increasing emphasis on general academic education and the role of schools in preparing students for university education. It has also often been seen as low status by students and the general public. As a result, comparative policy analysis is undeveloped, and there are very limited data available, especially data that can be reliably compared across countries.

Strong vocational programmes increase competitiveness but many programmes fail to meet labour market needs

Increasingly, countries are recognising that good initial vocational education and training has a major contribution to make to economic competitiveness. Many of the unskilled jobs which existed in OECD countries a generation ago are fast disappearing, either because they have been replaced by technology or because OECD countries cannot compete with less developed countries on labour costs. Instead, OECD countries need to compete on the quality of goods and services they provide. That requires a well-skilled labour force, with a range of mid-level trade, technical and professional skills alongside those high-level skills associated with university education. More often than not, those skills are delivered through vocational programmes. At the same time VET systems face major

challenges. Vocational programmes for young people, often rooted in education institutions, tend to develop their own dynamic, and can be too separated from the fast-changing world of modern economies. Recognition of these challenges, and their significance, led directly to the launch of the current OECD review on *Learning for Jobs* (see Box 1).

Box 1 Learning for Jobs: the OECD review

The review aims to bridge the gap between learning and jobs, by exploring how to make initial vocational education and training for young people respond better to labour market requirements. It therefore looks at initial VET in schools, colleges, workplaces and other institutions, offering policy messages for all OECD countries, alongside concrete advice on policy reform in reviewed countries. A programme of analytical work drew on evidence from all OECD countries, including a questionnaire on VET systems, literature reviews of previous OECD studies and the academic literature on topics such as costs and benefits, career guidance and VET during the economic crisis. The results of both the analytical work and the country reviews fed into this comparative report, of which an initial version was published on the OECD website in October 2009. A separate OECD exercise on 'systemic innovation in VET', was published as OECD (2009a), while the related *Jobs for Youth* review will be published at the end of 2010.

Skills Beyond School, a new policy review examining postsecondary vocational education and training will be launched by the OECD at the beginning of 2011.

See *www.oecd.org/edu/learningforjobs.*

Country policy reviews were carried out in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales), and the United States (South Carolina and Texas) between the end of 2007 and 2010. Special studies were also conducted in Chile and the People's Republic of China. Canada, Denmark, Finland and the Netherlands have also contributed financially to the work.

This review proposes reforms designed to bridge the gulf between learning and jobs

This review makes a sequence of linked proposals to bridge the gulf between learning and jobs, and to connect initial vocational education and training for young people more fully to the needs of the economy. In summary, this means making sure that provision in vocational programmes reflects fast-changing employer needs, as well as student preferences. It means building a foundation of basic and transferable skills into vocational

qualifications, to reflect a world of career flux and development rather than one job for life. It means renewal of the career guidance profession to deliver active guidance for all young learners, well-informed by knowledge of the labour market and vocational as well as academic pathways. It means ensuring that teachers and trainers in vocational programmes have up-do-date industry experience. It means making the fullest use of the workplace as a quality learning environment. It means better data, especially to show where learning leads to good jobs, and where it does not, and more consistent assessment and qualification frameworks to improve transparency of the system. Above all it means an effective partnership between government, employers and unions to ensure that the world of learning is connected at all levels with the world of work.

The economic crisis has created new pressures

A global economic crisis developed while this review was underway, casting a new and sometimes different light on the issues examined. Newer cohorts may find that hard pressed employers concerned by their immediate survival are less willing to offer workplace training. Fewer jobs mean that potential learners are keener to remain in, or take up full-time education and training. At the same time public expenditure pressures, sharpened by the crisis, make it harder to accommodate the increased demand. VET systems will also need to provide the skills needed for the future rather than the past – a particularly demanding challenge in the face of painful and rapid economic restructuring. Some opportunities may nevertheless emerge, for example to redeploy the practical skills of those leaving industry as teachers and trainers.

Why and how should government support initial vocational education and training?

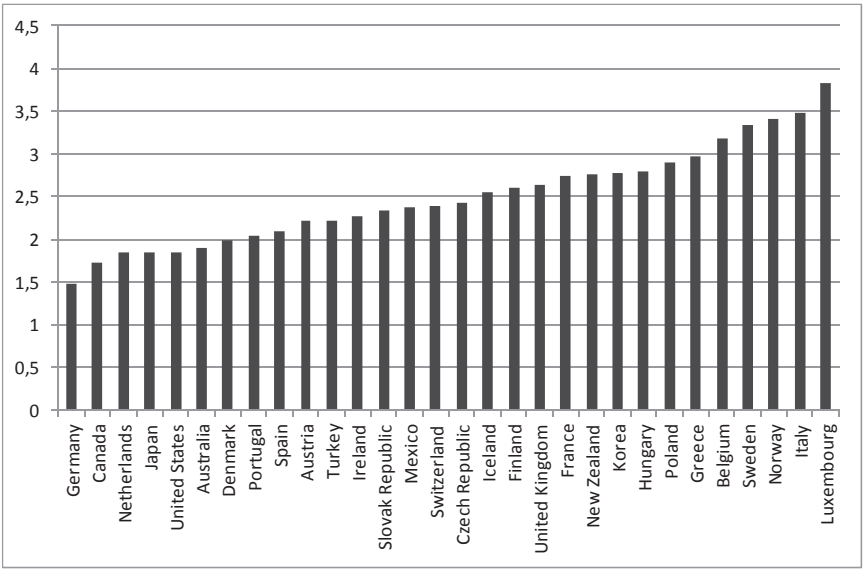
Public investment in initial VET can deliver good economic returns

While governments provide basic education, much occupation-specific training is provided by employers. But there are some good arguments for governments to augment such provision with publicly supported vocational programmes for young people. A number of obstacles mean that employers, if left to themselves may not provide their own employees with sufficient training, particularly in transferable skills. Initial VET is designed to fill the

gap by providing the needed skills, and research has shown that it can yield good economic returns from the public investment involved. Countries with strong initial VET systems, like Germany, have been relatively successful in tackling youth unemployment (see Figure 1).

Figure 1 Relative unemployment of young adults

Ratio of the unemployment rate of 20-24 year-olds to those of adults (aged 25-64), 2009



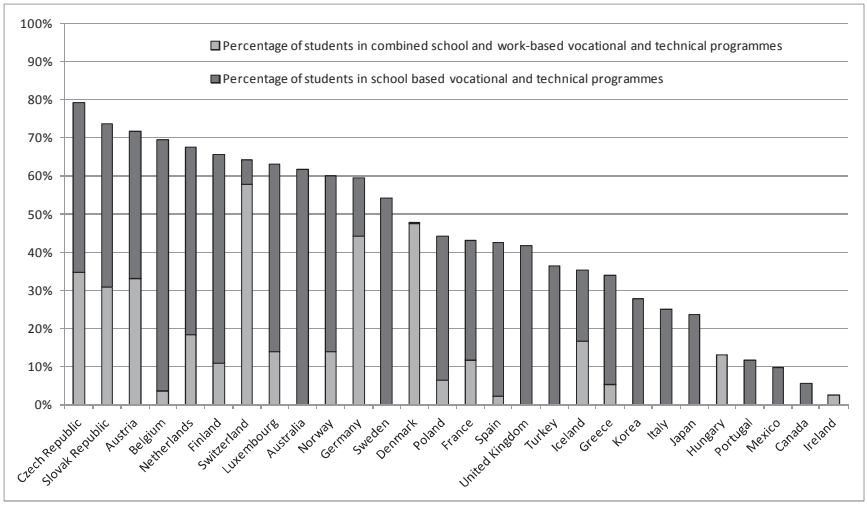
Source: OECD (2010a) OECD Stat Extracts website, *http://stats.oecd.org/Index.asp*x

In some countries young teenagers enter vocational programmes; others leave it to the postsecondary phase

If vocational training is to be a component of an education and training system for young people at what stage should it be introduced? In Austria would-be apprentices choose their target occupation during a preapprenticeship year when they are only 14 years old, and in many countries 14-16 year olds enter vocational programmes with a target occupation already chosen. Proponents argue that this engages young people who are less academically minded in practical tasks and supports their transition to work. Opponents point to the difficulty faced by adolescents in

making considered career choices, and the way in which practical training at this stage can crowd out the broader academic skills that facilitate lifelong learning. Figure 2 reflects these differences of approach, with widely varying proportions of the cohort in vocational programmes at upper secondary level. At the opposite extreme to Austria, in the United States, although many high school students pursue some vocational programmes, they are very often modest programmes designed to explore career options, and occupational specialisation tends only to take place in postsecondary programmes (if then).

Figure 2 Vocational education and training as a share of the upper secondary sector (ISCED 3), 2006



Source: OECD (2008), *Education at a Glance 2008: OECD Indicators, Table C1.1*, OECD, Paris.

Note: These figures exclude the many programmes which include vocational or technical options and modules, but not in sufficient weight to be classified by the country as vocational education and training programmes. Figures for New Zealand and the United States are excluded, recognising, in the United States, the rather different approach to vocational education and training in US high schools (see Box 1.4).

Note: In Hungary, the Ministry of Education assessed the share of students participating in vocational training schools/institutions as 23% in 2007/8.

Alongside immediate job skills VET students need the wider competencies to sustain career development

In the 21st century, those entering the labour market need immediate job skills, but they also need a range of career and cognitive competences that will enable them to handle changing jobs and career contexts and to sustain their learning capacity. Nearly all countries report substantial career flux and development, so that those vocationally trained for one job often find their way into others. Programmes involving early specialisation therefore need to be balanced by sufficient attention to general academic skills, as well as other wider soft competencies, to provide the foundation for lifelong learning, effective citizenship, and a successful career. Workplace learning can play an important role here, since workplaces are a favourable learning environment for the development of many soft skills, and the blend of school and workplace learning is a powerful and effective method of preparing young people for jobs. Such approaches, including the dual system, have a particular value when labour markets are highly regulated, and they do appear very effective at securing smooth initial transitions into the labour market, as highlighted in the OECD *Jobs for Youth* review.

Upper secondary vocational programmes often need to prepare students for further study as well as for jobs

Historically, many vocational programmes were conceived as a stepping stone to a single target occupation. But increasing educational opportunities have challenged this. More and more young people, including students in vocational programmes, now expect to enter tertiary and other postsecondary education. For example one-quarter of Dutch upper secondary vocational students continue into tertiary VET, and around three-quarters of Korean upper secondary vocational students do so. To reflect this new reality, such programmes must be designed not only to prepare students for the labour market, but also for entry into tertiary education. This means ensuring sufficient attention to general academic skills as well as practical skills.

Numeracy and literacy skills require systematic assessment to provide support for those who need it

Among general academic skills, numeracy and literacy are of increasing importance in the labour market, and weaknesses in these fields are very common among those in vocational programmes. Such problems (often unrecognised) may increase the risk of drop-out, and reduce the prospect of further career development and lifelong learning. Vocational programmes need to give sufficient weight to these skills, and students should be systematically assessed at the point of entry to vocational programmes so as to ensure a basic minimum of skills and identify those in need of targeted support.

Meeting the needs of the labour market

The mix of provision in vocational programmes needs to balance student preference and employer demand

All VET systems need mechanisms to make sure that the number of people trained in different occupations matches labour market needs - so that, for example, the number of trainee plumbers matches the demand for plumbers. Student preferences are relevant, but such preferences on their own are usually not enough. And while employer needs are important it is not always easy to establish what those needs are, or how they will evolve. Publicly funded provision needs to serve the interests of the whole society by balancing student preference and employer demand. Ideally, vocational programmes should include an element of workplace training because, apart from the learning benefit, employers' willingness to provide such workplace training reflects labour market demand for the skills acquired in the VET programme.

But this balance also depends on the funding provided by government, student and employers

The mix of provision should also reflect the (informed) career preferences of students particularly if students bear all or most of the costs. Conversely, where employers fund the training, they will naturally expect to decide what is taught. Between these two extremes, there are many models of mixed support for training from government, students and employers.

Career guidance

As careers diversify, career guidance is becoming both more important and more challenging

More complex careers, with more options in both work and learning, are opening up new opportunities for many people. But they are also making decisions harder as young people face a sequence of complex choices over a lifetime of learning and work. Helping young people to make these decisions is the task of career guidance.

But career guidance has serious weaknesses in many OECD countries.

But in many countries career guidance faces a number of challenges: too often those offering guidance are inadequately acquainted with labour market issues, with career guidance sometimes playing a subsidiary role to psychological counselling; guidance services can be fragmented, under-resourced and reactive, so that those who need guidance most may fail to obtain it; advice sometimes lacks objectivity because guidance personnel are based in education institutions with a pro-academic bias; relevant labour market information is not always available or readily digestible and comprehensible; and the evidence base on 'what works' in careers guidance is too weak.

Career guidance needs to be coherent, well-resourced, proactive, objective, and well-supported by evidence.

Where such weaknesses exist substantial reforms are required. There needs to be a coherent guidance profession, with personnel experienced in labour market issues and separated from psychological counselling. Guidance needs to be adequately resourced, with some assurance of pro-active one-to-one delivery of guidance at key career decision points. Guidance personnel need to have an independent base to underpin their objectivity rather than being part of teaching institutions, and they need to be able to call on a wide range of information and web-based material. Strong links between schools and local employers are very important means

of introducing young students to the world of work. The whole needs to be underpinned by a stronger base of evaluation evidence.

Effective teachers and trainers

VET teachers and trainers need to be familiar with the modern workplace

As in general education, the key element in a good vocational programme is good teachers. As the current workforce ages, many countries are facing a shortage of teachers and trainers in VET institutions. Some teachers and trainers also lack recent workplace experience. Flexible pathways of recruitment should be encouraged, designed to facilitate the entry of those with industry skills into the workforce of VET institutions. Part-time working should also be promoted, with trainers in VET institutions working part-time in industry, thus sustaining their industrial know-how.

In industry, those who supervise trainees and apprentices need preparation for the task

In industry, a different problem emerges. Trainers and supervisors of apprentices and trainees in companies often have no specific pedagogical training or other preparation, although research evidence shows that such preparation has positive outcomes. Appropriate pedagogical and other preparation for supervisors of interns, trainees and apprentices in workplaces should be provided, adapting the level of preparation to the nature of the workplace learning being provided.

Workplace learning

All VET systems need to take full advantage of workplace learning

Most vocational programmes involve some element of workplace learning, although sometimes this component is small or even non-existent. Workplaces provide a strong learning environment, developing hard skills on modern equipment, and soft skills through real world experience of

teamwork, communication and negotiation; workplace training facilitates recruitment by allowing employers and potential employees to get to know each other, while trainees contribute to the output of the training firm. Workplace learning opportunities are also a direct expression of employer needs, as employers will be keenest to offer those opportunities in areas of skills shortage. Apprenticeship – one common model of workplace training – can be an outstandingly effective form of vocational training. Collectively, these arguments are so powerful that all VET systems should aim to make substantial use of workplace training.

Quality control of workplace learning is essential

The benefits of workplace learning depend on its quality. In the absence of quality control, workplace training opportunities for young people can degenerate into cheap labour, or involve very narrow and firm-specific skills. Quality control may involve contractual arrangements setting out the rights and obligations of trainee and employer, inspections, self-evaluation and effective assessment of the skills acquired through training.

A range of incentives help to sustain the commitment of students and industry to workplace learning

Workplace learning also requires adequate support and interest from both industry and students. This means adequate incentives for employers to offer training places. Countries use many types of financial incentives, including direct subsidies, special tax breaks and arrangements to share the burden of training between a group of enterprises. In the aftermath of the financial crisis, and an economic downturn in many OECD countries, special support measures have sometimes been necessary.

Tools to support the vocational education and training system

VET systems need to engage key stakeholders, and the information to make the system transparent.

VET systems do not exist in isolation; their effectiveness depends on their links to the labour market. This implies two types of supporting

arrangements. First we need tools to engage the key stakeholders in VET – in particular so that employers can explain the skills that they need, and negotiate the provision of these skills with other stakeholders. Second we need information tools so that the value of vocational programmes of study can be identified, recognised and analysed. These information tools include qualification frameworks, systems of assessment, and data and research.

Strong institutions are needed to engage employers, unions and the interests of students in VET

The engagement of employers and unions is necessary to ensure that the organisation and the content of vocational programmes meets the needs of employers, students and indeed the wider economy. Typically this means a set of interconnected institutions at national, regional and sectoral levels, engaging the VET system with employers in particular, with clear responsibilities for different elements in the VET system.

Qualifications frameworks can be useful to VET systems, but they need to be linked to other measures

Many countries are currently implementing qualification frameworks, or have done so recently. In principle, such frameworks can make VET systems more transparent, so that the value of different qualifications can be more clearly recognised by students, employers and other stakeholders. Strong frameworks should, in principle, facilitate lifelong learning, and improve access to higher level education. But they need to be underpinned by a strong methodology for allocating qualifications to levels, supported by key stakeholders, and backed by complementary measures to unify the VET system and improve transitions in the educational system. Implementing a qualifications framework might therefore be best seen as part of a wider approach to quality and coherence in VET provision.

A standardised assessment for VET qualifications ensures consistency in standards

Assessments of core academic skills in schools, and the use of such assessments to evaluate both students and how well they have been taught, are now a matter of intensive debate. Assessments of occupation-specific

skills have received less attention, but the issues remain similar. A standardised national assessment for VET qualifications can help to ensure consistency in the *mix* of skills acquired and in the *level* of skills necessary, allow competencies to be acquired in diverse ways, encouraging innovation and efficiency in the acquisition of skills and providing a clear basis for recognition of prior learning.

Better data, particularly on the labour market outcomes of VET, are vital.

Information supports the link between vocational education and training and the labour market. It allows students to see their way through a training programme into the labour market, employers to understand what potential recruits have learnt in a programme, and policy makers and training institutions to see whether their graduates are obtaining relevant work. Better information might be provided either through one-off surveys of those leaving VET to establish labour market outcomes, or by tracking cohorts of individuals through VET into employment to map out career histories. Such data need to be supported by the institutional capacity to analyse and make use of the data – for example in national VET research centres.

Policy recommendations

Provide the right mix of skills for the labour market

1. For vocational programmes beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
2. Provide a mix of VET training places that reflects both student preferences and employer needs. Achieve this through the provision of workplace training and through planning and incentive mechanisms.
3. Engage employers and unions in curriculum development and ensure that the skills taught correspond to those needed in the modern workplace.
4. Through VET systems, provide young people with the generic, transferable skills to support occupational mobility and lifelong

learning, and with the occupationally-specific skills that meet employers' immediate needs.

5. Ensure all students in vocational programmes have adequate numeracy and literacy skills to support lifelong learning and career development. Identify and tackle weaknesses in this area.

Reform career guidance to deliver effective advice for all

1. Develop a coherent career guidance profession, independent from psychological counselling and well-informed by labour market information.
2. Provide adequate resources for guidance and its pro-active delivery.
3. Ensure an independent base to support objective career guidance.
4. Provide good sources of information about careers and courses.
5. Build a comprehensive framework of guidance through partnership with employers.
6. Ensure that career guidance initiatives are properly evaluated.

Ensure teachers and trainers combine good workplace experience with pedagogical and other preparation

1. Deliver sufficient recruitment of teachers and trainers for VET institutions, and ensure this workforce is well-acquainted with the needs of modern industry. To this end:

- Encourage part-time working, with trainers in VET institutions spending some of their time in industry.
- Promote flexible pathways of recruitment. Facilitate the entry of those with industry skills into the workforce of VET institutions through effective preparation.

2. Provide appropriate pedagogical and other preparation for trainers (including the supervisors) of interns, trainees and apprentices in workplaces, adapting the level of preparation to the nature of the workplace learning being provided.
3. Encourage interchange and partnership between VET institutions and industry, so that vocational teachers and trainers spend time in

industry to update their knowledge, and vocational trainers in firms spend some time in VET institutions to enhance their pedagogical skills.

Make full use of workplace learning

1. Make substantial use of workplace training in initial VET.
2. Ensure that the framework for workplace training encourages participation by both employers and students.
3. Ensure workplace training is of good quality, through an effective quality assurance system, and through the provision of a clear contractual framework for apprenticeships.
4. Balance workplace training by other provision (*e.g.* training workshops in schools) where other learning environments work better, or if workplace training is not available.
5. Devise effective responses to the current economic downturn, to sustain workplace training, and cope with increased demand for full-time VET.

Support the VET system with tools to engage stakeholders and information to promote transparency

1. Engage employers and unions in VET policy and provision and construct effective mechanisms to that end.
2. Systematically engage with employers, trade unions and other key stakeholders to develop and implement qualification frameworks. Strengthen quality assurance throughout the VET system to support qualifications frameworks.
3. Adopt standardised national assessment frameworks to underpin quality and consistency in training provision.
4. Strengthen data on the labour market outcomes of VET, and provide the institutional capacity to analyse and disseminate that data.

Chapter 1

The vocational challenge

Countries are now giving the long-neglected topic of vocational education and training (VET) a dramatically increased profile, reflecting a recognition of its economic function and the need to grapple with emerging strains in VET systems. This heightened profile led to the launch of this OECD policy review, which involved reports on the vocational systems of 16 countries.

While many vocational skills can in principle be learnt on the job, firms are often unwilling to invest in training. For these reasons and others, it often makes sense to provide vocational education and training to young people to ensure their smooth transition into the labour market. This report is primarily concerned with initial VET, meaning programmes designed primarily for young people. Its focus is on how VET systems can respond better to labour market needs.

Why look at vocational education and training?

On 22 September 2005, in Copenhagen (OECD, 2005a) the chief civil servants of education ministries from across the OECD opened a two-day discussion. Their agenda was wide-ranging, as they had been asked to identify their most important policy priority in education in the coming years. The answer they gave surprised many, for it was neither schools nor universities, but, in fact, vocational education and training (VET, see Box 1.2), a topic whose importance was underlined by a subsequent informal OECD ministerial meeting on VET which also took place in Copenhagen in January 2007. The impetus arising from these meetings gave rise to the current review (see Box 1.1).

Box 1.1 Learning for Jobs: the OECD VET study

The review aims to bridge the gap between learning and jobs, by exploring how to make initial vocational education and training for young people respond better to labour market requirements. It therefore looks at initial VET in schools, colleges, workplaces and other institutions, offering policy messages for all OECD countries, alongside concrete advice on policy reform through 17 country reviews. A programme of analytical work drew on evidence from all OECD countries, including a questionnaire on VET systems, literature reviews of previous OECD studies and the academic literature on topics such as costs and benefits, career guidance and VET during the economic crisis. The results of both the analytical work and the country reviews fed into this comparative report, of which an initial version was published on the OECD website in October 2009. A separate OECD exercise on 'systemic innovation in VET', was published as OECD (2009a), while the related *Jobs for Youth* review will be published at the end of 2010.

Skills Beyond School, a new policy review examining post-secondary vocational education and training will be launched by the OECD at the beginning of 2011.

See *www.oecd.org/edu/learningforjobs.*

Country policy reviews were carried out in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales), and the United States (South Carolina and Texas) between the end of 2007 and 2010. Special studies were also conducted in Chile and the People's Republic of China. Canada, Denmark, Finland and the Netherlands have also contributed financially to the work.

Three factors stand out as reasons for the growing interest of policy makers in vocational education and training: *economics*, *strains* in the system and *previous neglect*.

On *economics*, OECD countries face ever-increasing global competition. Since OECD countries cannot compete with less developed countries on labour costs, they need to compete in terms of the quality of goods and services they provide. That means a highly skilled labour force, with a range of mid-level trade, technical and professional skills alongside those high-level skills associated with university education. The large numbers of unskilled jobs which existed a generation ago are fast disappearing, particularly in OECD countries, since they are so vulnerable to competition from low-wage countries. And, although general education also has its claims, vocational education and training is often the right vehicle for providing skills to those who would otherwise lack qualifications and ensuring their smooth transition into the labour market. The global economic crisis of 2008-9 reinforced attention to this issue, as rising rates of youth unemployment placed the spotlight on the capacity of education and training systems to effectively transition young people into jobs.

There are *strains* in existing vocational systems. One of them is the lack of workplace training places. Another is the lack of trainers. In some countries the rapid expansion of tertiary education has undermined school-based VET. Career flux means that one-to-one relationships between initial training and a single lifetime occupation have become rarer than ever – questioning the relevance of initial VET training in that form. In the United States a new terminology of "career and technical education" has replaced "vocational education and training" to reflect an orientation towards a career rather than a single occupation.

VET has been *neglected.* The great reform movements which have swept over basic school and university systems have often affected VET, but have rarely taken it as their focus. Challenging issues like how to go about teaching practical skills, or the rapid expansion of tertiary vocational programmes, have received limited attention. Analysts sometimes find VET dull or incomprehensible, perhaps because they themselves have rarely received their education there. The perceived low status of VET has therefore also been a barrier to engagement in the sector and how it has been viewed analytically. One objective of this review is to remedy this past neglect.

Box 1.2 Defining vocational education and training

Vocational education and training (VET) includes education and training programmes designed for, and typically leading to, a particular job or type of job. It normally involves practical training as well as the learning of relevant theory. It is distinct from (academic) education – for example in mathematics, which is relevant to a very wide range of jobs. In the United States the usual term for vocational education and training is career and technical education (CTE). Education and training for some high level professions such as medicine and law meets the definition even though they are not normally described as VET and not addressed in this report.

Initial VET includes programmes mainly designed for and used by young people (we propose those under 30) at the beginning of their careers and commonly before entering the labour market. It includes many upper secondary and tertiary programmes. *Continuing VET* is all other sorts of VET, including enterprise training of employees and training provided specifically for those who have lost their jobs.

These definitions and distinctions inevitably leave some blurred edges, since programmes can meet some of the relevant criteria but not all of them (for example programmes designed for direct labour market entry which rarely result in that outcome).

The value of vocational programmes for young people

Employees learn many skills in the workplace either informally or through formal training. There are many advantages to such workplace learning, as argued in Chapter 5 of this report. Many skills requirements are volatile and driven by rapid technological change – and such requirements can be met naturally through learning on the job. Why not, then, leave vocational training to employers and reserve basic education for generic cognitive skills? These would include numeracy, literacy and general subjects like the sciences, history and geography. In short, why is initial vocational education and training needed? There are a number of answers:

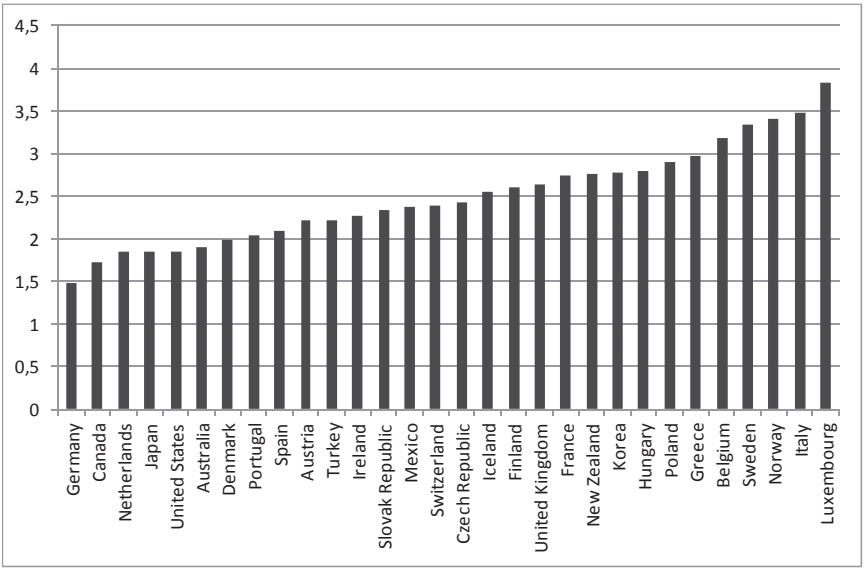
- First, the classical economic argument is that, while firms provide firm-specific training to their employees, they have no incentive to provide training for general skills, since, under perfect competition the productivity benefits of general skills are fully captured by the employee in the form of higher wages (Becker, 1975). In practice, because of all kinds of market imperfections, firms support some training in general skills, but often not enough. Other barriers include the limited training opportunities in smaller firms. One role of initial VET in schools and institutions is to compensate for these

barriers by providing a strong initial base of vocational skills, including general skills.

- Second, where hiring young inexperienced people is expensive (for example because of strict employment protection legislation, or minimum wages by law or convention), employers may be reluctant to recruit young people unless the latter can present themselves to potential employers as "job ready". Initial VET can play a critical role in helping them to meet this requirement. Figure 1.1 compares unemployment rates among young people who by definition have limited labour market experience with those for the adult workforce as a whole. This is a measure of youth labour market problems. In all countries young people are more likely to be unemployed, but their relative disadvantage varies across countries. In Germany, the Netherlands and Canada 20-24 year-olds are only slightly more likely to be unemployed than older workers, suggesting that in these countries young people have fewer problems obtaining their first jobs than in many other countries.

Figure 1.1 Relative unemployment of young adults

Ratio of the unemployment rate of 20-24 year-olds to those of adults (aged 25-64), 2009

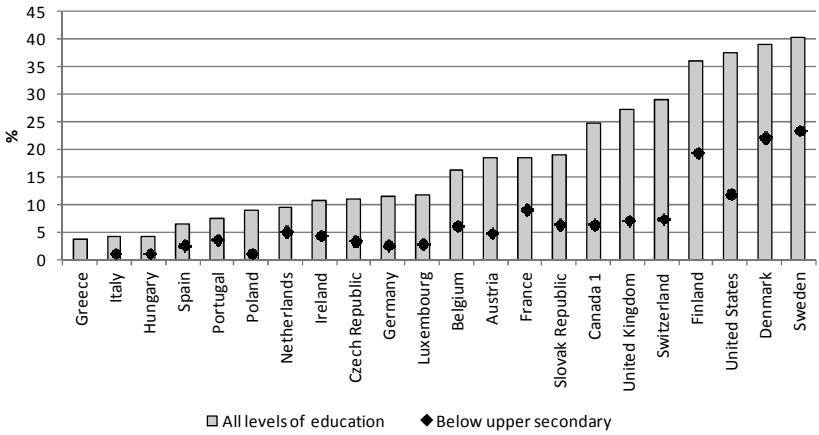


Source: OECD (2010a), OECD Stat Extracts website, *http://stats.oecd.org/Index.aspx*

- Third, there is good evidence that well-educated individuals are much more likely to obtain further education and update their competences and develop new skills over their lifetime (see Figure 1.2 which shows that those educated at the lowest level in OECD countries – below upper secondary – receive much less than average job-related education and training). By the same token, those with lower levels of education, who would benefit the most from additional skills, might not be able to acquire them as readily once in the labour market. These individuals might develop job-relevant competences more effectively when they are still in full-time education, before they enter the labour market. The role of initial VET would be to provide these skills.

Figure 1.2 Participation in job-related continuing education and training

By level of education, 2003



Note: 1. Year of reference 2002.

Source: OECD (2008), *Education at a Glance, OECD Indicators*, Table C5.1a, OECD, Paris.

- Fourth, some commentators have argued that in the absence of systemic measures to raise skill levels, countries can slip into a "low-skills equilibrium" in which no actor has sufficient incentive to invest in better skills (Finegold and Soskice, 1988). Conversely, the availability of a high-skilled labour force may encourage investment

in the country, increasing economic growth; while at individual level, employee skills may promote the skills of workmates.

- Fifth, vocational programmes can pay off in the labour market. In the United States, where there is relatively little vocational training at upper secondary level, a carefully designed study by Meer (2007), controlling for a wide range of potentially confounding variables, reports that returns to upper secondary technical education are positive. In the quite different case of Switzerland, where two-thirds of the cohort enters some form of VET at a secondary level, good rates of return have been calculated for upper secondary VET (Wolter and Weber, 2005). These two examples, at opposite ends of the vocational training spectrum, are no more than indicators, but they suggest that initial VET, designed to fit individual country circumstances, can play a useful role in many education systems.

How initial VET depends on labour market characteristics

The role of initial VET is dependent on the context of labour market regulation and the structure of the economy. In deregulated labour markets employers may be able to run, in effect, an informal apprenticeship system, by recruiting young people at low wages, training them, and retaining the most productive as long-term employees. But deregulated labour markets provide no guarantee of employee training. Where there is high job turnover and flexible wages young people may find it easier to obtain their first job – sometimes precarious and temporary jobs. But they may then find it difficult to move into more stable employment, and can be trapped in low-skilled, poorly paid or unattractive jobs.

Conversely, in more regulated labour markets, with wage minima and strong employment protection, young people may face difficulties in transferring from school to work unless there are formal pathways leading to employment, such as apprenticeship training. Companies do not provide workplace training unless they see it as beneficial, and recruitment of good employees through such training is a strong incentive. Such an incentive is strongest when change of employer is difficult or unattractive and employers can retain carefully selected employees. The implication is that a strong initial VET system may be more desirable in labour markets that are more highly regulated in the respects described. Some of these issues are examined in the OECD's *Jobs for Youth* study (see Box 1.3).

Box 1.3 The OECD Jobs for Youth Review

In response to a mandate from OECD Employment Ministers in 2006-10 , the OECD undertook a thematic review of Jobs for Youth in 16 countries (Australia, Belgium, Canada, Denmark, France, Greece, Japan, Korea, the Netherlands, New Zealand, Norway, Poland, the Slovak Republic, Spain, the United Kingdom and the United States See *www.oecd.org/employment/youth*). The main findings are;

- Young people have been particularly hard-hit by the current recession and youth unemployment is likely to remain high well into the recovery. Prolonged unemployment and inactivity spells may permanently lower their employability, particularly for low-skilled and inexperienced young people.
- Even in good times, the youth unemployment rate is on average two-three times higher than the adult unemployment rate in the OECD area. About 30-40% of school-leavers in the OECD are at risk of poor labour market outcomes during their first years in the labour market.
- In many OECD countries, youths are one of the main target groups of active labour market programmes, *i.e*. job-search assistance, employment or training programmes. This is particularly the case in Europe where on average in the mid-2000s young people aged 15-24 represented 27% of all participants in active measure while representing only 11% of total employment.
- To be effective, active labour market measures should be based on mutual-obligations, whereby in return for income support and (re-)employment measures, young recipients are required to participate actively in these measures with the threat of moderate benefit sanctions in case of refusal.
- High labour costs and too strict employment protection tend to penalise youth employment in many countries. The school-to-work transition is relatively smooth in low-regulated labour markets for many young people, where "first jobs", even non-standard ones, generally act rapidly as a stepping stone to a career.
- In more regulated labour markets, a dual system based on apprenticeship training helps to secure a successful school-to-work transition for most young people, and in particular for those with low skills. Apprenticeship contracts yield a double dividend: lower labour costs and a training commitment from the employer.

A synthesis report highlighting the main issues and policy recommendations of the review will be published at the end of 2010. It will draw heavily on the 16 published reports but will also present new policies implemented in the 16 countries since their review as well as actions decided in all OECD countries to help young people.

Source: OECD (2010b), Jobs for Youth Review website, *www.oecd.org/employment/youth*, accessed June 2010.

There is also a complementarity between enterprise training for adults, and the requirement on initial vocational programmes. In some countries, small and medium-sized enterprises (SMEs) may pursue little employee training – probably because their employees who gain better skills have fewer opportunities to obtain promotion within the company than in large firms, and may therefore be inclined to leave for a better job elsewhere. Low-technology firms that rely on cheap unskilled labour on fixed-term contracts tend to invest less in skills than companies with highly skilled workers and new technologies (see for example Gashi, Pugh and Adnett, 2008). Under these circumstances initial VET may be proportionately more important because it compensates for the market failures which undersupply training among adults.

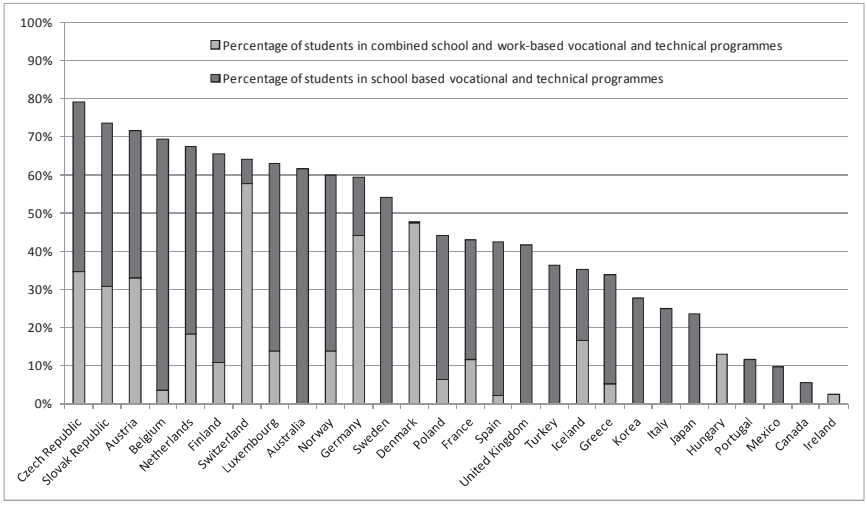
Many other factors, outside education and training systems, influence the supply of skills. These include informal learning, migration flows, and labour force participation, (influenced by factors such as pensions arrangements and childcare provision). This has two significant implications. First, in the face of any given labour market need, many public policy instruments are potentially relevant – some labour market needs may be best met by allowing an increased migration flow, or by reforming pension arrangements, rather than through initial VET. Second, to make these choices requires high quality co-ordination across the range of government departments responsible for these different policy areas. This major challenge, of developing a coherent skills strategy covering all these elements, is increasingly being recognised in OECD countries.

Adapting vocational programmes to the modern world

Characteristics of national systems

National systems of vocational education and training are very diverse – and indeed in some countries it makes little sense to refer to it as a single 'system'. Many countries have extensive vocational programmes at upper secondary level while others, particularly English-speaking countries, tend to postpone such programmes to post-secondary level. In Germany for example, 60% of young people undertake a vocational programme at upper secondary level. In Ireland there is little VET at upper secondary level, but an extensive system, including apprenticeships, above that level (see Figure 1.3).

Figure 1.3 Vocational education and training as a share of the upper secondary sector (ISCED 3), 2006



Source: OECD (2008), *Education at a Glance 2008: OECD Indicators,* Table C1.1, OECD, Paris.

Note: These figures exclude the many programmes which include vocational or technical options and modules, but not in sufficient weight to be classified by the country as vocational education and training programmes. Figures for New Zealand and the United States are excluded, recognising, in the United States, the rather different approach to vocational education and training in US high schools (see Box 1.4).

Note: In Hungary, the Ministry of Education assesses the share of students participating in vocational training schools as 23% in 2007/8.

The workplace also plays a varying role. Approaches range from the dual system, with apprenticeship training complemented by schooling (see Box 1.5), to models where young people gain work experience informally outside the school system in part-time jobs and through job rotation (for the US see Harhoff and Kane, 1997). The United States has an almost unique (by international standards) set of arrangements at upper secondary level because much of the vocational training is designed as career exploration rather than preparation for a specific job (see Box 1.4).

Box 1.4 Career and technical education in the United States

Career and technology education (CTE) – the US term for vocational education and training – takes place at upper secondary (high school) level, in post-secondary and tertiary institutions including community colleges, and in institutions for adults. Its variability across the USA reflects the large role of the individual states in determining education policy. CTE in high schools contrasts with upper secondary VET in many other countries as it does not always aim to make students job ready – some students take CTE courses to explore different career fields, while others view it as preparation for the labour market.

In addition to compulsory courses, high school students are free to choose among various options including CTE. In 2005 almost all US high schools students took at least one CTE course, while one in five students took at least three credits in one area. In 48 states there are high school CTE programmes that lead to an industry-recognised certificate. Students may develop practical skills in school workshops and through work experience in companies. Typically school workshops are offered either by a comprehensive high school on site or in regional CTE centres, which serve several high schools (Forrest Cataldi, 2009).

Although employer engagement with state-run education and training systems is variable in the US, various forms of work experience in companies are available to students – from a few hours job shadowing to longer-duration internships. According to one school survey, 85% of institutions offer work experience opportunities to students. A large proportion of US high school students also gain work experience outside the education system through summer jobs (OECD, 2009b).

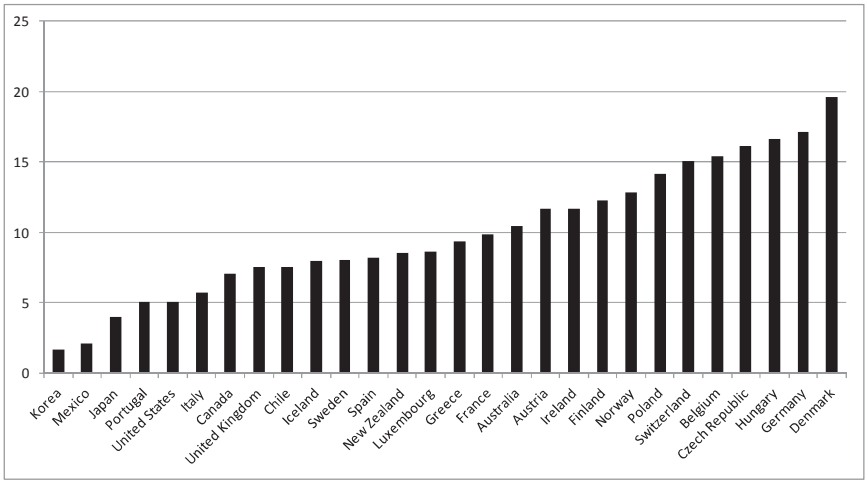
Two thirds of high school graduates continue in post-secondary education. The transition rate is lower for graduates with CTE credits, but is higher than for students in vocational tracks in many other countries. Among students who graduated in 2004 and earned at least 2 CTE credits in a single occupational programme, 65% enrolled in post-secondary institutions within a few months of graduation, compared with 72% of other students (Forrest Cataldi, 2009). Post-secondary institutions provide a wide range of programmes, including 4 year degrees, 2 year associate degrees, and a variety of shorter programmes. Around two thirds of post-secondary students enrol in programmes classified as 'career education' as opposed to 'academic education' (see NCES, *nces.ed.gov/surveys/ctes/tables/index.asp*). Significant challenges remain for many post-secondary programmes, particularly in community colleges with high dropout rates.

Within families of VET systems there are also striking variations - for example the different approaches to apprenticeship in Germany and Switzerland (see Chapter 5). Many of these differences in education and training systems are strongly reflected both in labour market structures, and in cultural attitudes, for example in occupational aspirations. In illustration

of this, there are striking parallels between the scale of upper secondary VET in countries and the aspirations of 15-year-olds towards high-skilled blue-collar occupations (see Figure 1.4). These high-skilled blue-collar occupations include traditional apprenticeship trades like plumbing and electrical trades. At the same time most OECD countries are also developing vocational programmes in new technical white-collar occupations including healthcare and computing.

Figure 1.4 The jobs that young people expect

The jobs that 15-year-olds expect to have by age 30: percentage expecting to have high-skilled blue collar jobs.



Source: OECD (2004), *Education at a Glance 2004: OECD Indicators*, OECD, Paris.

When should vocational education and training begin?

At what age, and at what educational stage, should young people embark on occupation-specific training? At one extreme, in Austria, apprentices choose their target occupation during a pre-apprenticeship year as young as the age of 14. It is argued that this approach engages young people who are less academically minded in practical tasks, sustains their motivation for learning, and supports their transition to work. As Figure 1.1 has indicated, youth unemployment certainly tends to be less often a problem (relative to adult unemployment) in countries like Germany with strong 'dual' apprenticeship systems (see Box 1.5). Against, it is argued that it is difficult for adolescents to make considered career choices so early, and

that the dominance of practical training at this stage tends to crowd out broader academic skills that facilitate lifelong learning, including later opportunities to enter tertiary and other forms of further education. One German research study argues, on the basis of worker self-assessment, that the value of skills learnt through apprenticeship tend to decay faster than those acquired through tertiary education (Ludwig and Pfeiffer, 2005).

This report will take the middle ground on this key point. It will argue that workplaces are very important learning environments, and that the blend of school and workplace learning is a powerful and effective method of preparing young people for jobs and careers. Such approaches, including the dual system, have a particular value when labour markets are highly regulated, and they do appear very effective at securing smooth initial transitions into the labour market. At the same time the report maintains that programmes involving early specialisation require sufficient attention to numeracy, literacy and other general academic skills, as well as other wider soft competences, to provide the foundation for lifelong learning and effective citizenship, as well as the foundation of competences necessary to develop and maintain a successful career through a continuing blend of learning and work.

Box 1.5 Apprenticeships – blending learning and working

Apprenticeships combine education and training in schools or other VET institutions with workplace training. In some countries apprenticeships are often referred to as the "dual system" (*e.g.* Austria, Germany). Apprenticeships are widespread in Germanophone countries, such as Austria, Germany, Luxembourg and Switzerland, and also exist in Belgium-Flanders, Denmark, the Netherlands and Norway. In a number of countries apprenticeships are provided outside the school system at post-secondary level – for example in Australia, Ireland and the United States. The design is highly variable: on-the-job and off-the-job components are alternated within a week (*e.g.* Austria, Belgium-Flanders, Germany, Austria) or in blocks of several weeks (*e.g.* Ireland). In Norway, two years of off-the-job training are followed by two years on-the-job training.

Legal framework. Specific legal provisions normally regulate apprenticeships, typically based on a contract between the training employer and the apprentices (or their parent or legal guardian).

Employer engagement. Employers are typically closely engaged, not only in the provision of the workplace training element but also in the design of the apprenticeship system, including the definition of legislation, curricula and examinations. Employers normally cover the costs of workplace training (although in some countries subsidies are available), while the off-the-job education and training is funded by the state.

Box 1.5 Apprenticeships – blending learning and working (continued)

Teachers and trainers. In some countries VET teachers must have university education while in others they may teach with an occupational qualification. Switzerland has a specific tertiary institute (SFIVET), which prepares VET teachers. Trainers in companies are typically required to have an occupational qualification. In addition, in several countries they need to attend a didactic course (*e.g.* Belgium-Flanders, Switzerland) or provide some other proof of didactic skills (*e.g.* AEVO test in Germany, trainer exam in Austria). In some countries (*e.g.* Denmark) there are no standard requirements for trainers.

Vocational programmes and lifelong learning

In the 21st century, those entering the labour market need immediate job skills, but they also need the career and cognitive competences that will enable them to handle different jobs and to sustain their learning capacity, bearing in mind that technological advance has increased the demand for higher level technical skills, including the demand for vocational tertiary education. Many of those now participating in upper secondary vocational programmes do not expect to enter the labour market directly, but instead expect to enter some form of post-secondary education. As tertiary participation has increased, graduates from upper secondary vocational programmes increasingly choose to enter tertiary education – sometimes into a related VET field, but sometimes also into a quite different area or into a more academic field of study. For example one-quarter of Dutch upper secondary vocational students continue into tertiary VET, and around three-quarters of Korean upper secondary vocational students do so. Vocational programmes at upper secondary level come to fill a dual role, both as a means of direct labour market entry and as a means of entering post-secondary education.

In those countries where access from vocational upper secondary programmes to tertiary education is more limited, there is often pressure for change. In Germany where very few people with simple apprentice qualifications currently enter tertiary education, a 2009 reform offers university access to all those with the Master craftsman (*Meister*), technician or *Fachwirt* title alongside all graduates from upper secondary vocational programmes with 3 years of work experience in relevant subjects. It is too early to evaluate the impact of these reforms (Hoeckel and Schwartz, 2010).

The transition from school to work: unemployment and dropout

Quintini and Manfredi (2009) discuss different transition patterns from school to work across OECD countries. They note that in countries with regulated labour markets and strong apprenticeship systems, such as Germany, about 80% of school leavers succeed in integrating into the labour market[1]. Such countries contrast with countries with regulated labour markets but without strong work-based training integrated into the formal school system, such as Italy and Spain where more than a third of young people end up in unemployment or inactivity. The German transition rate is impressive, especially the transition rate of graduates from vocational high school who have the same employment rate as tertiary graduates at the beginning of their career (OECD, 2010d). But their employment perspectives worsen over time if compared with holders of tertiary degrees. Countries with regulated labour markets but without strong vocational education encourage employers to hire young and inexperienced people by lowering employment costs for this population. Consequently, many young people enter the labour market with temporary contracts[2]. In some cases this has led to the development of a dual labour market, with a sector of permanent and well-protected jobs divided from a secondary sector of temporary and less secure employment (see for example, Maurin, 2009 on France).

Dropout is a major challenge for virtually all countries and vocational programmes typically face higher dropout rates than general education. Policies include provision to retain students in education and training, and second chance opportunities for those who dropped out (see Box 1.6). For an OECD review on overcoming dropout from upper secondary education (see Lyche, 2010, forthcoming).

Box 1.6 Retention measures and second chance opportunities

Retention measures

In **Austria** students who do not find an apprenticeship place may participate in so called *überbetriebliche Ausbildung* (ÜBA) courses, which are legally equivalent to apprenticeships. Students are either in full-time off-the-job training in ÜBA centres with a view to obtaining their apprenticeship certificate, or participate in training in simulated companies and receive support from ÜBA centres to find a regular apprenticeship place.

Source: Hoeckel, K. (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training:Austria,* OECD, Paris. Available at: *www.oecd.org/dataoecd/29/33/45407970.pdf*

In **Belgium-Flanders** part-time vocational education combines 1-2 days a week at school and 3-4 days of other activities. The latter may consist of employment, volunteering, specific programmes to develop employability skills and individual guidance for vulnerable students.

Source: Flemish Ministry of Education and Training (2010), Flemish Ministry of Education and Training website, *www.ond.vlaanderen.be/onderwijsaanbod/dbso,* accessed June 2010.

In **Germany**, the newly launched 'Education Chain Initiative' aims to assist those students who currently find difficulties in transiting from school to the vocational education and training system. The objective is to replace isolated transition measures with structured support for students at risk. Following a national screening procedure at 7th grade two strategies are envisaged: inside schools to support students in acquiring core basic skills and outside schools where a coach supports young people in their transition to vocational programmes – particularly apprenticeships.

Source: Hoeckel, K., and R. Schwartz (2010)*, Learning for Jobs: OECD Reviews of Vocational Education and Training: Germany,* OECD, Paris. Available at: *www.oecd.org/dataoecd/9/6/45668296.pdf*

Second chance opportunities

In **Ireland**, Youthreach offers a programme including general education, vocational training and work experience to unemployed early school leavers aged 15-20. Those over 21 years can benefit from the Vocational Training Opportunities Scheme to acquire general or vocational certificates, or attend part-time education through the Back to Education Initiative.

Source: www.youthreach.ie, www.vtos.ie, www.education.ie

In the **United States** young people over 16 who left high school without earning a high school diploma may take General Educational Development (GED) Tests to acquire a credential (diploma or certificate, varying by state). GED Tests measure skills and knowledge in mathematics, reading, writing, science and social studies. GED credentials are generally accepted as equivalent to high school diplomas.

Source: American Council on Education (2010), GED Testing Service website, *www.acenet.edu/AM/Template.cfm?Section=GED_TS*, accessed June 2010.

The OECD review

This OECD review on *Learning for Jobs* undertook a range of analytic work alongside 17 country reviews to provide advice to countries on how to make their initial VET systems more responsive to labour market needs. Further details are in Box 1.1.A global economic crisis developed while the review was under way, and although its impact was very variable, it clearly had some significant effects on VET systems. Ireland, for example, faced the challenge of coping with apprentices made redundant midway through their training. Hard pressed employers concerned by their immediate survival may be less willing to offer workplace training – an issue examined as part of this OECD review in Brunello (2009). Fewer jobs mean that young people often choose to postpone their entry into the labour market, preferring to continue in full-time education and training; but public expenditure pressures, sharpened by the crisis, sometimes make it much harder to accommodate the increasing demand. Some opportunities are also emerging – for example to redeploy the practical skills of unemployed professionals as trainers.

Collecting comparative data on VET systems across countries

Given the absence of systematic comparative evidence on the differences between national VET systems, one element in this study was the use of a questionnaire administered to national authorities, designed to identify the main characteristics of national VET systems – including how practical training is conducted, funding, the involvement of the social partners and decentralisation of control (see Box 1.7). This study addresses the difficult challenge of comparing the characteristics of VET systems in different countries. This means summing different vocational programmes within countries into aggregate measures which can be compared internationally. Thus, the internal diversity of individual countries and their institutions is not visible in these tabulations, but this is the price of meaningful international comparisons. The results are used extensively here.

Box 1.7 The OECD International Survey of Vocational Education and Training Systems

In this exercise the OECD put a wide variety of questions to participant countries about their VET systems, regarding teaching and training staff, consultation with the social partners, funding and decentralisation of control. The questionnaire was in three parts, covering upper secondary VET, continuing VET and cross-sectoral issues.

In order to compare different countries, the results from different programmes have had to be aggregated. Many of the results are presented in terms of the percentage of national vocational programmes to which the response applies. This is calculated as a weighted average of enrolment in different programmes.

Full details will be published in Kuczera (forthcoming).

Taking account of previous and parallel work

Analytic work on VET has been conducted in universities and national institutes, and in international bodies such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Labour Organisation (ILO) and the agencies of the European Commission - the European Centre for the Development of Vocational Training (CEDEFOP) and the European Training Foundation (ETF). Within the OECD there is work on transition from school to work and the associated labour market issues (*e.g.* OECD 2009c on the United States), work on local skills strategies (OECD, 2010c) and analysis of VET systems within the frame of the rolling economic reviews of individual OECD countries (for example on Germany OECD, 2010d). Previous OECD work is summarised in Hoeckel (2008).

There remain many big gaps in this range of work. One is comparative policy analysis, undertaken across a range of different countries to identify policy solutions that work. This is thin on the ground despite some useful initiatives such as a recent study undertaken by the Bertelsmann Foundation (Rauner, 2009).

The second big gap is data. ISCED remains a weak instrument for identifying vocational programmes in secondary and tertiary education, so data on the percentage of the cohort that enters VET remains patchy. Tying VET tracks to labour market outcomes remains impossible at an international level. While these data weaknesses represent a large and continuing challenge, new programmes of work on VET statistics both in the OECD and in the EU context aim to address them.

Defining the scope

The main, but not exclusive focus of this report is on initial VET for young people. This is for two reasons. First, the OECD has previously given attention to VET in the context of employee training and adult learning, notably in the thematic review of adult learning (OECD, 2005b). Second, in the country reviews the main policy focus requested by reviewed countries has been initial VET. Upper secondary VET (ISCED level 3) was the focus in many of the reviews. The main policy messages from this study therefore also concern initial VET. These policy messages do not therefore concern the training of employees by enterprises.

This report is inevitably selective in its coverage. The guiding principle has been to include material where there was something useful to say. An initial scoping exercise for this review identified a large range of potential issues for examination (Grubb, 2007) including many issues not dealt with here. To ensure that the study preserved its focus and responded to country demands, a single objective was identified – that the study should aim to help countries improve the responsiveness of their VET systems to labour market needs. We here interpret this objective as follows:

> *Ensuring that VET students are provided with the skills necessary to work in an "entry" set of occupations, and the broader and flexible competences necessary to sustain a fulfilling career, in the context of rapid and sometimes unpredictable changes in occupational circumstances.*

The structure of the report

Chapter 2, *Meeting labour market needs*, discusses how VET systems can provide the right numbers of trained people, with the right mix of competences for the labour market. Chapter 3, on *Career guidance* describes its role, the challenges to effective provision, and proposals for reform. Chapter 4, on *Effective teachers and trainers*, proposes measures to sustain and develop the teacher and trainer labour force, both in schools and in workplaces. Chapter 5, on *Workplace learning*, explains its many advantages, and suggests some ways of encouraging employers to offer workplace training, balanced by effective measures to ensure quality. Chapter 6, on *Tools to support the system*, explores some key tools necessary to deliver effective learning for jobs. These include institutions to engage the social partners, qualification frameworks, standardised assessment arrangements, better data on the labour market outcomes of VET, and a more systematic approach to evidence-based policy making.

Notes

1. 90% in employment over five year period.
2. This simplified picture does not take into account educational attainment, which has an impact on transition patterns.

References

American Council on Education (2010), GED Testing Service website, *www.acenet.edu/AM/Template.cfm?Section=GED_TS,* accessed June 2010.

Becker, G. S. (1975), *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, Columbia University Press for NBER, New York.

Brunello, G. (2009), *The Effect of Economic Downturns on Apprenticeships and Initial Workplace Training: a Review of the Evidence,* OECD, Paris. Available at: *www.oecd.org/dataoecd/51/41/43141035.pdf.*

Department of Education and Science (2010), Vocational Training Opportunities Scheme (VTOS) website, *www.vtos.ie,* accessed June 2010.

Department of Education and Science and the Department of Enterprise, Trade and Employment (2010), Ireland's Education and Training Programme for Early School Leavers, Youthreach website, *www.youthreach.ie* accessed June 2010.

Department of Education and Skills (2010), Department of Education and Skills website, *www.education.ie*, accessed June 2010.

Finegold, D. and D. Soskice (1988), "The Failure of Training in Britain: Analysis and Prescription", *Oxford Review of Economic Policy*, No. 4, pp. 21-53.

Flemish Ministry of Education and Training (2010), Flemish Ministry of Education and Training website, *www.ond.vlaanderen.be/onderwijsaanbod/dbso*, accessed June 2010.

Forrest Cataldi, E. (2009), "Career and Technical Education in the US. An Overview of Secondary, Post-secondary and Adult Career and Technical Education", prepared for the OECD Review of Vocational Education and Training, 'Learning for Jobs'.

Gashi, A., G. Pugh and N. Adnett (2008), "Technological Change and Employer-provided Training: Evidence from German Establishments", *Working Paper* No. 26, Swiss Leading House.

Grubb, N. (2007), *Vocational Education and Training: Issues for a Thematic Review,* OECD, Paris. Available at: *www.oecd.org/dataoecd/43/26/43900508.pdf*

Harhoff, D. and T. Kane (1997), "Is the German Apprenticeship System a Panacea for the US Labour Market?", *Journal of Population Economics*, Vol. 10, pp. 171-196.

Hoeckel, K. (2008), *Key Evidence on Vocational Education and Training Policy from Previous OECD Work,* OECD, Paris. Available at: *www.oecd.org/dataoecd/41/62/43897509.pdf.*

Hoeckel, K. (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Austria,* OECD, Paris. Available at: *www.oecd.org/dataoecd/29/33/45407970.pdf.*

Hoeckel, K., and R. Schwartz (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Germany,* OECD, Paris. Available at: *www.oecd.org/dataoecd/9/6/45668296.pdf.*

Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Ludwig, V. and F. Pfeiffer (2005), "Abschreibungsraten allgemeiner und beruflicher Ausbildungsinhalte", *ZEW Discussion Paper*, No. 05-36.

Lyche, C. (2010, forthcoming), *Taking on the Completion Challenge – a Literature Review on Policies to Prevent Drop Out and Early School Leaving*. OECD, Paris.

Meer, J. (2007), "Evidence on the Returns to Secondary Vocational Education", *Economics of Education Review*, No. 26, pp. 559–573.

Maurin E. (2009), "La peur du déclassement. Une sociologie des récessions", La République des idées, Seuil.

National Center for Education Statistics (NCES), Career/Technical Education (CTE) Statistics, *http://nces.ed.gov/surveys/ctes/tables/index.asp.*

OECD (2004), *Education at a Glance 2004: OECD Indicators, OECD, Paris.*

OECD (2005a), *Chair's Summary. Meeting of the Education Chief Executives, Copenhagen, 22 to 23 September 2005*, OECD, Paris. Available at: *www.oecd.org/dataoecd/56/34/35557211.pdf.*

OECD (2005b), *Promoting Adult Learning,* OECD, Paris.

OECD (2008), *Education at a Glance 2008: OECD Indicators*, OECD, Paris.

OECD (2009a), *Working Out Change: Systemic Innovation in Vocational Education and Training,* OECD, Paris.

OECD (2009b), *Jobs for Youth. United States*, OECD, Paris.

OECD (2010a), OECD Stat Extracts website, *http://stats.oecd.org/Index.aspx*, accessed June 2010.

OECD (2010b), Jobs for Youth Review website, *www.oecd.org/employment/youth*, accessed June 2010.

OECD (2010c), *Designing Local Skills Strategies,* OECD, Paris.

OECD (2010d), *Economic Survey of Germany*, OECD, Paris.

Quintini G. and T. Manfredi (2009), "Going Separate Ways? School-To-Work Transition in The United States and Europe", OECD Social, Employment and Migration Working Papers No. 90, OECD, Paris.

Rauner, F. (ed.) (2009), Steuerung der beruflichen Bildung im internationalen Vergleich, Verlag Bertelsmann Stiftung, Gütersloh.

Wolter, S. C. and B. Weber (2005), "Bildungsrendite – ein zentraler oekonomischer Indikator des Bildunswesens", Die Volkswirtschaft, No. 10, pp. 38-42.

Chapter 2

Meeting labour market needs

This chapter looks at how the mix of provision in vocational programmes is determined – how many people are trained in different fields – and, within each field, what mix of specific and general skills should be taught.

Three main factors determine the mix of provision – student preference, employer needs and the limitations of existing capacity. It argues that the right balance between these factors depends on issues like who is paying for the training and the age of the student. It discusses the different potential means of assessing employer needs, and points to the practical difficulties of forecasting future skills needs.

Graduates of vocational programmes need occupation-specific skills alongside generic transferable skills to carry them through their working career, including the ability to adapt to fast-changing workplace requirements. Numeracy and literacy skills are increasingly important in the modern workplace, and vocational systems need to give sufficient weight to them.

Funding and the mix of provision

Economists advance a number of reasons why basic education should be provided and funded largely by government, rather than being left to individuals:

- *Parental responsibility:* Children need protection and care to ensure that decisions taken by parents are in the children's interests.
- *Efficiency:* Investing in the early stages of education is more cost-effective than later on, partly because learning begets learning.
- *Credit constraints:* Families may not have enough cash and borrowing capacity to fund desirable education investments.
- *Equity:* The opportunity to realise human potential through education should be as independent as possible from social background and family wealth.
- *Externalities:* The benefits of education fall to society as well as to the individual.

Given the cumulative weight of these five points, OECD countries normally provide free or almost free basic education and in most OECD countries upper secondary education (including vocational programmes) is increasingly regarded as an upper tier of basic education; and commonly free of fees. Beyond basic education, education is sometimes more restricted and/or subject to fees. Countries regulate access to free public education by different means. One possibility is to establish rules regarding those entitled to publicly funded provision. In Norway, the statutory right to education (Youth Right) favours young people. It guarantees to students who are 15 years old and have completed primary and lower secondary education the right to three years of full-time upper secondary education, including VET, in one of the three programmes of their choice. The entire right must be used during a period of five or six years. Those to whom this right does not apply may still enrol in upper secondary VET but they will not be given priority in admission to a programme of their choice, if the programme is in high demand among young students.

Sharing the benefit, sharing the costs

Vocational programmes aim to provide the skills for jobs or careers. These skills benefit employers directly. The distribution of benefits will depend on the mix of skills being learnt – for example skills specific to an industrial sector yield benefits to that sector. The distribution of benefits

should ideally be reflected in the distribution of funding responsibilities so as to provide the right incentives for optimal skills provision. In setting up funding arrangements, particularly for post-secondary VET, the following points should be kept in mind:

- As the benefits to employers vary between vocational programmes, unconstrained student choice of these programmes is unlikely to yield the optimal mix of VET provision. Suppose, for example, that engineering skills drive innovation and economic growth in a manner which is very helpful to the economy but where the benefits are not adequately captured in the wages of engineers. This might mean that the incentives to pursue engineering qualifications would be limited and there would be fewer VET engineering graduates than would be socially desirable. In such circumstances, either government or engineering employers might be justified in subsidising provision.
- Often when the benefits are shared a risk of under-provision emerges, because all the stakeholders have incentives to free-ride on the contributions of others. For example, employers might aim to benefit from government and student contributions to training without contributing themselves.
- A market in vocational education and training, with students paying the full costs of their tuition, would be likely to yield fewer skills than would be optimal, since it would only reflect the returns to students but not the wider returns to employers and the economy more broadly. For example if the cost to the student is EUR 1000, and the return to the student is EUR 800, then students have little incentive to take the course, even though, if employers also get a benefit of EUR 600 from the trained student, there would be a collective net benefit if the student took the course. One solution is for government to subsidise fees for VET students, so that for example the student here only pays EUR 400 for the course. Alternatively, local employers could subsidise provision, perhaps by providing some of the training in the workplace.

In response to these shared benefits, a variety of funding models have emerged, involving some sharing of the costs of provision between government, student, and employer. Some contributions will be in kind, for example in terms of the time and facilities contributed by employers to workplace training, or through time off work through training. This is typical for apprenticeships where often the government covers the costs of off-the-job education and training and employers bear the cost of workplace training, including a modest wage for apprentices. Table 2.1 illustrates some

of the different ways in which government and students share the costs at secondary level. The relative size of these elements is important. For example, fees for publicly funded vocational programmes at upper secondary level in Australia are modest – a small fraction of the true cost of provision. In Denmark and Finland fees apply to vocational programmes for adults only while individual costs for young people are offset by a system of grants and loans.

Table 2.1 Who pays for VET?

Percentage of upper secondary vocational programmes

	Programmes provided by institutions charging fees	Programmes where students are eligible for support from public funds through:		
		Tax relief*	Loan*	Grant*
Australia[1,2]	■■■■	■■■	-	■■■
Austria	■	■	-	■■■■
Belgium (Flanders)	■■	-	-	■■■■
Denmark	■	-	■■■■	■■■■
Finland[1]	■■	-	■■■■	■■■■
Germany	-	-	■	■
Hungary	-	-	-	■■■■
Japan	■■■■	-	■■■■	■
Netherlands[1]	■■■■	-	■■■■	■■■■
Norway	-	-	■■■■	■■■■
Sweden	-	-	■■	■■■■
Switzerland	-	-	-	■■■■
Turkey[1]	■■■■	■■■■	-	-

Note: Estimated percentage of VET upper secondary programmes: - 0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%.

1. Fees are subject to government guidelines in public sector.

2. Most programmes, although 'upper secondary' in terms of ISCED level, are outside the school sector.

* For definitions see Glossary.

Source: Kuczera (forthcoming). *The OECD International Survey of VET Systems*, OECD, Paris.

Whatever the national arrangements, VET funding needs to be consistent with the principles used to fund broader education. For example, suppose that a country has fees in tertiary education funded through income-contingent loans, backed by grants for low income students. In principle within that framework higher level vocational programmes might be subject

to the same regime – unless there is some evidence that VET students respond in a different way, for example because they are more averse to taking on loans, or because vocational programmes lead to a higher wage premium than other postsecondary programme. Thus in Australia, the OECD review recommended that fees for higher level VET qualifications should be levied on the same broad basis as for higher education, and defrayed through the same income-contingent loans used for higher education (Hoeckel *et al.*, 2008). This has since been implemented as VET FEE HELP. Common principles can of course imply differential funding of vocational and non-vocational programmes, for example because employers benefit more from the vocational programmes and may therefore be expected to contribute more.

Getting the right number of trained persons

Young people in education make choices – to study another foreign language, take advanced maths, or opt for a vocational catering course. These choices are hard, and can have lasting consequences. They are also constrained: some options are not available or not funded by government. Student and employer preferences may overlap but there will also be some differences. Employers expect VET to provide them with the best employees equipped with skills they need. Policy makers for VET (as for other parts of education) have to decide how far to give students the programmes they prefer and how far to provide the programmes corresponding to employer needs (and decide how those needs should be assessed). In addition, countries can only provide vocational programmes where they have the teachers, the trainers, and the facilities necessary to the task.

Main influencing factors

Three main factors are used to determine the mix of provision – student preference, employer needs and supply constraints.

Student preference

The preferences of individual students for their courses of study are important for three reasons. First, students are often good judges of their own skills and the characteristics that may make them better suited to one job than another – so taking account of their preferences leads to higher productivity. Second, students know more about what they most enjoy doing, so that even when the labour market outcomes are weaker, they are

compensated in terms of their well-being. Third, it is counterproductive to coerce students into careers they do not want – the very high proportion of VET graduates in nearly all countries who change occupations after only a few years probably reflects some welcome career development, but it may also be the result of some misconceived career choices.

Employer needs

Where the mix of vocational provision is planned, (rather than being driven by student preferences), it needs to rest on a systematic assessment of employer needs, now and in the future. But if provision is determined exclusively on the basis of employers' views, some risks emerge. Employer interests are not the same as either student or societal interests. Employers may want very narrow skills in occupational niches, or skills for declining industries and for jobs which are unpleasant and badly paid, or they may want an oversupply of skills to drive down wages in the associated occupations. "Skills shortages" as perceived by employers might also be perceived as "low wage", or "unpleasant job" areas by potential employees or trainees. Industries in structural decline may also complain of skills shortages because they cannot attract workers into low wage positions with few obvious career prospects. Adjustments to the vocational training system will not solve these problems. Employer demand for certain skills is not a fixed given, since there is scope to adapt technology and the workplace to eliminate the least pleasant jobs and to match the available supply of skills. These employer demands need to be kept in balance with the interests of society at large, including the interests of the student.

In principle, unions will aim to ensure that VET provision does not result in an oversupply of skills (as this would drive down wages and create unemployment), and that sufficient transferable skills are developed to ensure that their members have the means to move to other related occupations, recognising that potential mobility improves their wage bargaining position. At the same time, unions may have an interest in limiting new entrants to a profession or occupation, so as to maintain high wages.

Both employer and union views on VET and the level of their engagement in VET policy vary markedly among countries. They depend on many factors, among other things on the structure of the economy and education system, the organisation of bodies that represent employers and employees and the level of recognition of these bodies among those who they represent. In Korea, for example, trade unions tend not to be interested in initial VET at upper secondary level since the SMEs sector, to which

upper secondary VET tends to lead, is not unionised (see Kuczera, Kis and Wurzburg, 2009). These issues are discussed further in Chapter 6.

Clearly students in vocational programmes have interests in their education and training which are different both from those of unions and employers. In principle their interests should also be recognised in the planning of provision. In practice, because students are rarely sufficiently well-organised to press their interests collectively, it falls to government to articulate student interests on their behalf.

Supply constraints

VET institutions' together with their staff embody a historical commitment. Supply constraints quite properly influence the mix of provision – schools cannot immediately respond to rapidly changing demand, as new equipment is costly, teachers and trainers cannot be easily changed or retrained, and programmes take some time to complete. Even in the long run, cost considerations may constrain provision because some types of equipment are just too expensive for VET institutions. In fast-growing industrial sectors some skills may be so prized that it is difficult to find someone with the relevant skills willing to work as a trainer.

While the pace of adjustment is always limited, there needs to be sufficient incentive on the supply side of VET institutions to respond to new and emerging labour market needs. Financial incentives are sometimes used to stimulate a quick response from VET institutions to new demands from the labour market (*e.g.* the creation of programmes in green technologies). The United States uses competitive grants to improve flexibility and responsiveness of VET institutions. For example, the Perkins Instructional Equipment and Supplies Grant provides funds to purchase up-to-date instructional equipment and supplies. In the application process, schools have to prove that the equipment has been recommended by business and industry, and describe how students will benefit from it (*http://finance1.doe.mass.edu/Grants/grants10/rfp/411.html*). School competition is another way of limiting supply constraints. Where individuals are free to choose a VET provider, this potentially opens up a market or quasi-market in provision, and improves the responsiveness of VET institutions to student and employer preferences. This will typically apply in systems where students can freely choose the institution or employer providing VET and where public funding of VET providers is defined on a *per capita* basis and follows the student. Box 2.1 sets out some of the pros and cons of such a market approach.

Box 2.1 Does competition help to improve VET provision?

In VET, as in many other public policy areas, some countries are seeking to use markets as a device for increasing efficiency. One potential advantage of competition is that it may force the system to respond to student preferences in respect of the mix of provision; VET institutions offering unattractive programmes will lose both students and funding.

More broadly, some have argued that competition increases cost effectiveness, improves student performance, and creates a system better tailored to student needs (Bradley *et al.*, 2001; Woodfield and Gunby, 2003). Others argue that competitive pressures may decrease student performance if market mechanisms and institutional autonomy are not matched by an adequate accountability system (Wößmann *et al.*, 2007). They may also limit the quality and quantity of provision to disadvantaged hard-to-reach groups and, in the absence of targeted corrective policies, may create more segregation (Bradley and Taylor, 2002).

In countries that have adopted an open market approach, competition between institutions, both private and public, should be fair, as this ensures good value for money. When a community service obligation falls on public institutions alone (such as the requirement to take students when private institutions go out of business) this needs to be properly recognised and recompensed.

In **Australia** a nationally agreed policy on "user choice" funding for apprenticeships and traineeships is operated by the states and territories. Under this policy the employer and the apprentice/trainee can choose the training institution and the form of training delivery. States and territories implement the policy in a number of different ways. Some states define which apprenticeships or traineeships are eligible for user choice funding, primarily as a strategy for rationing places and ensuring quality of provision.

In **Sweden** students attend the upper secondary VET school of their choice. All upper secondary schools, including authorised independent (private) schools, are fully funded per student by the municipality and tuition is free of charge. Permission to start an independent school is given on the condition that the school follows the nationally provided syllabus and teaches the same democratic values as schools run by the school-boards (Swedish Association of Independent Schools: *www.friskola.se/Om_oss_In_English_DXNI-38495_.aspx*; Skolverket: *www.skolverket.se/sb/d/354*). However, public and independent schools are not bound by exactly the same rules, *e.g.* independent schools are not subject to requirements set at municipal level (Skolverket, 2006); this poses a potential risk to fair competition among schools.

Balancing student preference and employer needs: some principles

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.
- *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).

Mechanisms to realise the balance

Countries use different mechanisms to balance student preferences and employer needs, while limiting supply constraints that risk distorting the mix. There are three main types of approach: first, provision can be regulated through the availability of workplace training (see below); second, VET authorities can initiate an assessment of skills needs, which then informs the VET provision strategy. Third, career guidance can be used to inform students about changing labour market requirements, aligning student preferences more closely with employer needs. In practice, these

approaches are often blended together with more or less weight given to one or the other.

One quite general problem is that vocational programmes often take some years to complete, so there is a time lag between the decision on the mix of provision and when VET graduates enter the labour market. In Denmark, for example, students are accepted into a vocational programme two years before they start their apprenticeship and four years before they are ready to enter the labour market. In Austria, Germany and Switzerland, apprenticeships typically take two to four years to complete. School-based programmes are also several years long. Many employers find it hard to predict their future requirement for recruits. Students also find it hard to predict which kinds of jobs are going to be in demand in the future (Borghans, Grip, and Heijke, 1996). Anticipating future skill needs, both regionally and by occupational sector, and defining the necessary VET output, is also a difficult task for forecasters. Despite this difficulty, some mechanism is necessary. If VET provision is not shaped by labour market needs, it will be more likely to reflect the capacity of VET institutions[1] (often biased towards existing and cheaper programmes) and uninformed student preferences. These difficulties in anticipating future skills reinforce the argument for equipping young people with strong general skills, as these underpin lifelong learning and the ability to adapt to changing requirements (see below).

Adjustment through workplace training

Employer needs and student preferences may be brought into balance through a market in workplace training. In systems where the offer of places in VET is tied to the availability of workplace training places, employers can influence the number and mix of places in VET through their willingness to offer such workplace training – for example in apprenticeships. Students thus have a choice between a range of programmes, but are limited to those in which workplace training is available. In Germany and Switzerland, for example, those who do not find an apprenticeship place cannot go on to obtain an apprenticeship qualification. (Often, of course the final mix of provision is not solely based on market adjustment – while the availability of workplace training is a major factor, in many countries with apprenticeship systems, the state also plays an active role – by expanding off-the-job practical training or by providing incentives for companies to train -see Chapter 5).

Even predominantly school-based programmes may use the availability of workplace training as an indicator of labour market relevance – the OECD review of Sweden, for example, recommended making a 15-week

work placement over a three-year period compulsory for all upper secondary vocational programmes (Kuczera *et. al*., 2008). The logic of this proposal was to change the relationship between school-provided programmes and employers, so that even though 15 weeks would be a relatively small part of the programme, the programme should not run unless it can at least attract the support of employers for a modest work placement. This recommendation is now being implemented in Sweden.

The use of workplace training can also improve the match between labour market needs and VET provision by reducing distortionary supply constraints. Where practical training is provided mainly in companies, the capacity of VET institutions to provide up-to-date equipment, teachers and trainers becomes less of a constraint.

Assessing future skills needs

The rationale of vocational programmes is that they will provide the skills needed in future jobs. But the shape of future labour market needs is inevitably misty. The challenge is to identify what can reasonably be predicted both in the short term and some years into the future, and what cannot. Labour market demand for skills in different areas can be assessed in many different ways: one possibility would be consultations with local employers and unions on current skills needs; another would be long-term forecasts of future needs based on consultation with employers or carried out by independent bodies. Many OECD countries (*e.g.* Australia, Canada, Ireland and Finland) forecast trends in employment mainly by occupational categories, often on a time horizon of five to ten years (Neugart and Schömann, 2002). The European Union has also created medium-term skills forecasts in the European Union as a whole and in each member country (CEDEFOP, 2008).

Many countries (*e.g.* Ireland, Finland) use skills forecasts as a very broad guide to governments and public agencies in policy making, and to inform students and social partners. In Ireland, the "Expert Group on Future Skills Needs" and the "FÁS/ESRI Manpower Forecasting Programme" produce medium and long-term forecasts, which feed into the country's skills strategy(EGFSN, 2007). Some countries, such as Australia, have also used such projections to plan VET provision in more specific terms. Based on national forecasts, a national strategy is developed, which is then used as a basis in each state's and territory's plan for VET provision (DEST, 2006). At the state level, local factors may be taken into account to make revisions to centrally planned numbers (Gasskov, 2000). More recently, following the establishment of Skills Australia, Australia has shifted its approach towards a model which gives more weight to demand factors. In some other places,

like South Carolina (US) and Belgium-Flanders, planning is based on more *ad hoc* consultations with business. Such consultations are used to assess demand among local companies before a new programme can be launched in post-secondary VET.

Creating reliable forecasting models is very challenging, since the demand for skills depends on numerous factors, many of which are difficult to predict, such as technological progress, global economic conditions, and government policies – which in turn depend on voting behaviour. Evaluations of forecasting models suggest that they can provide useful indications on overall labour market trends, but are often unreliable at the level of specific occupations (Neugart and Schömann, 2002; Sexton, 2002; Barnow, 2002; Richardson and Tan, 2007). In some specific areas, such as health care and education, forecasts may play a more central role, since they can be linked to relatively stable demographic trends, and the state is often the dominant employer. Even in these areas, increasingly, international migration interrupts the relation between national training efforts and labour supply – for example through the international migration of healthcare workers.

Career guidance

Effective career guidance can also better align student preferences with labour market requirements (see Chapter 3). Earlier work by Fogel and Mitchell (1973) argued that student tastes are not always in line with labour market needs and while some influences, such as personality and interests, are desirable, as argued by Culpepper (2006) others, like prejudices about an occupation, need to be minimised. In fact student preference, informed by good information about labour market prospects, can play a strong role in linking provision to labour market needs because in general students prefer to follow courses that will lead to good jobs. A German study (Heckhausen and Tomasik, 2002) found that information on labour market prospects can constructively change how students view their “dream job”. As the deadline for applying for an apprenticeship approached and as students received feedback from potential employers, what students defined as their “dream job” became more sober and realistic.

Using incentives

Additional incentives can be used to address skills shortages. Thus:

- Targeted grants can be given to students who train in designated areas of skills shortage. For example, Hungary has recently

established such a grant for secondary VET students in particular sectors.

- Incentives to fill skills shortages may be used to boost the amount of workplace training offered by employers. Many countries offer financial incentives (*e.g.* subsidies, tax breaks) to companies and use non-financial measures to stimulate the offer of workplace training places (see Chapter 5).
- The influence of the availability of workplace training on the mix of VET provision may also be reduced, when VET authorities introduce off-the-job practical training to tackle the lack of apprenticeship offers (*e.g.* Austria, Denmark). But such provision can be adjusted to the assessed needs of the labour market. In Austria the Labour Market Service, which organises such training, takes into account demand for skilled labour. In Denmark the state limits the number of students admitted to programmes in which students cannot find an apprenticeship place or where overall employment prospects are poor (Danish Ministry of Education, 2005).

Getting the right mix of skills in vocational programmes

Clearly employers are in a strong position to judge what mix of skills is optimal for particular occupations and it therefore makes sense for employers to play a key role in establishing the curriculum. However, if employers have too dominant an influence, programmes may overestimate the importance of occupation-specific skills and give insufficient attention to the generic skills needed for mobility between firms and between occupations (Smits, 2007). The interests of employers depend on the level at which they are expressed. While locally employers may not wish their employees to have strong transferable skills since this may increase labour turnover, collectively employers have an interest in a flexible and adaptable labour force.

As argued in Chapter 1, vocational education and training programmes need to realise a balance between providing students with a set of very practical occupational skills that will make them immediately employable and productive, and will therefore facilitate their entry into the labour market, and a set of broader transferable skills, including (for example) numeracy, literacy, team-working, communication skills, flexibility and the capacity to learn new skills. Some of these skills underpin other learning including the learning of practical vocational skills. They also build into an individual's skill-set the capacity to adapt to changed circumstances and

skill requirements. These transferable skills are necessary because the individual may move jobs, or make a career shift, and they underpin further learning. While all the skills mentioned here are important, much of the hard evidence on transferable skills concerns numeracy and literacy, and they are therefore the main but not exclusive focus of the discussion which follows.

As also discussed in Chapter 1, in OECD countries many students following vocational tracks at upper secondary level continue into tertiary education. This requires sufficient emphasis on core literacy and numeracy skills not just to ensure a basic minimum for all, but also to realise the full potential of able students in vocational programmes to pursue advanced educational courses.

Commentators have different views on the relative importance of specific and generic skills (Billet and Hayes, 1998; Kilpatrick, Hamilton, and Falk, 2001). Specific skills acquired in VET should allow a smooth transition to the labour market without lengthy additional occupation-specific training. Apprenticeships need firm-specific elements to serve the short-term economic interests of firms, at least in the first instance, since this will help to encourage employers to offer workplace training. The balance of different skills in upper secondary vocational programmes is highly variable but at one end of the spectrum, in many apprenticeships, there is a rather small element of numeracy and literacy skills as part of the (typically) one or one and a half days a week part-time school element in the dual system. At the other end of the spectrum some students in full time vocational schools have a full programme of numeracy and literacy teaching – for example in Swedish vocational schools, where the core requirements are the same as in general upper secondary education.

Why general skills are increasingly important

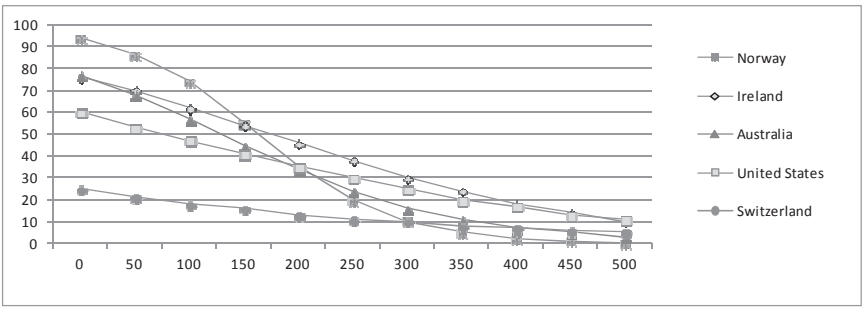
Various studies highlight the importance of general content in the curriculum. In modern economies an increasing number of jobs, including blue-collar jobs, require sound generic skills. A study from the United States (Autor, Levy, and Murnane, 2003) suggests that technological change (in particular computerisation) has made problem solving and complex communication skills much more important in the labour market. The development of these skills is underpinned by good literacy and numeracy skills (Levy and Murnane, 2004). More generally, learning – both in initial VET and in lifelong learning – is difficult without strong basic skills. Labour markets change rapidly and often unpredictably. As virtually all workers will need to acquire new skills during their career, literacy and numeracy are particularly valuable in the long run (Kézdi, 2006). In sectors facing rapid technological change, the ability to learn is crucial and the

generic skills underpinning this ability are highly valued by employers (Smits, 2007; Ghost, 2002; Köllő, 2006). In low-technology industries and at lower skill levels generic competences may be less valued by employers, but such workers need to be able to switch jobs, since they are precisely the ones at risk of job loss due to diminishing job opportunities (Smits, 2007).

Strong literacy and numeracy skills are associated with better performance on the labour market. Data from IALS show that people with weak literacy skills are more likely to be unemployed, even if other background variables (educational attainment, age, gender) are taken into account (Figure 2.1). An Australian study (Chiswick, Lee and Miller, 2002) found that about half of the total effect of education on labour market outcomes (labour force participation, unemployment) can be attributed to literacy and numeracy[2].

Figure 2.1 Probability of unemployment and literacy proficiency

Probability of being unemployed according to prose literacy score, for men aged 16-25 with less than upper secondary education, 1994-1998



Source: OECD and Statistics Canada (2000), *Literacy in the Information Age. Final Report of the International Adult Literacy Survey*, OECD, Paris.

Insufficient coverage of general skills

One of the main functions of compulsory school is to teach basic skills of numeracy and literacy, and weaknesses in this area cannot be blamed on the VET system. But very frequently, those with weak academic skills in numeracy and literacy are directed to vocational tracks. For example in Austria in 2003, nearly 40% of those in part-time vocational schools had weak literacy skills (level 1 and below on the PISA test) (Hoeckel, 2010). While early childhood and school interventions to tackle these problems would undoubtedly be the best solution, vocational programmes clearly need

to address the issues arising. Table 2.2 indicates that in a number of OECD countries students in vocational programmes are spending more than half their time in practical training. Of their remaining time, some will be spent learning the 'theory' of their target occupation and the remainder typically on more general education.

Table 2.2 How much practical training* in a VET qualification?

Estimated percentage of upper secondary vocational programmes

	Time spent in practical training as ratio of total programme				
	75% or more	*Between 50% and 75%*	*Between 25% and 50%*	*Less than 25%*	*Varies depending on institutions, programmes, fields, etc*
Australia[1]					■■■■
Austria	■■	■	■■	■	-
Belgium ((Flanders)	■	■	-	-	■■■■
Czech Republic	-	■	■■■■	-	-
Denmark	-	■■■■	-	-	-
Finland	■■■■	-	-	-	-
France	■	■■■■	-	-	-
Germany	-	■■■■	■	-	-
Hungary	-	■	■■■	■	-
Netherlands	■	■■	■■■	■	■■■■
Norway	-	■■■■	-	-	■
Sweden	-	-	■■■	-	-
Switzerland	■	■■■■	-	-	■
Turkey	-	■■■■	-	■	-
United States	-	-	■■■■	-	-

Note: Estimated percentage of vocational upper secondary programmes: - 0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%.

1 Most upper secondary vocational programmes are outside the school sector.

* For definitions see Glossary.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Developing general skills in vocational programmes

Tackling serious deficiencies in literacy and numeracy

For some students in vocational programmes, very weak basic skills are a serious difficulty. Studies show that many people cannot adequately assess their own literacy and numeracy weaknesses. Data from the United Kingdom show that many people with weak basic skills do not recognise that they have difficulties, particularly in respect of numeracy (Bynner and Parsons, 2006). A literacy survey in Canada found that the average correlation between self-assessed scores and test scores was only 0.42 (Finnie and Meng, 2005). This study also suggests that individuals assess their literacy skills relative to a sort of "local norm", *e.g.* school mates, friends or colleagues, so they may be entirely unaware of literacy problems if those in their environment have similarly low levels of literacy. On the other hand, the same study also shows that background factors (like learning difficulties as a child) have a greater effect on individuals' perceptions of their skills than on their actual literacy levels. In other words, people with learning disadvantages are more likely to report difficulties, while those without such disadvantages are more likely to overestimate their skills. Even when people know they have literacy and numeracy problems they may be reluctant to admit it. A study of further education colleges in the United Kingdom (Basic Skills Agency, 1997) found that there was a stigma attached to poor basic skills, which then became a deterrent to taking up basic skills support.

Greater awareness of literacy and numeracy problems encourages many people to seek help. An analysis from British cohort studies (Bynner and Parsons, 2006) found that once people were aware of weaknesses in their basic skills, they tended to be interested in improving these skills. This is in line with an earlier study of further education students (Basic Skills Agency, 1997), which found that many people did not know that basic skills were essential to the successful completion of their course. Although literacy and numeracy deficiencies among VET students are rooted in weaknesses in basic education, the evidence shows that later interventions to tackle these problems can improve learning outcomes in vocational programmes, with one study showing that such interventions can have a dramatic impact (see Box 2.2).

Box 2.2 Helping with basic skills as a means of encouraging successful course completion

A study from the United Kingdom (Basic Skills Agency, 1997) explored the relationship between basic skills support and dropout, retention and completion rates in further education colleges. Of 15 000 students, 4 400 were identified as in need of basic skills support, 90% of them in a vocational course. The study followed up these students – less than half of them received literacy and numeracy support.

Reasons for not taking up support. Some students were not told the results of the basic skills assessment or did not understand what the results meant. Others could not take up support because of their timetable. Take-up was higher where support was offered as part of the course rather than as an optional extra. But the most important barrier was attitude – young adults in particular were reluctant to take up support because of the stigma attached to poor basic skills. Also, many were not aware of the need to improve their basic skills to get through their course.

Forms of basic skills support. Basic skills support was available through workshops offering drop-in and timetabled support for individuals and groups. Some colleges developed partnership-teaching, in which basic skills specialists and course tutors worked together to offer support as part of a course. This approach had two advantages: it made it possible to support those who were reluctant to attend targeted workshops, and it related basic skills development to the student's course.

Did basic skills support make a difference? Those who received basic skills support were three times less likely to drop out. They also had better completion (those on a two-year course) and qualification rates (those on a one-year course) than those who did not receive support.

	Dropout	Completed the year / Achieved a qualification		
	Withdrawal rate	Completed/achieved	Not completed	Not assessed results not known
Support	10%	75%	16%	10%
No support	30%	54%	33%	13%

In summary, basic skills problems are widespread, damaging, often unrecognised, but remediable. It follows that there is a very strong argument for systematically assessing the literacy and numeracy skills of students at the point of entry to vocational programmes so as to identify people in need of support. In Belgium-Flanders, for example, jobseekers complete a quick-scan test and, if necessary, are directed to adult basic education centres. In the United States, entrants to post-secondary institutions are tested and may be referred to developmental education, which aims to remedy gaps in basic skills. It is important to handle any such test carefully, so that it is not seen

as a mere instrument of selection and a barrier to entry. Support measures should be designed in a way that encourages take up: support should be easily available; adapted to the diverse needs of individuals, including those with low motivation and limited independent learning skills; and it should be marketed in a positive way to avoid it being stigmatising (Basic Skills Agency, 1997).

Contextual learning

One way of enhancing basic skills training in vocational programmes would be to increase the number of hours devoted to academic basic skills in vocational programmes. But students (above all the young men who have the biggest problems especially with literacy) might not want to spend more time at school, while teachers may not be keen to teach basic skills to unmotivated students, and employers in the dual system do not want to decrease the time apprentices spend in the workplace. The inclusion of workplace experience in school programmes of students who are less academically orientated may also be helpful. Solga and Kohlrausch (2009) found that those pursuing a programme including practical elements in the teaching towards the *Hauptschulabschluss* had relatively positive outcomes in terms of both academic results and in finding an apprenticeship place afterwards. There is also evidence that people with low qualifications tend to be distinctive in their learning preferences, learning more easily in an applied setting than abstractly or independently (see Table 2.3).

Table 2.3 Learning preferences by qualification level, 2003

(EU-citizens plus Norway and Iceland, aged 15+, n=18 007) in %

Preferred forms of learning	Highly qualified	Low qualified
Searching for information on something the person is interested in	**38**	12
Course at school, university or further education institution	**33**	15
Leading or training other people	**25**	10
Observation and analysis of a situation	**23**	18
Doing something new by using new machines or equipment	25	**29**
Doing things together with friends	25	**27**
Training at the workplace	16	**23**
Observation how other people do things and imitating them	11	**23**

Source: Eurostat, Eurobarometer

In the light of such evidence, one option is to integrate basic skills with vocational content, so that, for example, the students learn trigonometry

while doing woodwork. An example from the United States demonstrates the potential of this approach (see Box 2.3). Other OECD countries, such as Belgium-Flanders and Germany use the same model. At the same time the approach is challenging. It requires careful planning linked to teamwork, with general teachers working closely with teachers of vocational subjects.

Box 2.3 Math-in-CTE - Integrating basic skills in vocational education and training in the United States

What is the Math-in-CTE approach?

The Math-in-CTE approach was developed from the idea that maths is present in all areas of career and technical education (CTE) but often implicit to both teachers and students. It aims to make maths more explicit as a necessary tool for solving workplace problems and help improve students' understanding of maths both in and out of context. It consists of teacher professional development and a pedagogical framework.

A research study (Stone *et al.*, 2006) tested this model in five occupational areas. In the experimental group, each CTE teacher was partnered with a maths teacher. Together they built a curriculum that intersected maths and CTE concepts, identified opportunities to emphasise maths in the curriculum, and developed lessons for implementing these based on a specific pedagogical framework. This framework makes maths concepts in CTE courses explicit by gradually moving from fully CTE-contextualised examples to more abstract maths. For instance, learning about the T-square in a carpentry class is an opportunity to teach the Pythagoras theorem.

After one year of maths-enhanced lessons, the students in the experimental group performed better on standardised tests of maths ability. This was not detrimental to the learning of the vocational content – at the end of the year there were no differences between the experimental and control group in terms of occupational or technical knowledge.

Lessons learned

According to participating teachers, partnership between teachers was critical. Close one-to-one collaboration between CTE and maths teachers improved CTE teachers' confidence in maths and strengthened mutual respect for each other's expertise. Another key factor was that the programme went beyond "a set of lesson plans": teachers worked together in a structured framework and participated in professional development. "The model works, but it is hard work, and it won't work unless the teachers want to participate".

The study also identified some challenges. Some teachers had concerns because CTE teachers are not trained to teach maths and maths teaching takes time away from CTE. Another issue was whether it is CTE teachers' responsibility to teach maths that students should have learned earlier.

Wider transferable skills

In many countries surveys show that employers strongly value soft skills, such as the ability to work in teams, communication skills and work discipline. In Austria, for example, a survey found that the lack of soft skills, such as reliability and adequate manners, was a common reason for rejecting apprenticeship applicants (Schneeberger and Nowak, 2007). In South Carolina, employers rated work ethic and maturity as the most lacking of skills among their employees right out of high school (21%), the second was basic reading and writing, closely followed by social skills (18% and 17% respectively). In comparison, practical work experience and technical training were considered missing by 9% of employers.

Workplaces provide a particularly effective environment in which to acquire soft transferable skills. While an apprentice electrician can learn how to wire a house in a VET school with the relevant electrical equipment, that electrician will normally need a work placement to find out how to deal with a complaining client. A study of sales assistants in Denmark (Aarkrog, 2005) found that soft skills were best acquired on the job. Simulating practice (*e.g.* through role play) at school was perceived by students as artificial and of limited use. A study from Finland (Lasonen, 2005) found that workplace training taught students entrepreneurship, promoted maturity and supported the development of practical soft skills like initiative, problem-solving skills and the use of information sources. While some relevant theory may be best learned in a classroom environment, workplaces are often necessary to bring that theory to life. Other research has shown that it is easier to develop professional skills in work-based training than to transfer theoretical knowledge, learned at school, into practice (Aarkrog, 2005; Woerkom, Nijhof and Nieuwenhuis, 2002).

Other skills, such as entrepreneurship, are highly relevant to many occupations to which VET leads, but have been often neglected in traditional vocational programmes. Some countries have recognised the importance of entrepreneurial skills and have created programmes in this area. In Belgium-Flanders, for example, the Flemish Agency for Entrepreneurial Training (Syntra Vlaanderen) and aims to stimulate entrepreneurship. It offers a range of training programmes, including courses in business management, entrepreneurial training as part of apprenticeships, and specific entrepreneurial training at ISCED 4C level.

Meeting labour market needs: conclusion

Arguments and evidence

- VET yields returns to individuals, employers and society.
- The mix of provision in vocational programmes does depend, and should depend, on three factors: student preferences, employer needs and the capacity of the system to deliver different types of training.
- Student preference should be an important driver of provision, since students know their own capacities and interests, but typically it should be balanced by some measure of employer needs. When full fees are paid, and when students are older, student preference should play a more leading role in determining provision.
- Forecasting skills requirements into the future, locally and by occupational sectors, is challenging as a means of planning provision.
- A number of mechanisms are available to balance student preference and employer needs, including the different planning and incentive mechanisms, and the availability of workplace training – as in apprenticeship systems.
- VET graduates need a good mix of occupation-specific skills and more generic transferable skills. General skills of numeracy and literacy are increasingly important in the labour market. Weaknesses in these basic skills are widespread among students in vocational programmes, often unrecognised and are damaging, but remediable.

Meeting labour market needs: OECD recommendations

- For vocational programmes beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
- Provide a mix of VET training places that reflects both student preferences and employer needs. Achieve this through the provision of workplace training and through planning and incentive mechanisms.
- Engage employers and unions in curriculum development and ensure that the skills taught correspond to those needed in the modern workplace.
- Through VET systems, provide young people with the generic, transferable skills to support occupational mobility and lifelong learning, and with the occupation-specific skills that meet employers' immediate needs.
- Ensure all students in vocational programmes have adequate numeracy and literacy skills to support lifelong learning and career development. Identify and tackle weaknesses in this area.

Notes

1. Here, and throughout the report, "VET institutions" is used to describe providers of vocational education and training, including schools, training institutions, colleges and private providers, but excluding workplace training provided by companies.
2. Adding literacy and numeracy to a regression of labour market status on schooling increases the explanatory power of the model.

References

Aarkrog, V. (2005), "Learning in the Workplace and the Significance of School-based Education: A Study of Learning in a Danish Vocational and Training Programme", *Lifelong Education*, Vol. 24, No. 2, pp. 137-147.

Autor, D. H., F. Levy and R. J. Murnane (2003), "The Skill Content of Recent Technological Change: An empirical exploration", *Quarterly Journal of Economics*, Vol. 118, No. 4, pp. 1279-1333.

Barnow, B. (2002), "Occupations and Skills in the United States: Projection Methods and Results Through 2008", in M. Neugart and K. Schömann (eds.), *Forecasting Labour Markets in OECD Countries, Measuring and Tackling Mismatches*, Edward Elgar, Cheltenham.

Basic Skills Agency (1997), *Staying the Course. The Relationship between Basic Skills Support, Drop Out, Retention and Achievement in Further Education Colleges*, Basic Skills Agency, London.

Billet, S. and S. Hayes (1998), "Balancing the Demand: Realigning VET Policy and Practice", Conference papers from "*Vocational Knowledge and Institutions: Changing Relationships"*, 6th Annual International Conference, Griffith University, 50, pp. 79-96.

Borghans, L., A. D. Grip and H. Heijke (1996), "Labor Market Information and the Choice of Vocational Specialization", *Economics of Education Review* , Vol. 15, No. 1, pp. 59-74.

Bradley, S. *et al.* (2001), "The Effect of Competition on the Efficiency of Secondary Schools in England", *European Journal of Operational Research*, Vol. 135, No. 3, pp 545-568.

Bradley, S. and J. Taylor (2002), *The Report Card on Competition in Schools*, Adam Smith Institute, London.

Bynner, J. and S. Parsons (2006), *New Light on Literacy and Numeracy*, National Research and Development Centre for Adult Literacy and Numeracy, London.

CEDEFOP (2008), *Future Skill Needs in Europe – Medium-term Forecast*, Office for Official Publications of the European Communities, Luxembourg.

Chiswick, B.R., Y.L. Lee and P.W. Miller (2002), "Schooling, Literacy, Numeracy and Labor Market Success", *IZA Discussions Paper* No. 450, *ftp://repec.iza.org/RePEc/Discussionpaper/dp450.pdf*

Culpepper, R.A. (2006), "The Role of Perceptions of Future Extrinsic Outcomes and Person-Environment Congruence in Career Choice", *Journal of Organizational Culture, Communications and Conflict*, Whitney Press, Vol. 10, No. 2

Danish Ministry of Education (2005), *The Danish Vocational Education and Training System*, Danish Ministry of Education, Copenhagen.

DEST (Department of Education, Science and Training) (2006), *Skilling Australia, 2005-2008 Commonwealth-State Agreement for Skilling Australia's Workforce*, Commonwealth of Australia, Canberra.

EGFSN (Expert Group on Future Skills Needs) (2007), Tomorrow's Skills. Towards a National Skills Strategy, *www.skillsireland.ie/press/reports/skills_strategy/pdfs/egfsn070306_skills_strategy_report_webopt.pdf.*

Finnie, R. and R. Meng (2005), "Literacy and Labour Market Outcomes: Self-assessment Versus Test Score Measures", *Applied Economics*, Vol. 37, No. 17, pp. 1935-1951.

Fogel, W. and D. Mitchell (1973), "Higher Education Decision-Making and the Labor Market", in M. Gordon, (ed). *Higher Education in the Labor Market*, New York: McGraw Hill.

Gasskov, V. (2000), *Managing Vocational Training System, A Handbook for Senior Administrators*, International Labour Organisation, Geneva.

Ghost, S. (2002), "VET in Schools: The Needs of Industry", *Unicorn: Journal of the Australian College of Educators*, Vol. 28, No. 3, pp. 61-64.

Heckhausen, J. and M.J. Tomasik (2002), "Get an Apprenticeship before School Is Out: How German Adolescents Adjust Vocational Aspirations When Getting Close to a Developmental Deadline", *Journal of Vocational Behavior*, No. 60, pp. 199-219.

Hoeckel, K.,*et al*. (2008), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Australia*, OECD, Paris. Available at: *http://www.oecd.org/dataoecd/27/11/41631383.pdf.*

Hoeckel, K., (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Austria*, OECD, Paris. Available at: *www.oecd.org/dataoecd/29/33/45407970.pdf.*

Kézdi, G. (2006), *Not Only Transition: The Reasons For Declining Returns To Vocational Education*, CERGE-EI.

Kilpatrick, S., V. Hamilton and I. Falk (2001), *Issues of Quality Learning: Apprenticeship in Rural and Remote Australia*, CRLRA, Sydney.

Köllő, J. (2006), "Workplace Literacy Requirements and Unskilled Employment in East-Central and Western Europe", *Budapest Working Papers on the Labour Market 2006/07*, Institute of Economics, Hungarian Academy of Sciences, Budapest.

Kuczera, M., *et al.* (2008), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Sweden*, OECD, Paris. Available at: *www.oecd.org/dataoecd/26/55/40755122.pdf.*

Kuczera M., V. Kis and G. Wurzburg (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Korea*, OECD, Paris. *www.oecd.org/dataoecd/53/49/42689417.pdf* .

Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Lasonen, J. (2005), "Workplace as Learning Environments: Assessments by Young People after Transition from School to Work", *www.bwpat.de/7eu*.

Levy, F. and R.J. Murnane (2004), "Education and the Changing Job Market", *Educational Leadership*.

Neugart, M., and K. Schömann (2002), *Employment Outlooks: Why Forecast the Labour Market and for Whom?* Discussion Paper FS I 02 - 205, Wissenschaftszentrum Berlin für Sozialforschung.

OECD and Statistics Canada (2000), *Literacy in the Information Age. Final Report of the International Adult Literacy Survey*, OECD, Paris.

Richardson, S. and Y. Tan (2007), *Forecasting Future Demands*, NCVER, Adelaide.

Schneeberger, A. and S. Nowak (2007) Hemmende und fördernde Faktoren der Lehrlingsaufnahme. Ergebnisse einer Lehrbetriebsbefragung, IBW-Bildung & Wirtschaft No 41, *www.ibw.at/html/buw/BW41.pdf*, accessed June 2010.

Sexton, J. (2002), "A Review of Occupational Employment Forecasting for Ireland", in M. Neugart and K. Schömann (eds.), *Forecasting Labour*

Markets in OECD Countries, Measuring and Tackling Mismatches, Edward Elgar, Cheltenham.

Skolverket (2006), *Schools Like Any Other? Independent Schools as Part of the System 1991-2004*, Skolverket, Stockholm.

Skolverket (2010), The Swedish National Agency for Education website, *www.skolverket.se/sb/d/354*, accessed June 2010.

Solga, H. and B. Kohlrausch (2009), *Erhöht dualer Schulalltag die Abschlussquote und die Berufsfähigkeit von Hauptschüler/innen? Erste Ergebnisse einer Projektevaluation des SOFI*, Mitteilungen aus dem SOFI, Vol. 7, No. *3, Göttingen, www.sofi-goettingen.de/fileadmin/SOFI.../Mitteilungen_7.pdf* .

Smits, W. (2007), "Industry-specific or Generic Skills? Conflicting Interests of Firms and Workers", *Labour Economics*, No. 14, pp. 653-663.

Stone, J.R. *et al*. (2006), *Building Academic Skills in Context: Testing the Value of Enhanced Math Learning in CTE*, National Research Center for Career and Technical Education, University of Minnesota.

Swedish Association of Independent Schools (2010), Swedish Association of Independent Schools website, *www.friskola.se/Om_oss_In_English_DXNI-38495_.aspx*, accessed June 2010.

Wößmann, L., *et al*. (2007), "School Accountability, Autonomy, Choice and the Level of Student Achievement: International Evidence from PISA 2003", Report for the OECD.

Woerkom, M., W. Nijhof and L. Nieuwenhuis (2002), "Critical Reflective Working Behaviour: a Survey Research", *Journal of European Industrial Training*, Vol. 26, No. 8, pp. 375-383.

Woodfield, A. and P. Gunby (2003), "The Marketization of New Zealand Schools: Assessing Fiske and Ladd." *Journal of Economic Literature*, No. 41, Vol. 3, pp. 863-884.

Chapter 3

Career guidance

One way of ensuring that vocational programmes meet labour market needs is to give VET students good guidance. As careers diversify, career choices and therefore career guidance are becoming both more important and more demanding.

To meet this challenge, there needs to be a coherent career guidance profession, with personnel experienced in labour market issues and separated from psychological counselling. Guidance needs to be adequately resourced, with some assurance of pro-active one-to-one delivery of guidance at key career decision points. Guidance personnel need to have an independent base to underpin their objectivity, and be able to call on a wide range of information and web-based material. Strong links between schools and local employers are very important means of introducing young students to the world of work. Guidance initiatives also need to be carefully evaluated.

The main features of career guidance

As described in Chapter 2, student preference can play a very important part in determining the mix of vocational provision in many countries. Rather than being something opposed to employer needs, it can, if well-guided, help to deliver a mix of provision which is in line with those needs. A major review of career guidance policy and practice was undertaken by the OECD (2004) and as part of the Learning for Jobs exercise one of the authors of the 2004 report revisited the issues and linked them to the particular challenges of guidance in VET (Watts, 2009). Figure 3.1 provides one (quite limited) indicator of the prevalence of career guidance in OECD countries.

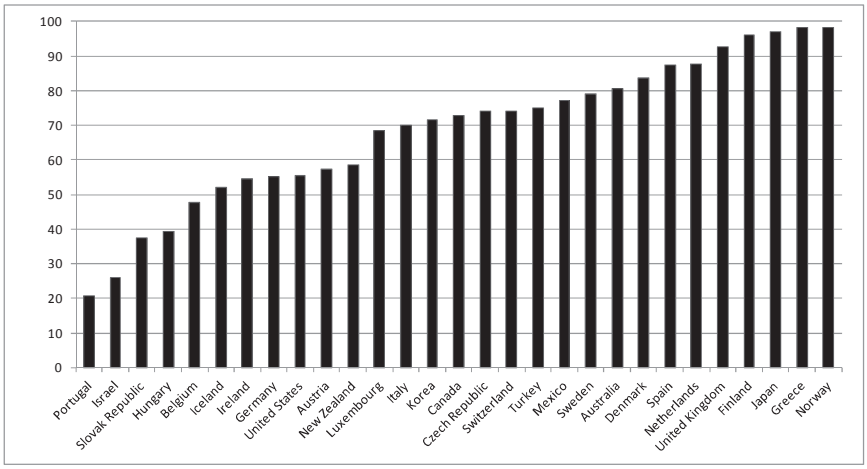
Career guidance has two main elements:

- ***Career education*** in which students learn about the world of work and develop career management skills through classroom teaching, and through other activities such as work experience.
- ***Individual career advice*** on a one-to-one basis, providing specific advice on career decisions; either pro-actively (mandatory interviews for all) or reactively (on demand).

Both elements are underpinned by ***career information*** on courses, occupations and career pathways. Such information is increasingly web-based. It both supports career services in schools and VET institutions and provides information directly to students.

Figure 3.1 Provision of career guidance at secondary school

Percentage of secondary schools where career guidance is formally scheduled into students' time according to interviews with school heads



Source: OECD (2007), Programme for International Student Assessment (PISA) 2006 Database, *http://pisa2006.acer.edu.au/*.

Note: These data should be treated with caution. They come from interviews with school heads as part of the PISA exercise, and in some cases they appear to contradict formally promulgated school policies which indicate that guidance is fully mandatory in some countries. This may reflect nuances, or perceived nuances in the meaning of "formally scheduled."

Why career guidance matters

In nearly all OECD countries, education systems are growing and diversifying, with more courses for different target groups. At the same time, jobs and careers are constantly evolving and job security is diminishing. While these changes are expanding opportunities, they also increase the complexity and difficulty of choices that young people need to make. As argued in Chapter 1, in the field of VET the expectation that initial vocational training would prepare students for one occupation for their entire working life has increasingly been replaced by a sequence of complex choices and changes over a lifetime of learning and work. As a result, career choices, and therefore career guidance, are becoming both more important and more demanding.

Where formal sources of career guidance are not available, students rely on informal sources, such as family and friends. While such sources have their strengths, they may lack reliability and impartiality and confine choices to the known and familiar (OECD, 2004). They may also tend to reinforce existing social disadvantages since, for example, poorly educated parents may not be in a position to advise their children on the full range of career options which might be available to them. If young people choose the wrong career early on the costs of later changes can be high (although these costs may be reduced by flexible pathways to other occupations or educational tracks).

The challenges

In principle, effective guidance services can yield large returns. The evidence shows that good quality career guidance develops the career related skills, self-awareness and self-esteem which lead to rewarding choices (Bowes *et al*. 2005; Hughes *et al.* 2002)[1]. But a number of challenges need to be addressed if OECD countries are to realise these outcomes. Staff providing career guidance are sometimes inadequately prepared for dealing with labour market issues, services may be fragmented and under-resourced, advice often lacks objectivity, relevant labour market information is not always available and career guidance initiatives are often not effectively evaluated.

Inadequate preparation of guidance personnel

Career guidance personnel are very often trained in the context of psychological counselling, with a heavy emphasis on psychological dysfunction. While this background may be appropriate for supporting students with personal problems, it does not equip them to deliver advice on types of job, career prospects, and learning opportunities. Labour market information often receives limited attention within psychology-dominated programmes (Watts, 2009).

Combining psychological counselling and career guidance services also has drawbacks. Evidence from different countries shows that professionals who have to deal with both aspects spend much of their time on the learning and behavioural problems of a minority of students; career guidance is then marginalised and tends to focus on immediate educational choices rather than longer term career planning (Fretwell and Watts, 2004; OECD, 2004; OECD, 2002a). Students may be less willing to be seen knocking on a counsellor's door since they may be stigmatised as having personal problems. In the United Kingdom, the integration of careers with personally-

based services targeting young people at risk has decreased the attention paid to labour market issues in the training of career advisors (Colley *et al.*, 2008) and reduced the number of students who receive career guidance (Watts, 2008).

The educational background of those who provide career advice also counts. If they have spent most of their lives in education (*e.g.* academically trained teachers responsible for career advice) their experience of the wider work environment will be limited and their formal or informal advice to students may be biased towards general education and university pathways. They may be reluctant to recommend vocational courses, particularly to bright students. As one UK study reports, parents, young people and employers all considered apprenticeship as a genuine alternative to academic upper secondary education, whereas very few teachers shared this view (Skills Commission, 2009).

Fragmentation and under-resourcing

Career guidance is often fragmented and/or delivered by multiple agencies to the same target groups. Within the school, it is often delivered by regular teachers with an additional responsibility for career guidance. This function is often under-resourced because the activity competes with the 'mainstream' teaching functions of educational institutions which tend to dominate priorities. While there are attractions in integrating career guidance into a broad curriculum, guidance may easily be neglected if only provided as an aspect of another subject. Schools often lack the capacity and expertise to deliver the quite complex demands of an integrated service (National Audit Office, 2005). Sometimes career guidance is delivered through publicly-funded employment services, but such services focus primarily on getting unemployed adults back into work and off benefits – a narrower perspective than desirable to guide the career choices of young people. Sometimes, particularly for adults, guidance is delivered through other agencies such as trade unions, employers, voluntary organisations and private-sector organisations.

When resources for career guidance are lacking, one-to-one guidance may only be offered to students who seek it out, meaning that it is only utilised by those students who are most aware of its value – bypassing the most uncertain and disadvantaged students who often have the greatest needs. Higher achievers tend to be readier to seek advice and information and to have clearer ideas about their progression (Transition Review Group, 2005).

Lack of objectivity due to institutional bias

In many countries schools and other education and training institutions themselves provide information and career guidance to potential students. These career guidance counsellors may not be able to provide an objective view of all the career options or a dispassionate assessment of the labour market outcomes of their study programmes. Furthermore, these institutions commonly have incentives to direct students towards programmes offered at their own institution even where this is not in the students' interest. Such pressures are particularly marked in systems that link school funding to student recruitment (OECD, 2004), and where there is a demographic decline in student numbers.

Absence of relevant labour market information

There are many sources of information on individual courses and occupations, but much of it is biased publicity material. In some countries, government agencies may provide objective occupational forecast information such as the US Bureau of Labor Statistics' annual *Occupational Outlook Handbook*.[2] Although this information is all available on-line, it may still be a significant challenge for those advising students to use the information effectively.

It is harder to obtain information on optimal (and possible) pathways from education to occupations, the extent to which particular courses of study lead toward desired jobs, and the prevailing wage rates and unemployment risks in different occupational fields. Labour market data are complex and often require careful interpretation. Longitudinal and follow-up data, showing what happens to graduates once they are in the labour market, are a very important guide to the value of courses, but they are often lacking.

Need for further evaluation evidence

Both theoretical and empirical arguments support the view that career guidance has useful outcomes both for the individual and the economy. The empirical literature shows a positive impact of career guidance on short-term learning outcomes like knowledge of opportunities and decision-making skills. There is also some evidence of positive effects on outcomes like educational achievement. But the evidence on longer term impacts is more limited (see OECD, 2004).

Policy responses

A coherent profession

Career guidance responsibilities are demanding and important: the assimilation of the guidance profession into psychological counselling distorts and marginalises this role. In general, therefore, countries should seek to establish a separate profession of career advisors. This was recommended, for example, in the OECD review of vocational education and training in the Czech Republic (Kuczera, 2009).

The competences required for career guidance include:

- Good knowledge of labour markets, careers and learning opportunities, and the capacity to identify and use further relevant sources of information to provide more specific career advice to individuals.
- The capacity to draw out from young people what their interests, aptitudes and objectives are and together to identify career choice solutions which are both realistic and meet their needs.

Box 3.1 Training career advisors in England and Switzerland

The University of East London offers a postgraduate diploma in career guidance that can be pursued by those with a recognised university degree or equivalent. It can be completed either in one year full-time or in two to three years part-time. It trains people to work with a range of client groups. The programme covers: theory and practice of career guidance, strategies to promote equal opportunities in a guidance context, labour market studies, education systems, and organisation of guidance structures (OECD, 2004).

Career guidance counsellors in Switzerland hold a specialised diploma from universities or other publicly recognised institutions. Their training programme covers five broad areas: individual development (learning and developmental psychology); the individual in society (sociology, law and economics); the individual and the world of work (the education system, education and professional career choice, occupational psychology, the labour market); work methods (diagnostics, career guidance, monitoring, documentation and public relations); and professional ethics, professional identity and quality. In addition, the programme includes a 12-months traineeship (Schweizer Bundesrat, 2009).

Training for career advisors should be designed to provide these competences among others (see for example Box 3.1). This might involve a modest programme for a teacher who will be a part-time careers teacher, and a much more substantial programme for those who will become full-time career guidance professionals. Ideally, a qualification system for career advisors would cover not only those in schools but also other career guidance professionals, working in tertiary education and in employment offices and other services for adults. This would facilitate recognition and transferability of career advisor skills across these institutions. A competence framework for career advisors also helps to develop both vertical and horizontal progression opportunities and thus to improve the status of the profession (OECD, 2004).

Career success depends heavily on the capacity to manage and deploy one's own skills, alongside narrower capacities such as numeracy and literacy (see OECD, 2002b). It follows that career guidance has a very important role to play not only in advising individuals about specific choices, but also in helping to develop the capacity to manage one's own career. Pursuing this logic, the Australian Blueprint for Career Development, which was rolled out in 2008, is designed to help identify the skills, attitudes and knowledge that individuals need to make sound career choices. The Blueprint can be used by teachers, parents, career development practitioners and others to support individuals careers (MCEETYA, n.d.).

Adequate resources and pro-active delivery

Wrong career decisions are costly, both to the student, and to society. Guidance services need to be adequate and protected against the risk of being continuously squeezed at the margins of an activity such as regular teaching. Key elements of guidance should be delivered pro-actively to all students, so that students can be supported by one-to-one guidance by professionals when they make key career decisions. This means, for example, that when students are choosing a school track, or a particular school or vocational programme, there should be a compulsory one-to-one interview with a career guidance professional.

An independent base

While it makes sense to deliver guidance in schools in order to ensure access to all students, it is important that guidance professionals preserve their independence from the school. This could involve, for example, a professional career guidance service managed from outside schools, but with a roving function in the schools (see Box 3.2). It could also involve teachers

trained as guidance professionals who are accountable to standards agreed with the external guidance service in respect of their guidance responsibilities, and with a fixed time commitment to guidance work.

Box 3.2 Career guidance in Switzerland

In Switzerland career guidance and information sessions are mandatory in secondary education. All teachers receive some training on labour market opportunities. In grades 7, 8, and 9 students learn in their own schools about different career options and the main institutions for guidance and counselling (*Berufsinformationszentren*, BIZ). The BIZ centres are free-standing institutions providing information and counselling for all levels of education and training. Students can meet with generalist career counsellors, and may then be directed to specialists in different fields. BIZ centres work closely with schools, and sometimes provide some services at the school rather than at the BIZ site.

Good sources of information

Typically career information will be web-based but can usefully be supported by a range of printed material, and contact persons who can help with particular queries about individual occupations. Information sources need to be regularly updated, to identify emerging occupations and areas of skills shortage, as well as current and potential areas of skills oversupply and redundancy. An important function of guidance personnel will be to guide individuals in their use of all these information sources (see Box 3.3).

Box 3.3 Career information in different countries

In the **Czech Republic**, a website provides information on educational options and their labour market outcomes. Website users can learn about the range of programmes provided by secondary and tertiary institutions, their entry requirements, and the qualifications and jobs these programmes lead to. Information is presented about employment conditions and employee satisfaction in different occupations. This is supported by data on employment/unemployment rates and salaries by educational attainment and field. Web users can also learn about various occupations by watching video material available on the web site, and read about employer needs and their expectations in terms of the skills and competences sought in potential recruits.

Source: Národní ústav odborného vzdělávání (2010), Informační systém o uplatnění absolventů škol na trhu práce, *www.infoabsolvent.cz/*, accessed June 2010

In **Mexico,** the Ministry for Education has developed a career guidance tool available on USB sticks and online. It includes tools that help students to identify their strengths and interests, information on institutions and programmes, and data on the labour market outcomes in several (though not yet all) occupations and levels. Students can compare different career options, exploring whether graduates work in an occupation related to their training, how much they earn and their average working hours.

Source: SEP (Secretaría de Educación Pública) (Secretariat for Public Education) (2008), Orientación Vocacional en mi memoria website, *www.orientacionvocacional.sems.gob.mx*, accessed October 2008.

In **South Carolina** the College and Career Planning System offers detailed online information to students, parents and educators on a wide range of topics. The career planning section includes an overview of nearly 1000 occupations, describing the occupation, important interests, skills and abilities, education requirements and income. Students can obtain information on programmes after high school, ranging from 3-months training to doctoral programmes. They can also learn about preparing for different programmes and financing their studies.

Source: Personal Pathways to Success. (2010), *www.scpathways.org/Masterweb/content/SC/dispatch.aspx?category=career&page=main &major=guest&minor=career*, accessed June 2010.

In **Sweden**, the National Agency for Education maintains a website with descriptions of programmes in upper secondary schools, the occupations to which those programmes lead, and information on what former students on the different programmes do five years after finishing school – for example the type of further education, occupation, and the percentage outside the workforce.

Source: Skolverket (2010), Utbildningsinfo.se website, *www.utbildningsinfo.se*, accessed June 2010.

A comprehensive framework

Individual career guidance should be a part of a comprehensive career guidance framework, including a systematic career education programme to inform students about the world of work and career opportunities. This means that schools should encourage an understanding of the world of work from the earliest years, backed by visits to workplaces and workplace experience. Partnerships between schools and local firms allow both teachers and students to spend time in workplaces. Research studies suggest that young people particularly value information on jobs and careers if obtained in a real workplace and through contacts with working people (Transition Review Group, 2005) (see Box 3.4). Through such experience young people can be introduced to some of the choices they will face in their professional and learning pathways.

In the United States, for example, many of the high school vocational (or Career and Technical Education as it is commonly described in the US) courses are seen as 'career exploration'. Such courses are often intended to provide the student with the flavour of a career, without going so far as to fully prepare the student for jobs in the field (see Box 1.4). Many countries use work experience as a means of career education and guidance (see Box 3.4).

Box 3.4 Work experience

In **Austria**, **Germany** and **Switzerland** students in lower secondary programmes leading to apprenticeships pursue short work placements in companies. Their purpose is to provide young people with work experience, which can help them to choose a career path and find an apprenticeship place. Students participate in such placements mostly during the school holidays. A survey of around 1000 students in Switzerland found that these short work placements are an important information source for career choices and 61% of students were offered an apprenticeship place after completing the workplace experience (Herzog *et al*. 2004).

In **Denmark**, most lower-secondary students also have an opportunity to get the flavour of a real work environment. Between the age of 14 and 16 they usually undertake at least two different one-week work placements (OECD, 2002c).

In **Norway**, nearly all students in lower secondary education, regardless of whether they are or are not intending to enter a vocational programme, have one week of work experience in their 9th grade and some further work placement in grade 10. Schools often establish partnerships with local companies to facilitate exchanges between students and employers (OECD, 2002c).

Better evidence on what works

Career guidance initiatives need to be properly evaluated, to make the case for effective resourcing, and identify how best to employ those resources. Immediate impacts might be explored through follow-up surveys of those receiving guidance (and those who do not), while longer term impacts over several years also need to be measured. Randomised controlled trials can assess the impacts of (additional) intensive career guidance on randomly selected young people and compare them with control groups who do not receive the intervention.

Career guidance: conclusion

Arguments and evidence

- Given that student preference is an important element in determining the mix of provision, good guidance in support of those preferences is a very important way of matching provision to labour market needs. Such guidance is becoming more important as the range of career and educational choices open to individuals rises.
- Staff providing career guidance are sometimes inadequately prepared for dealing with labour market issues, with career guidance sometimes playing a subsidiary role to psychological counselling.
- Guidance services may be fragmented, under-resourced and reactive, so that those who need guidance most may fail to obtain it.
- Advice sometimes lacks objectivity because guidance personnel are based in education institutions with a pro-academic bias.
- Relevant labour market information is not always available or readily digestible and comprehensible.

Career guidance: OECD recommendations

- Develop a coherent career guidance profession, independent from psychological counselling and well-informed by labour market information.
- Provide adequate resources for guidance and pro-active delivery.
- Ensure an independent base to support objective career guidance.
- Provide good sources of information about careers and courses.
- Build a comprehensive framework of guidance through partnership with employers.
- Ensure that career guidance initiatives are properly evaluated.

Notes

1. For more information on difficulties in evaluation of career guidance impact see, for example, Maguire and Killeen (2003).
2. The Occupational Outlook Handbook has information on 250 different occupations covering 90% of jobs in the US economy. For each occupation, it provides information on: the training and education needed; earnings; expected job prospects; what workers do on the job; and working conditions. See: *www.bls.gov/OCO/*.

References

Bowes, L., D. Smith and S. Morgan (2005), *Reviewing the Evidence Base for Careers Work in Schools. A Systematic Review of Research Literature into the Impact of Career Education and Guidance During Key Stage 3 and Key Stage 4 on Young People's Transitions*, Centre for Guidance Studies, University of Derby.

Colley, H., C. Lewin, and L Mazzei (2008), "The Impact of 14-19 Reforms on Career Guidance in England: Some Early Findings", paper presented at Annual Conference of the British Educational Research Association, Edinburgh, 5 September 2008.

Fretwell, D. and A. Watts (2004), *Public Policies for Career Development. Case studies and Emerging issues For Designing Career Information and Guidance Systems in Developing and Transition Economies*, World Bank, Washington.

Herzog, W, M. Neuenschwander, E. Wannack (2004), "In engen Bahnen: Berufswahlprozess bei Jugendlichen", Synthesis 18, Schweizerischer Nationalfonds, Bern/Aarau.

Hughes, D., *et al.* (2002), *The Economic Benefits of Guidance*, Centre for Guidance Studies, University of Derby.

Kuczera, M., (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Czech Republic*, OECD, Paris. Available at: *www.oecd.org/dataoecd/50/28/44496125.pdf.*

Maguire, M. and J. Killeen (2003), *Outcomes from Career Information and Guidance Services*, Paper commissioned jointly by the European Commission and the OECD.

MCEETYA (Ministerial Council for Employment, Education, Training and Youth Affairs) (n.d.) Australian Blueprint for Career Development, *www.blueprint.edu.au.*

Národní ústav odborného vzdělávání (2010), Informační systém o uplatnění absolventů škol na trhu práce, *www.infoabsolvent.cz/*, accessed June 2010.

National Audit Office (2005), *Employers' Perspective on Improving Skills for Employment*, Report by the Comptroller and Auditor General. HC 461 Session 2005-2006, National Audit Office, London.

OECD (2002a), *OECD Review of Career Guidance Policies, Country Note Austria*. Available at: *www.oecd.org/dataoecd/47/46/2505725.pdf.*

OECD (2002b), "Rethinking Human Capital", *Education Policy Analysis 2002*, OECD, Paris.

OECD (2002c), *OECD Review of Career Guidance Policies, Country Note Norway*. Available at:*www.oecd.org/dataoecd/38/24/1937973.pdf.*

OECD (2004), *Career Guidance and Public Policy: Bridging the Gap*, OECD, Paris.

OECD (2007), Programme for International Student Assessment (PISA) 2006 Database, *http://pisa2006.acer.edu.au/*, accessed June 2010.

Personal Pathways to Success. (2010), *www.scpathways.org/Masterweb/content/SC/dispatch.aspx?category=career&page=main&major=guest&minor=career*, accessed June 2010.

Schweizer Bundesrat (2009), *Verordnung über die Berufsbildung §55-58, www.admin.ch/ch/d/sr/4/412.101.de.pdf.*

SEP (*Secretaría de Educación Pública)* (Secretariat for Public Education) (2008), *Orientación Vocacional en mi memoria* website, *www.orientacionvocacional.sems.gob.mx*, accessed October 2008.

Skills Commission (2009), *Progression through Apprenticeships*, Skills Commission, London.

Skolverket (2010), Utbildningsinfo.se website, *www.utbildningsinfo.se*, accessed June 2010.

Transition Review Group (2005), "A Systematic Literature Review of Research (1988-2004) into the Impact of Career Education and Guidance During Key Stage 4 on Young People's Transition into Post16 Opportunities", The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) University of London, *http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=346.*

U.S. Bureau of Labor Statistics (2010), *Occupational Outlook Handbook, 2010-11 Edition*. Available at: *www.bls.gov/OCO/.*

Watts, A.G. (2008), "The Partnership Model for Careers Education and Guidance in Schools and Colleges: Rise, Decline – and Fall?" *Career Research and Development, Vol. 20,* 4-8, National Institute for Careers Education and Counselling (NICEC).

Watts, A.G. (2009), *The Relationship of Career Guidance to VET*, OECD, Paris. Available at: *www.oecd.org/dataoecd/20/13/44246616.pdf.*

Chapter 4

Effective teachers and trainers

As in general education, the quality of the teaching and training profession is critical to effective learning in vocational programmes. This chapter argues that, in the face of shortages, countries need imaginative measures to encourage the recruitment of teachers and trainers, and to ensure that they have relevant and up-to-date workplace skills. This means facilitating the recruitment of practitioners from industry into vocational teaching and training, and encouraging part-time working, with trainers spending some of their time in workplaces, to improve the understanding of industry in VET institutions. Supervisors of trainees and apprentices in workplaces need relevant preparation, particularly to carry out their pedagogical role. Interchange and partnership between VET institutions and industry should be encouraged.

Classifying VET teachers and trainers

Within general education, it is recognised that the quality of the teaching force is one of the key factors that supports effective learning. This has led to a wide range of policy initiatives designed to improve the quality of the teaching force. Very similar considerations apply to teachers and trainers in vocational programmes.

Within any VET system, many people formally and informally are involved in the transmission of vocational skills and knowledge. In this report we shall refer to *vocational trainers* as those, whether in VET institutions or workplaces, who are primarily responsible for imparting practical vocational skills, and to *vocational teachers* as those who are primarily responsible for theoretical vocational skills. In addition, many VET institutions also contain *general teachers* who are responsible for general subjects, such as mathematics or second languages. In practice the divisions between different types of teacher and trainer will work very differently in different countries and the boundaries are often blurred: in Norway, for example, the teaching of theoretical and practical vocational skills is increasingly combined, while in Switzerland general subjects (*e.g.* sciences) are often adapted to the relevant vocational field (*e.g.* for electricians).

Teachers and trainers in vocational institutions

The problem: ageing workforces and limited workplace experience

In many OECD countries, the teacher and trainer workforce faces two interconnected challenges. First, the workforce is ageing. Many European countries face a shortage of vocational teachers and trainers in VET institutions, or expect to face such a shortage soon (Cort, Härkönen and Volmari, 2004). In Sweden, for example, more than half of the vocational teachers and trainers in upper secondary schools are over 50 (Skolverket, 2007). The ageing VET workforce is also a challenge in Australia (NCVER, 2004).

Many countries have found it difficult to compensate for the growing wave of retirements. When recruiting vocational teachers and trainers, VET institutions have sometimes had to compete with industry and are often unable to offer competitive salaries, particularly in fast-growing professions where trainers are most in demand. But in the context of an economic downturn and increasing unemployment, the relative attraction of working

as a VET teacher increases, as has been observed during the recent recession. Countries need to be ready to take advantage of these circumstances by creating pathways to retrain those with relevant vocational skills as teachers and trainers.

A second challenge is ensuring that trainers in VET institutions – and to a lesser extent teachers of VET theory – are familiar with the fast-changing requirements of modern workplaces. Although empirical evidence on this issue is scarce, a review of existing evidence in the United States suggests that having relevant work experience is helpful, particularly to novice teachers and trainers, since it provides them with a context and increases their confidence in teaching for their occupation. However, workplace experience above a certain threshold level appears to have no further positive impact on teaching effectiveness, so the nature of work experience may be more important than its length (Lynch, 1998).

The knowledge and skills of teachers and trainers in VET institutions need to remain up-to-date. An Australian study (Harris *et al.*, 2001) found that only 28% of full-time and 55% of part-time trainers rated their technical knowledge as being up-to-date. Given the overriding importance of the workplace in the objectives of VET, all trainers in VET institutions should be encouraged to spend time in workplaces, and if possible work there at least occasionally. Dalton and Smith (2004) observe that vocational teachers tend to think they are too busy to update their skills and knowledge unless in-service training is formally integrated as part of their job and recognised as part of their workload. The development and updating of work-related knowledge may also be encouraged through incentives, particularly wage incentives.

Potential solutions

Diversified routes into the profession

Where existing trainers in VET institutions lack workplace experience, more people equipped with practical workplace skills need to be encouraged to become trainers in such institutions. This will both enhance recruitment, and help to ensure familiarity with workplaces on the part of trainers. Another advantage of equipping trainers in VET institutions with work-related skills is that employers tend to attach more value to vocational training where the trainers are required to have work-relevant experience (Spark, 1999 in Dalton and Smith, 2004). Effective and diverse pathways of entry into the vocational teacher/trainer profession may help with this.

In many countries there are staff who work part-time as trainers and part-time in industry. Such arrangements offer particular benefits because these trainers remain in close touch with the changing needs of the modern workplace, and this pattern of working may also appeal to those who wish to develop a career as a trainer but retain a job in industry. Skilled workers may also be hired from companies on short-term contracts to fill trainer vacancies. Such arrangements exist in Norway, where VET institutions and local employers cooperate to ensure an adequate supply of vocational trainers. In countries where the status of the teaching profession is generally low and VET teaching positions attract few young people, partnerships between VET institutions and employers may help increase the attractiveness of the profession and thus attract well-qualified and enthusiastic candidates. To promote such arrangements, close collaboration between providers and employers is crucial.

Some countries, notably the United States, use an alternative certification system to attract highly qualified candidates to the profession (see Box 4.1).

Box 4.1 South Carolina DIRECT programme

In programmes such as welding, cosmetology and culinary arts, individuals with relevant work experience can enter the teaching profession through the state's CTE work-based certification programme. Candidates must show that they have the required competences by obtaining an appropriate industry certification or passing a state-approved competence examination in the chosen area.

The prospective CTE trainers coming from industry and business often have little experience with teaching. To provide them with pedagogical skills and help them to make a successful transition from industry to school, an obligatory training programme (DIRECT) was designed especially to meet their needs. The DIRECT programme provides both classroom and hands-on instruction in methods of teaching, classroom and laboratory management, curriculum and assessment. Courses are provided in a block over a few days during the summer and on a couple of other Saturdays during the school year.

Source: Rex J., V. Evans Harrison, J. Couch (2008), South Carolina Five-year Plan, July 1, 2008-June 30, 2013 for the Carl D. Perkins Career and Technical Education Act of 2006, South Carolina Department of Education; DIRECT website: *www.scdirect.org/*

Flexible provision of pedagogical training

The qualifications required to practise as a teacher/trainer vary among OECD countries, with requirements in many countries (*e.g.* Korea) being higher for vocational teachers than for trainers. A pedagogical course is an

important part of vocational trainers' preparation. While such courses help prepare trainers for their work, too onerous requirements may discourage people in mid-career from becoming a vocational teacher or trainer. Allowing skilled workers to acquire their pedagogical competences in a flexible way (*e.g.* distance learning, recognition of prior learning) helps to encourage skilled workers to practise as vocational teachers/trainers. In Ireland, for example, trainers working in the National Training and Employment Authority (FÁS) may obtain the required pedagogical qualification by attending one- or two-day workshops.

General teachers, for example those teaching physics to electricians in VET institutions, are in a somewhat different position. While workplace experience may be less relevant to them than to their colleagues responsible for practical skills, there remain issues about both the content of what is taught – so that it is most useful in the workplace – and how it is taught – so that its relevance is clear to the student. In Switzerland, teachers of these general subjects in VET institutions are required to take an additional course to ensure that the subjects are made relevant to the needs of VET students. For those who have a school teacher's certificate at upper secondary level this involves 300 learning hours.[1] The institution which commonly provides these courses also serves as a centre of expertise on the training of VET teachers and trainers, and in the professional training of VET administrators (see Box 4.2).

Box 4.2 The Swiss Federal Institute for Vocational Education and Training

The Swiss Federal Institute for Vocational Education and Training (SFIVET) is the national competence centre for teaching and research in vocational/professional education and training. It provides training to those who want to teach in vocational schools and professional colleges. In addition, it also offers continuing education and training courses, which help existing teachers and trainers to upgrade their skills and support VET schools in developing their management. Finally, it conducts evaluations and research, which inform policy making in VET.

Source: Federal Office for Professional Education and Technology (2008), "Vocational and Professional Education and Training in Switzerland". National report from Switzerland contributing to the OECD's review of "Learning for Jobs" Federal Office for Professional Education and Technology, Bern.

Data collection on vocational teachers and trainers

For any VET system, diagnosing a recruitment challenge requires good data. This means collecting data on the age of the workforce, and retirement and recruitment rates, so that simple extrapolations of the trainer labour force can be estimated. Better data would allow policy makers not only to diagnose the scale of any problem, but also to predict its evolution over time (given projected retention and recruitment rates), and to evaluate different potential solutions – for example, making it possible to compare the impact and cost of salary increases with other incentive mechanisms.

But in many countries data on the VET teacher and trainer workforce are weak. In Australia, for example, a country which is generally very strong on VET data, there is no single source of workforce information, and state and territory data only cover the most basic variables such as age and sex on a consistent basis. Data are typically held by individual providers and vary considerably in quality (NCVER, 2004; Harris *et al.*, 2001). Longitudinal data, at least on a sample basis, would help to illuminate the factors influencing key career decisions. Such data exist, for example, in the United States and have been used to identify key factors affecting the teacher and trainer workforce.

Preparation for the trainers in industry

The value of wider pedagogical skills

While VET institutions often want to improve their trainers' familiarity with the workplace, the concern in industry is more often to equip the supervisors of apprentices and trainees with the necessary pedagogical skills. Supervisors play a key role: they pass on practical skills, but also transmit theoretical knowledge, help apprentices and trainees get used to the social codes of the workplace, and more broadly, are responsible for the management of apprentices and trainees (Gérard *et al.*, 1998).

The capacity to convey a practical skill involves more than the ability to exercise it. Teaching requires special competences. A study from Australia found that apprentices highly valued the social skills of supervisors such as communication skills and the capacity to deal with conflicts, but that many supervisors felt they lacked the skills to respond to these expectations (Harris, Simons and Bone, 2000). A study from the United Kingdom (Evans, Dovaston and Holland, 1990) found that supervisors without specific training tend to focus on occupation-specific skills and neglect broader social competences. Kirpal and Tutschner (2008) in a study of

trainers in Europe found that trainers often perceive supervising as an additional task on the margin of their main job and that companies that do not distinguish trainer responsibilities from other tasks tend to provide fewer opportunities for their staff to develop specific supervising skills.

Evidence from various countries suggests that when apprentice supervisors receive specific training, they do a better job of developing the skills of apprentices. In Australia, workplace trainers found specific training courses helpful in developing supervising competences (Harris, Simons and Bone, 2000). In Germany, the suspension of compulsory training for workplace trainers seems to have had a negative impact on the quality of apprenticeships. This requirement was suspended for five years, as firms complained that it was a barrier to them offering apprenticeships, and it has only recently been re-introduced. The first evaluations of the suspension show that in companies without qualified training staff, apprentice dropout rates were higher and companies complained more about the performance of their apprentices. The social partners associated the suspension with a deterioration in the image and quality of VET. Both training and non-training companies considered formal requirements for workplace trainers as a guarantee of minimum standards (BIBB, 2008). Training for workplace trainers may also have spill-over benefits, since the competences acquired by trainers tend to be shared within the company. This is particularly important, since regular colleagues also contribute to the learning experience of apprentices by answering questions, showing apprentices how to perform tasks, or providing informal feedback (Robertson *et al.*, 2000).

Ensuring minimum standards of trainer preparation

In most OECD countries relevant work experience is necessary to become a trainer, but trainers are less often expected to have pedagogical training or develop management competences. Some of these latter requirements can be found in countries with strong apprenticeship systems *e.g.* Austria, Germany, and Switzerland (Kirpal and Tutschner, 2008). Box 4.3 gives two examples of trainer preparation.

Box 4.3 Preparation of vocational trainers in companies

In **Belgium-Flanders**, employers who take apprentices receive 12 hours of training, called "Estafette". The programme focuses on issues such as welcoming apprentices, giving instructions and feedback, and conflict management. This training is compulsory for all new employers and supervisors, and for existing employers and supervisors who seek a relaxation of some element of regulation or have faced problems with apprentices.

Source: Flemish Ministry of Education and Training (2009), "Responses to the National Questionnaire", Learning for Jobs: The OECD Policy Review of Vocational Education and Training, unpublished.

In **Switzerland,** firms need to meet quality standards supervised by the canton in order to take apprentices. Apprentice supervisors must complete a 100-hour training course, which includes pedagogy, legal issues, knowledge of the VET system, and potential problems with young people such as drugs or alcohol. As part of the quality assurance process, cantonal inspectors interview apprentices and employees in the company to monitor the quality of training. In case of a problem, the canton provides some "coaching" to the company. The companies recognise the benefits of this approach, as well-trained apprentices will have a stronger productive contribution.

Source: Hoeckel, Field and Grubb (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Switzerland*, OECD, Paris. Available at: *www.oecd.org/dataoecd/12/5/42578681.pdf*

The scale of pedagogical and other preparation should be linked to the level of responsibilities of the personnel involved in supervising students, recognising that work experience can range from a few hours work-shadowing to a full apprenticeship. But the training of VET instructors and trainers should be a priority in the systems where students in vocational programmes develop a substantial part of their skills in the workplace. Some training of apprentice supervisors should therefore be obligatory.

While obligatory training for the supervisors of trainees and apprentices implies additional costs for firms, it should also provide benefits to companies. Better supervision should increase the productive contribution of trainees and apprentices during the training period, improve learning outcomes and create a better pool of potential recruits for the company. In France, many small firms participate in the training of trainee supervisors: 52% of trained trainers worked in companies employing less than ten people (Gérard *et al.*, 1998). To avoid excessive burdens on companies, minimum requirements need to be defined in a way that balances the need for quality

in workplace training with the need to encourage employers to offer placements.

Ways of funding the training for trainers differ across countries. For example, in Austria big companies cover either all or part of the costs. In Germany, the cost of courses preparing for the exam for trainers is mainly covered by the participants, whose training qualifications lead to better career prospects and a higher salary (Gérard *et al.*, 1998).

Strengthening the links between VET institutions and industry

Collaboration and exchange between VET institutions and industry can help to enhance the VET workforce. They can be used to improve and maintain familiarity with the workplace among trainers in VET institutions. Exchanges can also develop the pedagogical skills of workplace trainers, which in turn might help to create in companies a pool of people trained in teaching techniques who might at some point work as trainers in VET institutions. This would promote flexible career pathways between industry and the trainer profession in VET institutions, help to solve the recruitment challenge, and address the challenge of in-service training provision.

In some countries trainers in VET institutions work temporarily in companies to update their vocational competences (Cort, Härkönen and Volmari, 2004, see also Box 4.4). In China, teachers in vocational schools are required to spend one month a year in industry (Kuczera and Field, 2010). In Australia links between VET colleges (TAFEs) and companies have fostered mutual understanding and exchange of knowledge (Harris, Simons and Moore, 2005). Often the quality of such partnerships depends heavily on personal relationships and while such relationships are important, they need to be systematically supported.

Box 4.4 Teacher-worker pairing: co-operation between VET institutions and industry in Finland

The *Telkkä* programme in Finland was based on close co-operation between teachers and workplace trainers. It aimed to improve the ability of VET to respond to the needs of working life.

The programme included a two-month on-the-job period for vocational teachers, during which teacher-worker pairs were formed. This offered an opportunity for teachers to update their professional skills and for workers who also work as workplace trainers to improve their pedagogical skills. The training period was preceded by a seminar and planning (to clarify goals and expectations) and followed by feedback from teachers and workers and dissemination to the broader community.

Teachers reported a wide range of benefits, such as increased familiarity with recent work practices and requirements and the equipment used, easy access to firms for study visits, the contacts necessary to invite people from industry to give lectures at their VET institution, increased confidence, respect from students and motivation. The training period also allowed teachers and workers to discuss issues related to workplace training for students and improve training plans and assessment methods. Participants improved their skills and self esteem, and disseminated knowledge to other colleagues. This exercise was evaluated by the Economic Information Office in Finland as one of the best ways of developing teachers' professionalism.

Source: Cort, P., A. Härkönen and K. Volmari (2004), *PROFF – Professionalisation of VET Teachers for the Future*, CEDEFOP, Tessaloniki.

Effective teachers and trainers: conclusion

Arguments and evidence

- Many countries are facing a shortage of teachers and trainers in vocational programmes as the current workforce approaches retirement age. Some of the trainers also have insufficient recent workplace experience.
- Some trainers responsible for the supervision of interns, apprentices and trainees in companies have insufficient preparation, including pedagogical preparation.
- Research evidence shows that trainers who have both pedagogical skills and workplace experience are more effective.

- Data on the teacher and training workforce are often inadequate, making it difficult to identify and plan for a future recruitment challenge.

Teachers and trainers: OECD recommendations

- Deliver sufficient recruitment of teachers and trainers for VET institutions, and ensure this workforce is well-acquainted with the needs of a modern economy. To this end:
  - Encourage part-time working, with trainers in VET institutions spending some of their time in industry.
  - Promote flexible pathways for recruitment. Facilitate the entry of those with practical skills into the workforce of VET institutions through effective preparation.
- Provide appropriate pedagogical and other preparation for trainers (including the supervisors) of interns, trainees and apprentices in workplaces, adapting the level of preparation to the nature of the workplace learning being provided.
- Encourage interchange and partnership between VET institutions and industry, so that vocational teachers and trainers spend time in industry to update their knowledge, and vocational trainers in firms spend time in VET institutions to enhance their pedagogical skills.

Notes

1. Other requirements apply to vocational college teachers of professional studies in Switzerland.

References

BIBB (2008), *Germany National ReferNet Report on Progress in the Policy Priority Areas for Vocational Education and Training*, ReferNet, Bonn.

Cort, P., A. Härkönen and K. Volmari (2004), *PROFF – Professionalisation of VET Teachers for the Future*, CEDEFOP, Tessaloniki.

Dalton, J. and P. Smith (2004), "Vocational Education and Training in Secondary Schools: Challenging Teachers' Work and Identity", *Journal of Vocational Education and Training*, Vol. 56, No. 4, Taylor & Francis Group.

Evans, K., V. Dovaston and D. Holland (1990), The Changing Role of the In-Company Trainer: An Analysis of British Trainers in the European Community Context, *Comparative Education*,Vol. 26, No. 1, pp. 45-59.

Federal Office for Professional Education and Technology (2008), "Vocational and Professional Education and Training in Switzerland". National report from Switzerland contributing to the OECD's review of "Learning for Jobs" Federal Office for Professional Education and Technology, Bern.

Flemish Ministry of Education and Training (2009), "Responses to the National Questionnaire", Learning for Jobs: The OECD Policy Review of Vocational Education and Training, unpublished.

Gérard, F., *et al*. (1998), Profils professionnels, formation et pratiques des tuteurs en entreprise en Allemagne, Autriche, Espagne et France, Centre INFFO, Paris.

Harris, R., M. Simons and J. Bone (2000), *More than Meets the Eye? Rethinking the Role of Workplace Trainer*, NCVER, Brisbane.

Harris, R. M., *et al*. (2001), *The Changing Role of Staff Development for Teachers and Trainers in Vocational Education and Training*, NCVER, Adelaide.

Harris, R., M. Simons and J. Moore (2005), *A Huge Learning Curve: TAFE Practitioners' Ways of Working with Private Enterprises*, NCVER, Adelaide.

Hoeckel, K., S. Field and W.N. Grubb (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Switzerland*, OECD, Paris. Available at: *www.oecd.org/dataoecd/12/5/42578681.pdf*

Kirpal, S. and R. Tutschner (2008), *Eurotrainer: Making Lifelong Learning Possible: A Study of the Situation and Qualification of Trainers in Europe: Final Report*, European Commission, Directorate General for Education and Culture, Brussels.

Kuczera, M., and S. Field (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Options for China*, OECD, Paris. Available at: *www.oecd.org/dataoecd/36/36/45486493.pdf.*

Lynch, R. (1998), "Occupational Experience as the Basis for Alternative Teacher Certification in Vocational Education", *Quality of Vocational Education: Background Papers from the 1994 National Assessment of Vocational Education*, pp. 43-64.

NCVER (2004), *Profiling the National Vocational Education and Training Workforce*, NCVER, Adelaide.

Pereira, A., *et al.* (2007), "Moving in the Right Direction? Labour Mobility, Labour Shortage and Canada's Human Potential", *Action Canada*, June 2007.

Rex J., V. Evans Harrison, J. Couch (2008), South Carolina Five-year Plan, July 1, 2008-June 30, 2013 for the Carl D. Perkins Career and Technical Education Act of 2006, South Carolina Department of Education DIRECT website: *www.scdirect.org*.

Robertson, I., *et al.* (2000), "Evaluating On- and Off-Job Approaches to Learning and Assessment in Apprenticeships and Traineeships", *Post Compulsory Education and Training Conference*, Gold Coast.

Skolverket (2007), "Lärare i förskola, skola och vuxenutbildning: 2007 års prognos over behovet av och tillgång på lärare perioden 2007-2021", Skolverket, Stockholm.

Spark, C. (1999), *Vocational Education and Training in Senior Secondary Schools*, Vocational Education and Assessment Center, Canberra.

Chapter 5

Workplace learning

Workplace learning assumes diverse forms, ranging from short periods of job-shadowing for school students to full apprenticeships. This chapter argues that the workplace has compelling attractions as a learning environment, a good place both to learn hard skills on modern equipment and soft skills by working with people in a real-world context; improving transition from school to work by allowing employers and potential employees to get to know one another; and allowing trainees to contribute useful work. The employer offer of workplace training also provides an important signal of employer need for that variety of skill.

But workplace learning also requires the commitment both of students and employers. This means adequate incentives for employers to offer training places, balanced by effective means of ensuring quality in the training they provide. Countries use many types of financial incentives to encourage workplace training, including direct subsidies, special tax breaks and arrangements to share the burden of training between groups of enterprises.

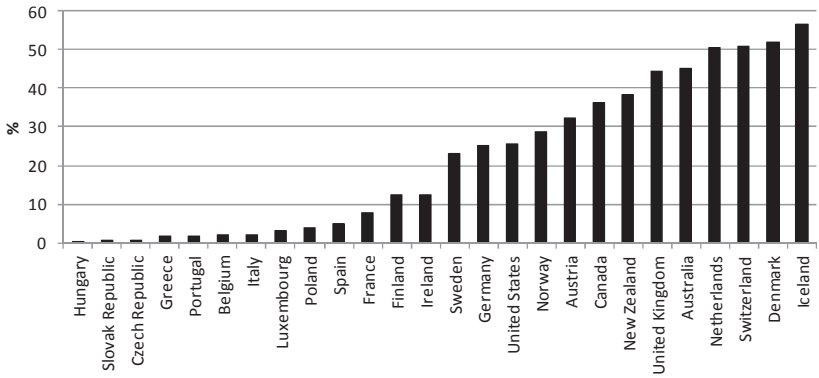
Workplace learning includes a diverse set of practices ranging from brief periods allowing the learner to observe a workplace to structured long-term apprenticeships leading to a qualification:

- Job shadowing: Very short periods of time – typically days – in which students "shadow" a worker to learn about their job. It often involves younger students and serves the purpose of career exploration.
- Service learning: Voluntary work by students, typically in non-profit organisations, designed to provide a service and at the same time to provide a learning opportunity to students. In Belgium-Flanders, for example, some students in part-time VET participate in such learning.
- Internships: Short periods of time – typically weeks or months – in which students attend workplaces and undertake work there, typically for zero or nominal wages. They may be governed by a special contract. Students in school-based upper secondary VET may participate in internships in various OECD countries, for example in Austria, Belgium-Flanders, Chile, Hungary and Mexico (although typically not all VET students participate).
- Apprenticeships: More structured long-term workplace learning, typically over a period of years, leading to a qualification (see Glossary).

Other forms of workplace learning include:

- Employee training: Training of regular employees in the workplace.
- Informal learning through part-time work. In some countries, for example the United States, many students in upper secondary and tertiary education have some kind of part-time job. Figure 5.1 shows how as a result of this pattern, a rather similar proportion of 15-19 year olds have some kind of paid work in Germany and the United States – although in Germany most of these will be apprentices. Although the students may be working primarily for economic reasons, there are likely to be some spin-off learning benefits, in terms of understanding of the workplace and work relationships.

Figure 5.1 Students aged 15-19 who work part- or full-time (including apprentices)



Source: OECD (2009), *Jobs for Youth*. *United States*, OECD, Paris.

Apprenticeships are one of the oldest established institutions in education and training. While they involve some form of blended on- and off-the-job training, the design is highly variable, ranging from apprentices attending school one or two days a week (*e.g.* Austria, Belgium-Flanders, Germany, Switzerland), to a sequence of segments each some months long on and off the job (Ireland) to the Norwegian arrangement with two years of school followed by two years of workplace training. For many, but not all countries, apprenticeship represents a core element of initial VET[1]. Apprenticeships are found in the traditional trades as well as, increasingly, in technical areas such as laboratory and hospital technicians. In Switzerland, for example, a new "IT engineer" occupation was designated in the 1990s with an associated apprenticeship. Apprenticeships in these technical areas are called "modern apprenticeships" in some countries. Work placements typically form a large part of apprenticeship programmes of study (see Table 5.1).

Table 5.1 Time spent by VET students in work placements*

Estimated percentage of secondary VET students, by time spent in work placement (as ratio of the total programme length)

	% of programme length spent in work placement with employers			
	75% or more	Between 50% and 75%	Between 25% and 50%	Less than 25%
Australia[1]	■■	-	-	-
Austria	■■	-	-	■■■
Belgium (Fl) [1]	■	-	-	-
Czech Republic	-	-	-	■■■■
Denmark	-	■■■■	-	-
Finland	■	-	-	■■■■
France	■	-	-	■■■
Germany[2]	-	■■■	-	■
Netherlands	-	■■	■■■	-
Norway[2]	-	■■■■	-	-
Sweden[2]	-	-	-	■■■
Switzerland[1]	■	■■■■	-	-
United States	-	-	-	■■■■

Note: Estimated percentage of VET secondary programmes: - 0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%.

1. In Australia, Belgium (Flanders) and Switzerland the amount of workplace training depends on the institution and programme.

2. Some missing data, so not all programmes are represented.

* For definitions see Glossary.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

The advantages of workplace training

There are four major advantages, from both the student and employer point of view, of training in workplaces rather than in VET institutions. First, workplace training can offer a high-quality learning environment, allowing students to acquire practical skills on up-to-date equipment and under trainers familiar with the most recent working methods and technologies; it also allows them to develop key soft skills – such as dealing with customers – in a real-world environment. Second, it facilitates a two-way flow of information between potential employers and employees, making later recruitment much more effective and less costly. Third, employer provision of workplace training provides a signal that a VET programme is of labour market value. Fourth, trainees in the workplace can

make a productive contribution. All of these advantages apply to a structured and substantive element of workplace learning in a vocational programme – like apprenticeships – but most of them also apply, sometimes to a lesser extent, to other less formal and shorter forms of workplace learning. The four points are developed below.

Providing a strong learning environment

Workplaces provide a strong learning environment because they offer real on-the-job experience. This makes it easier to acquire both hard and soft skills. The acquisition of hard skills sometimes requires practical training on expensive equipment. Rapidly changing technologies mean that equipment quickly becomes obsolete and VET institutions are often unable to afford modern equipment. Workplace training will therefore often be more cost-effective, since it makes use of equipment already available in firms. Firms also employ the people who understand how to use the latest equipment and can explain the associated techniques.

As argued in Chapter 2, there is good research evidence to show that many soft skills – like problem-solving, conflict management and entrepreneurship – are more effectively learnt in workplaces than in classrooms and simulated work environments. See Box 5.1 for one example of the advantages of workplace training.

Box 5.1 Workplace training in Korea

In Korea, companies often complain that young people are not ready for employment upon graduation (Grubb *et al.*, 2006; Jung *et al.*, 2004). According to a survey of 536 companies, new university graduates typically need over 20 months of training before they can do productive work (Park, 2007). Few students participate in workplace training during their programme and many end up paying for additional training from private training providers before they can find a job (Jung *et al*, 2004).

The Youth Job Experience programmes offer firm-based training to young students and young unemployed persons, with tertiary students accounting for 83% of participants. According to an evaluation, participants found a job more quickly after graduation and stayed longer in their first jobs than those who did not receive any work experience (OECD, 2007). However the programme reached relatively few students and participation has been decreasing (MEHRD and KEDI, 2005; OECD, 2007).

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 apprentices as potential recruits. Since other potential employers cannot readily observe these characteristics, an employer taking trainees is in a position to recruit the best from among them, and use their information advantage to pay salaries below the individual's productivity (Acemoglu and Pischke, 1998; 1999a). This is the *recruitment benefit* to employers of workplace training (see Glossary). Evidence from various countries suggests that this is one of the major motives for employers to offer workplace training (*e.g.* Clark, 2001; De Rick, 2008). The recruitment benefit to employers depends on a number of labour market characteristics and regulations (see Acemoglu and Pischke, 1999b):

- Where labour turnover is high, so that apprentices only stay briefly following recruitment, the recruitment benefit is reduced.
- Where wages are very flexible and job security is limited, it is possible for employers to take on recruits at low wages and then, once employee performance becomes clearer, to reward the most productive and to lay off weaker ones. This means that it is not vital to establish productivity in advance of recruitment, and the recruitment benefit of work placements is less.
- Conversely, where wages are inflexible, perhaps determined through collective bargaining, and where there is a high level of job security, a new recruit represents an expensive long-term commitment, carrying a substantial risk. Identification of the most productive workers in advance of formal recruitment is therefore more advantageous and the recruitment benefit is greater.
- Where they exist, national service requirements create a gap in time between initial workplace training and subsequent entry to the labour market, and may make it less likely that training companies can hold on to their apprentices as recruits.

In workplaces students can learn about the day-to-day reality of an occupation (*e.g.* the type of tasks involved, working conditions) 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. As discussed in Chapter 3, workplace learning can thus be an important part of career guidance, especially when students participate in a number of different placements before making choices about their education and training. Short

periods of workplace learning, including those for younger students, typically service this purpose. Subsequently, when students participate in placements within vocational programmes, the placements can help students to make choices about specific types of work and employers.

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 Box 5.2, and 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. In Switzerland, in two-thirds of cases examined in one study, the productive contributions of apprentices were more than or at least equal to the costs of training. Wolter and Schweri (2002) also showed that the one-third of firms which did not derive a net benefit at the end of the apprenticeship period nevertheless benefited in most cases because of the recruitment benefit – they were able to keep the VET graduates they had trained. In Germany, the productive contribution is much less (Beicht, Walden and Herget, 2004) because German apprentices spend less time doing productive work at the host company than Swiss apprentices (Dionisius *et al.*, 2008). Such a productive contribution is only occasionally possible from VET students in other contexts – usually those most closely resembling real workplaces – for example in the many catering colleges which operate as restaurants for members of the public.

Ensuring VET provision matches labour market needs

As argued in Chapter 2, 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 apprenticeships in contexts where they have labour shortages – both because apprentices contribute to production and because they may be future recruits (*i. e.* both the production and the recruitment benefits will be high). Unlike school-based VET, apprenticeships are therefore automatically linked to labour market needs. The "market" in apprenticeship places becomes a domain where student career objectives have to be balanced with employer interest – a dress rehearsal for the real labour market. As argued in Chapter 2, even where short work placements are all that is involved, as in some

vocational programmes – for example in Sweden – the placements can serve to signal the skills needs of employers.

Balancing workplace and other training locations

Despite all the advantages of workplace training, it needs to be supplemented by the use of other training locations, for a number of reasons:

- Vocational theory (see Glossary) like a butcher's knowledge of anatomy is often best learned away from the workplace in a classroom setting.
- Some practical skills can be more effectively learnt off the job.
  - Where equipment is expensive or dangerous, simulated work environments may be more cost-effective. For example, training train drivers in simulated cabs is more cost-effective than on-the-job training with real trains (and associated line closures).
  - Off-the-job training can operate at a slower pace and provide students with time to initiate their skills (Robertson et al., 2000).
  - Economies of scale may mean that it is best to teach some basic practical skills collectively in training workshops (whether in a public VET institution, or in a training centre funded by a group of companies) rather than in the workplace.
- Local employers may not always be able to provide all the required training. Variations between firms – even within the same sector – in terms of products, markets, clients and technology mean that learning opportunities are not the same for all VET students in workplaces. Off-the-job training can fill potential gaps in the skills provided.

Ensuring quality in workplace learning

Quality standards

As argued in Chapter 4, good quality workplace learning requires well-prepared workplace trainers. Apprenticeships and other formal types of workplace training make particularly strong demands on the training provided on the job. Such training needs to provide a good range of vocational skills – including both hard and soft workplace skills – and offer an effective route into the relevant job. More specifically:

- Off-the-job VET should complement work-based training. The relationship between apprentices, employers and VET institutions is a key factor determining the success of training: they should have a common understanding of the training, as well as clearly defined roles and responsibilities (Schofield, 1999).
- Apprentices and trainees should perform a variety of tasks, either within a firm or by rotating across firms (Gruber, Mandl and Oberholzner, 2008). Tasks should increase in complexity over time and allow trainees to work autonomously and practice their skills (Robertson *et al*., 2000).

Firms are always interested in the immediate productive contributions of apprentices and trainees, but sometimes less concerned with providing for a good learning experience (Cornford and Gunn, 1998; Kilpatrick, Hamilton and Falk, 2001; Gibb, 1999). The question arises whether the productive contribution of apprentices is at the expense of training quality. Research from Norway (Askilden and Øivind, 2005) and the Netherlands (Smits, 2006) indicates that firms training with an eye on the production benefit tend to use trainees as a cheaper substitute for unskilled workers. Smits (2006) found that the quality of training is better in firms training with an eye on the recruitment benefit.

Evidence from Switzerland provides a counter-example. Dionisius *et al.* (2008) indicate that, despite the difference in terms of productive contribution, the relative performance of Swiss and German apprentices seems to be identical at the end of training. Swiss firms manage to pay off the costs of training during the training period by allocating students to productive tasks and using apprentices in skilled jobs to a greater extent than German firms. This shows that using apprentices productively does not necessarily imply using them as cheap unskilled labour. The authors further argue that the main reasons for the higher cost-efficiency of training in Switzerland include high training costs, a less regulated labour market and higher labour force mobility than in Germany, and regulations setting up minimum requirements for the quality of training. High apprentice costs mean that there is no real incentive to substitute apprentices for unskilled labour and that they must instead seek returns by placing them in skilled jobs. The existence of regulations setting out the content of workplace training (Smits, 2006) and quality standards (Dionisius *et al*., 2008) are identified as essential to ensure high-quality learning.

Even where firms have an interest in providing good training, their preference may be for firm- and occupation-specific skills, while students also need skills that are transferable to other firms and possibly other occupations (Smits, 2006). There is also variation in the quality of training

according to the characteristics of firms. Research from Australia suggests that small firms are unlikely to have dedicated training staff (Hawke, 1998) and the training offered tends to be unplanned (Vallence, 1997), informal and firm-specific (Seagraves and Osborne, 1997). While workplace training needs to yield benefits to employers to encourage them to offer sufficient training places, it should not be so firm-specific that it inhibits future professional mobility.

These considerations argue for careful quality control in apprenticeships and traineeships to ensure that the employers involved deliver on their training responsibilities. Learning objectives should be developed with the involvement of employers to ensure relevance to their immediate needs, but balanced by sufficient emphasis on transferable skills to allow for future mobility. In other forms of workplace learning, too, quality requirements are important so that both students and employers reap the desired benefits.

Quality standards are a set of rules defining the terms of workplace training. They may cover the content and duration of training, the assessment of training outcomes and trainers' qualifications. Quality standards should help to avoid the allocation of students to unskilled tasks and to prevent training being narrowly focused on firm-specific skills. Quality standards should ensure that training meets minimum standards in all workplaces. In a review of apprenticeships in several European countries, Ryan (2000) suggests that in the UK the lack of external regulations for apprenticeships leaves room for low-quality training, whereas in Germany and Denmark there is stronger quality control and permission for training is withdrawn from companies that provide sub-standard training. Similarly, in Switzerland firms need to meet quality standards to be licensed to take on apprentices and the quality of training is monitored.

Table 5.2 Quality assurance in enterprises providing practical training*

	Curric-ulum	Training content	Programme duration	Physical resources	Number of training places	Qualific-ations acquired	Educational performance	Labour market performance
Australia	no	yes	no	no	no	no	no	no
Austria	yes	yes	yes	yes	yes	yes	yes	no
Belgium (Fl)	no	yes	no	no	yes	no	no	no
Czech Republic	no	No	no	no	no	no	no	no
Denmark	no	No	no	no	no	yes	no	no
Finland	no	No	no	yes	no	no	yes	yes
France	no	No	no	no	no	no	no	no
Germany	yes	yes	no	no	no	yes	yes	no
Hungary	**	**	**	**	**	**	**	no
Netherlands	no	yes	no	no	no	yes	no	no
Norway	m	m	m	m	m	m	m	m
Sweden	***	***	***	***	***	***	***	***
Switzerland	yes	yes	yes	yes	yes	yes	yes	no
United States	no	No	no	no	no	no	no	no

Note: m: missing.

* For definitions see Glossary.

** In Hungary, the Chamber of Commerce and Industry operates the quality assurance system covering the conditions needed to start workplace training, including interim checking to ensure that the training is done under prescribed circumstances, and that its content and methodology is appropriate.

*** In Sweden, the Swedish Schools Inspectorate has a mandate to examine the quality of workplace training, and local education/governing boards are responsible for workplace training.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Table 5.2 provides information on quality assurance practices in selected OECD countries. Given the need to encourage and support workplace training, quality control may need to take the form of supportive measures for employers, rather than a bureaucratic obstacle to firms wishing to undertake workplace training. The *QualiCarte* project in Switzerland (Box 5.2) provides an example of a tool that supports employers in improving their training.

Box 5.2 Quality control of workplace training in Switzerland

Host companies are responsible for checking the progress of students. Developed with the social partners, the *QualiCarte* provides a checklist of 28 quality criteria describing key aspects of workplace training (including the engagement of the company, particular aspects of the initial phase of the training and the subsequent training process). These criteria are used by companies for self-assessment.

Cantonal authorities control the quality of workplace training by issuing licences, which host companies must obtain in order to provide workplace training to VET students. To acquire a licence, companies must meet technical and personal criteria, and demonstrate that their training programme complies with quality standards and the content of training matches the needs of the occupation.

Source: Federal Office for Professional Education and Technology (2008), Vocational and Professional Education and Training in Switzerland. National report from Switzerland contributing to the OECD's review of "Learning for Jobs" Federal Office for Professional Education and Technology, Bern.

Legal framework

A study of five European countries (Germany, Austria, Denmark, Ireland and the United Kingdom in Ryan, 2000) identified the existence of a strong institutional framework, including a legal framework for apprenticeships, as an important condition for the successful implementation of apprenticeship training. An apprenticeship or traineeship contract, setting out the rights and obligations of both trainees and receiving firms, can be a useful tool to underpin the quality of workplace training. In Mexico, employers reported to the OECD review team that the lack of legal arrangements (in particular concerning the insurance of trainees) is a barrier to the expansion of workplace training in VET. The creation of a contract for trainees, setting out legal arrangements, would solve this problem: it would avoid the need for individual employers to make their own arrangement for a contract, and it would cover trainees against unforeseen risks. By setting out the rights and obligations of both trainees and receiving firms, such contracts could also be a tool to control the quality of workplace training. In the light of these arguments, the OECD review of Mexico recommended the establishment of a trainee contract (Kis, Hoeckel and Santiago, 2009).

Special contracts for apprentices or trainees exist in many countries. Table 5.3 sets out some of the contractual characteristics of different

workplace training schemes. In some countries (*e.g.* Germany, Austria and Switzerland) students are responsible for finding a company that will provide them with workplace training. Conversely, in Hungary, VET institutions often help students find apprenticeship places and the contract is then typically signed between the firm and the apprentice. Some countries (*e.g.* Australia and Norway) involve third partners in the apprenticeship. Box 5.3 provides examples of the terms of apprenticeship contracts in three countries.

Table 5.3 Contracts for workplace training

Estimated percentage of VET upper secondary programmes in workplace training by contract characteristics

	Basis of contractual status			Contractual parties			Characteristics of the contract		
	Mandatory	Non mandatory	Varies	Employer	Trainee	VET institution	Employment	Training	Combining training and employment
Australia	■■	■■■		■■■■	■■■■	■■	-	-	■■
Austria	■■■■	■		■■■■	■■■■	■■■	■■	■■■■	■
Belgium (Fl)	■■		■■■	■■■	■■■	■■■	■	■■	-
Denmark	■■■■	-		■■■■	■■■■	■■■■	-	-	■■■■
Finland	■	■■■■		■■■■	■	■■■■	-	■■■■	■
France	■■	-		■■	■■	-	-	-	■■
Germany	■■■	-		■■■	■■■		-	■■■	-
Hungary	-	■■		■■	■■	■■	-	-	■■
Nether-lands	■■■■	-		■■■■	■■■■	■■■■		■■■■	■■■■
Norway[1]	■■■■	-		■■■■	■■■■	-	-	-	■■■■
Switzer-land	■■■■	-		■■■■	■■■■	-	-	-	■■■■

Note: Estimated percentage of VET secondary programmes: - 0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%.

1. Local government is also part of the contract.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Box 5.3 Contracts for workplace training

In **Australia,** the Apprenticeship/Traineeship Training Contract is concluded between the employer and apprentice. A representative of the Australian Apprenticeships Centre advises both parties on their rights and responsibilities and ensures that the apprenticeship is appropriate to both parties. The contract outlines the employer's obligation to employ and train the apprentice, pay wages and ensure that the apprentice receives adequate facilities and supervision. Employers must submit a training plan, endorsed by the concerned training provider (VET institution). The contract stipulates a probation period, during which either party can terminate the agreement.

Source: Department of Education, Employment and Workplace Relations (DEEWR) (2010), training.com.au website, *www.training.com.au/portal/site/public/menuitem.7e75abb80a4e4690f9fa5a1017a62dbc/* , accessed June 2010.

In **Belgium-Flanders**, an apprenticeship contract is signed between the employer, the apprentice and for apprentices under 18, their parent or guardian. It must be concluded through an "apprenticeship counsellor" to be recognised. Apprentices receive an apprentice allowance from their employer (the amount depends on age and year of training).

Source: Flemish Ministry of Education and Training (2009) "Background report", Learning for Jobs: The OECD Policy Review of Vocational Education and Training, unpublished.

In **Austria**, a training contract is between the employer, the student and their legal guardian. The apprentice receives health, accident, pension and unemployment insurance. The training relationship is regulated by the labour and social law, as well as particular employee protection regulations for young people. Apprentices are entitled to a salary determined through collective negotiation, which varies among occupations.

Source: Austrian Federal Ministry for Education, Arts and Culture (2010) Austrian Federal Ministry for Education, Arts and Culture website, *www.bmukk.gv.at/schulen/bw/bbs/berufsschulen.xml#toc3-id4,* accessed June 2010.

Continuous vs. sequential training: need to allow for flexibility

Classic dual apprenticeship training involves one or two days of schooling in the VET institution and three or four days of training and working in the company throughout the two to four years of apprenticeship training. However, some occupations require substantial theoretical and

practical training before an apprentice is able to do meaningful work. Many different models have therefore emerged, with apprentices spending months, or even up to two years, in a VET institution or in specialised training centres before working in a company. Some other factors include:

- The extent to which prior learning is needed affects the cost-benefit ratio to firms. When prior theoretical knowledge has to be acquired over a long period before the apprentice is able to do meaningful work, the government may organise prior training in VET institutions at public expense.
- The most effective systems offer firms the flexibility to choose the system best adapted to their needs. Flexibility regarding the duration of the apprenticeship training is important for both employers and apprentices: it helps to ensure that apprentices reach their training objectives and that the costs and benefits of the training to employers will be in balance.

Incentives for employers and trainees

The costs and benefits of workplace training to employers

The incentives on employers to provide workplace training places depend on the benefits and costs they expect from training. As discussed, employers gain both a production and a recruitment benefit from apprenticeships and other more structured and longer-term forms of workplace training. In addition, employers sometimes say that taking on trainees is a social responsibility, and, more subtly, that trainees and apprentices ask questions, encouraging a reflective approach to the work. In several OECD countries governments offer additional incentives for employers to take apprentices (see Table 5.4).

The costs of apprenticeships to employers are of two main types:

- Apprentice wages vary markedly. For example in Australia the 2006 weekly rate for apprentices in their first year ranged from 47% to 75% of the minimum wage depending on the industrial sector; by the fourth year all apprentices receive the federal minimum wage, or more (Australian Fair Pay Commission, 2006). In Norway, apprentices receive a wage negotiated in collective agreements that ranges from 30% to 80% of the wage of a qualified worker, the percentage increasing over the apprenticeship period (Kuczera *et al.*, 2008).

- The resource costs of training apprentices include the time of experienced employees, remunerations of training staff, teaching materials and administrative costs mistakes by inexperienced apprentices and wasted resources (Richardson, 2005; Rauner, 2007). These costs are dependent on the quality of apprenticeship training provided, covering issues like whether special training is provided to supervisors, whether apprentice supervisors have some additional status and wages to reflect their role, and so on.

Both benefits and costs are hard to estimate, although firms are getting better at doing so. In Switzerland half of firms with apprentices either have formal mechanisms to monitor the cost/benefit ratio of their training, or were about to introduce such mechanisms in 2004[2]. But many firms lack such mechanisms and rely instead on more subjective perceptions of the utility of training (Davidson *et al.*, 1997; Schweri *et al.*, 2003). Systematic studies have been undertaken in Germany and Switzerland (see Box 5.4) into the costs and benefits to employers of taking apprentices. Such studies can themselves be used as a means of encouraging employers to take trainees and apprentices, by demonstrating to them the real economic returns.

Box 5.4 The costs and benefits of apprenticeships in Switzerland

In 2000 and 2004, around 2500 companies took part in a survey to determine the costs and benefits of apprenticeship training. Another survey took place in 2009. The gross costs of apprenticeship training include the wages of apprentices and in-company trainers, the cost of related administrative tasks, installation and material costs, and some other costs. The benefits to companies results from the productive output of apprentices. This is calculated based on the cost of employing someone else to generate the same output.

By comparing gross costs and benefits, we obtain the company's net loss or net benefit. In 2004, Swiss companies invested CHF 4.7 billion in apprenticeship training, while the productive output of apprentices was CHF 5.2 billion. Overall, apprenticeship training was therefore a good investment, with about two-thirds of the companies obtaining a net benefit. Among those who suffered a net loss, most companies could compensate for it in the short or medium term by hiring the apprenticeship graduates that they had trained in the company, thus reaping a recruitment benefit.

Government-provided incentives for employers

Financial measures

There are important spillover benefits from many forms of VET, including workplace training, since there are benefits not only to the training employer and student, but also to other employers and society at large. Governments use varying mixes of direct subsidies, tax breaks, levy arrangements and in-kind arrangements to support[3] initial vocational education and training (see Table 5.4).

Table 5.4 How governments and employers support workplace training

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

* See Glossary for definitions.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

A flat-rate subsidy to employers per workplace training place offered has two potential weaknesses. First, many of the places attracting the subsidy would be offered even without the subsidy. So the net effect of the subsidy on the overall training effort may be modest. Second, subsidising firms may reduce other types of training that are less generously subsidised.[4] Evidence suggests that the effectiveness of a subsidy, as an incentive for a firm to train, is mixed. Westergaard-Nielsen and Rasmussen (1999) argue that in Denmark, although the effects of a subsidy on the willingness to provide an apprenticeship place is modest (demand for apprentices would have been only 7% smaller in the absence of a subsidy), it may still

represent good value for money, given the expensive alternative option of having pupils in vocational schools. But as the subsidy had an impact only in certain industries, it is argued that limiting the subsidy to these would have increased efficiency. In Switzerland, a simulation exercise suggested that subsidies would have an impact on firms that are not involved in apprenticeships but would have no effect on the supply of apprenticeship training in firms that train already (Mühlemann *et al.*, 2007). In Austria, subsidies had limited impact (Wacker, 2007).

Some countries (*e.g.* Denmark, France, Hungary, Ireland) employ training levies to boost the amount of training offered by companies and to promote a more equitable distribution of training opportunities – typically using them to support the training of existing employees, but also sometimes of trainees and apprentices. Evidence on their effectiveness is rather mixed[5]. Research suggests that *universal* training levies are ineffective in ensuring an equitable distribution of training opportunities – in practice large firms and highly skilled employees tend to benefit disproportionately from the levy (Gasskov, 1998; Edwards, 1997; Goux and Maurin, 1997; Lee, 2006). While *sectoral levies* can support strategic, sectoral objectives and may be more attractive to firms than universal levies (Smith and Billett, 2005), evidence on their effectiveness in increasing overall training effort and promoting equitable access to training is also mixed (Van den Berg, Meijers and Sprengers, 2006; Smith and Billett, 2005; CEDEFOP, 2008).

The design of apprenticeship systems is characterised by trade-offs between different factors, which need to be in balance for the system to be effective. The quality of training needs to be sufficiently high to deliver benefits for the student and the economy, but not so high as to become an obstacle to employer engagement. Apprentice wages have to be sufficient to attract good apprentices and inhibit dropout, but not so high as to become yet another obstacle to employer provision. The apprenticeship period and its relationship to apprentice wages – which typically rise as apprentice skills develop – also need to be balanced. The apprenticeship period needs to be short enough to inhibit dropout into jobs by near-fully-trained apprentices, but not so short that the employer loses the productivity benefit of apprentices, which are largely obtained towards the end of the apprenticeship period, through the contributions of the trained apprentices.

For employers, the net benefits of workplace training must yield sufficient incentive to encourage the provision of training places, but this can be achieved in different ways. For example this might involve (as in Switzerland) relatively low apprentice wages, balanced by strong requirements on training companies in terms of the preparation of apprentice supervisors and adherence to the national curriculum. In Switzerland this mix is deployed to support an apprenticeship system without recourse to

subsidy. In Ireland, the government pays apprentices a stipend during their off-the-job training phases, making apprenticeship an attractive option in principle to both students and employers (although this position has been substantially challenged by the downturn in the Irish construction industry, see Kis, 2010). Table 5.5 compares the public cost of apprenticeship programme completion per student in countries for which data are available.

Table 5.5 Estimated public expenditure on apprenticeship

In USD at purchasing power parity for GDP (reference year in brackets)

	1	2	3	4
	Average total cost of the programme, per participant	Cost of one year off-the-job apprenticeship, based on full-time equivalents	Programme duration (in years)	On-the-job training (% of the programme)
Austria (2006)	15 300 – 15 900	n.a.	2-4 (depending on the programme)	80%
Denmark (2008)	19 400 – 29 000	12 100	3.5-4 (typical duration)	40 – 60%
Ireland (2008)	19 000	16 300 (phase 4 and 6)	4 (typical duration)	70%
Netherlands (2006)	7 100-14 100	7 800	2-4 (depending on the programme)	60%
Norway (2006)	36 200	12 900	4	50%
Switzerland (2007)	11 600-23 600	14 300	2-4 (depending on the programme)	70%

Source: Kuczera, M. (2008), Replies to parliamentary questions by FÁS (Ireland): Ref No: 13031/09, 13027/09, 13030/09, DETE personal communication.

Note: These costs include the cost of off-the-job education and training, provided in VET institutions[6]. In countries such as Denmark and Switzerland this will represent the main public cost. In other countries, as in Norway and Austria, government also grants a subsidy to employers providing training to students and this cost is included in the figures. In Switzerland and the Netherlands training companies can benefit from a tax deduction, but the cost of these indirect financial incentives is excluded from the figures, as they are difficult to estimate; total costs for Switzerland and the Netherlands may therefore be underestimated. In Ireland, public expenditure covers education and training in VET institutions (instructor salaries, premises, equipment) and the allowances paid to apprentices.

Non-financial measures

In some countries there are special bodies that aim to facilitate apprenticeships by matching employers with students looking for workplace training. They also take care of the administrative duties involved in apprenticeship training (this is particularly important for SMEs). They may also employ apprentices and hire them out to host employers (see Box 5.5).

Box 5.5 External bodies involved in apprenticeship training

Australia: Group training organisations (GTOs) are not-for-profit organisations supported by public authorities, with some charges to host employers. GTOs employ apprentices and hire them out to host employers, sometimes focusing on a particular industry or region. Their tasks include selecting apprentices adapted to the needs of employers; arranging and monitoring training both on- and-off-the job; taking care of administrative duties; and ensuring that apprentices receive a broad range of training experience – sometimes by rotating them to different firms.

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

Norway: Training offices (TO) *(opplæringskontor)* are owned by companies and usually relate to specific trades. They aim to identify possible new training companies and establish new apprenticeship places, to supervise companies with apprentices, and to train staff involved in the tutoring of apprentices. Many TOs 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", unpublished.

Switzerland: Vocational training associations (*Lehrbetriebsverbünde*) are groups of firms that share apprentices, thus reducing the financial and administrative burden on each firm. Firms that do not have the capacity to take on an apprentice on their own can therefore provide apprenticeships. In each association one firm takes formal responsibility for the apprentices. Switzerland subsidises these associations during the first three years, contributing to the initial costs of establishing a joint training programme. An evaluation (OPET, 2008) found this model effective, as without it the majority of the participating firms would not have engaged in apprenticeship training.

Sustaining incentives for employers during an economic downturn

Economic pressures can limit the active participation of employers, and they can be more reluctant to offer workplace training during economic

downturns. Economically depressed regions may face a similar problem. In a depressed region one might encourage young people to seek workplace training in a different part of the country in a sector with good job prospects. This must be balanced against the potential challenges to younger people of living away from home, sometimes with weak adult supervision. In the interests of regional equity, it may sometimes be necessary to compensate for the lack of workplace training through additional provision in VET institutions.

In 2008, the global economy experienced a severe recession. In a recent review Brunello (2009) notes the limited evidence, but suggests that apprentice numbers tend to drop even faster during recessions than do the numbers in employment. In a weak economy with low demand the production benefit may be limited, and the expected recruitment benefit depends on the risky assumption that the employer will weather the downturn and expand again. Taking on an apprentice represents a future commitment, often over several years. Apprentice contracts vary, but may be tightly binding on an employer, partly to ensure that employers are committed to the longer-term development of their apprentices. Employers may be very reluctant to take on such a potential risk given an uncertain economic climate.

In Australia, during the early 1990s recession, apprentice numbers fell a quarter in three years (*www.ncver.edu.au/research/proj2/mk0008/growth.htm*). But the relative vulnerability of apprentices and ordinary employees to a recession will depend on local circumstances. One analysis of the impact of the 1930s depression on engineering apprentices in England argued that during this period apprentices were used to substitute for full employees (Hart, 2005).

Potential policy responses to the current economic crisis, designed to cushion apprenticeships and other forms of workplace training, include:

- Temporary subsidies for apprentice starts: One objection is that most of the apprentice starts would happen without the subsidy. Another is that this might become an incentive for employers to use apprentices as cheap labour.
- Creation of more apprenticeship places in the public sector.
- Some means of sharing risks between different employers for taking on an apprentice. One option is to arrange for government sponsored bodies to take on apprentices and for employers to host the apprentices, as in the group training organisations in Australia.

- More practical training in VET institutions to compensate for the loss of workplace training.
- More time spent in general education, with occupation-specific training shifted to later stages in the education and training systems.

Brunello (2009) argues for policies that encourage training on and off the job during recessions – given the risk that young people may otherwise find themselves trapped in temporary jobs with few training opportunities. Drawing on Bassanini and Brunello (2008), he argues that "training policies are not necessarily the only and perhaps not the best tool available to support training in a prolonged downturn: structural policies that favour product market competition and labour market policies that reduce the dualism between protected insiders and unprotected outsiders may deliver better payoffs than subsidies to workers and employers, which are plagued by the presence of deadweight and substitution effects".

Incentives for potential apprentices

A strong apprenticeship system needs to be attractive to potential apprentices as well as employers. Apprentices normally receive a wage, as noted above, and they may also get some type of government grant for subsidy. In return they should receive good-quality training and the reasonable prospect of a smooth entry into the target occupation. From the apprentice point of view, the appeal of this form of training is relative, depending on what else is on offer. Typically this will depend on the relative attractions of an academic track in tertiary education, or alternatively of direct entry into the labour market.

In Germany, economic activity was higher among apprentice graduates (who have received workplace training) than among university graduates and graduates from school-based VET (who typically lack workplace experience) although the duration of unemployment was longer for apprentice graduates than for other groups (Winkelmann, 1996). In Austria, Hofer and Lietz (2004) found that apprentice graduates (upper secondary level) have less unemployment and higher earnings than unskilled workers, although their labour market performance is weaker than that of general upper secondary graduates.[7]

Dropout is one indicator of weakness in apprenticeship systems, although it may also reflect the attractiveness of alternative career options. Dropout rates are technically difficult to calculate, mainly because in most educational systems, a proportion of those who leave educational programmes re-enter a similar programme either immediately or within a relatively short period of time: this group may not be regarded as genuine

dropouts. This means that comparing dropout rates across countries is fraught with difficulty, but nonetheless there are some striking international differences. A recent study sought to identify comparable completion rates for a group of European countries. They note a completion rate of 31% for England[8], and of 50-60% in Scotland, and suggest, that on a comparable basis, the rate is around 75% in Germany, around 70% in Denmark, 65-70% in the Netherlands, and 75-80% in France. The study notes a range of statistical difficulties associated with this comparison (West, 2004). In practice non-completion may not be a significant problem. Among other studies on apprenticeship dropout, Bessey and Backes-Gellner (2007) show that in Germany about 20% of the apprentices prematurely terminate their apprenticeship contract, but in practice most of them either shift to another employer or education career track, leaving only a very small proportion of complete dropouts – less than 5% of those who start apprenticeships.

Workplace learning: conclusion

Arguments and evidence

- Workplace learning assumes diverse forms, including short periods of work-shadowing, longer internships, and more structured apprenticeships alongside informal learning and training for employees.
- In initial VET, good-quality workplace training and experience:
  - Provides a strong learning environment for both hard skills (including the use of up-to-date equipment and techniques) and soft skills (such as relating to colleagues and customers).
  - Improves transition from school to work by allowing employers and potential employees to get to know each other.
  - Contributes to output.
  - Links the provision of training to real labour market needs.
- Workplace training typically needs to be complemented by other education and training, since some skills are more effectively taught off-the-job, and workplace training may not always be available because of regional economic weaknesses or economic downturns.
- Workplace training, particularly more formal arrangements such as apprenticeships, requires careful attention to quality standards, and sufficient incentives for employers to offer training places.

Workplace learning: OECD recommendations

- Make substantial use of workplace training in initial VET.
- Ensure that the framework for workplace training encourages participation by both employers and students.
- Ensure that workplace training is of good quality, through an effective quality assurance system, and through the provision of a clear contractual framework for apprenticeships.
- Balance workplace training by other provision (*e.g.* training workshops in schools) where other learning environments work better, or if workplace training is not available.
- Devise effective responses to the current economic downturn, to sustain workplace training and to cope with increased demand for full-time VET.

Notes

1. See *www.ncver.edu.au/research/proj2/mk0008/internat.htm* for a now somewhat dated comparison of the number of apprentices in relation to the population of working age in selected countries.
2. Information provided by OPET Switzerland.
3. Such subsidies sometimes cover not only initial vocational education and training but also training of employees. On this last point, there is limited rigorous evidence to prove the existence of market failures in the provision of enterprise training (see Bassanini *et al.*, 2007).
4. In Norway the subsidy for providing apprenticeships for adults is lower than the subsidy for apprenticeship training for upper secondary students. This may reduce adult learners' chances of obtaining apprenticeships.
5. OECD (2004, Employment Outlook, Chapter 4) argues that a key principle of government financial-support schemes for training is that it should be geared at reducing the gap between marginal (direct and opportunity) costs and marginal benefits for all subsidy recipients, in order to minimise deadweight losses. The incentives for individuals or

employers to invest in training depend on the difference between marginal expected benefits and marginal training costs. Train-or-pay levy/grant schemes (such as those implemented in France) confront employers with a financially neutral choice between training (and not paying the tax), or not training (and paying the tax). Funds collected in this way are then distributed to firms in the form of additional grants. Strictly speaking, firms receive no automatic subsidy, since grants are not necessarily awarded. "Train-or-pay" levies, however, are equivalent to schemes where there is a tax of a given percentage of payroll independent of training expenditures, a 100% automatic subsidy of training expenditures up to that percentage of payroll, and an additional grant awarded through case-by-case analysis of training projects. For firms that would have spent up to the legal minimum anyway, "train or pay" levy/grant schemes do not increase incentives to invest in training. Conversely, by covering total costs up to a pre-determined ceiling, "train or pay" levy/grant schemes "overpay" the increase in training investment they induce on the part of firms that would have spent less than the legal minimum in the absence of the scheme, since marginal benefits of additional training are not zero for these firms. Indeed, it is possible to show that a more efficient result, generating the same training with lower government spending (or more training with the same expenditure), can be obtained through the introduction of an additional payroll tax and tax deductions at a rate smaller than 100% (OECD, Employment Outlook, Chapter 5, 2003).

6. In some countries, there might be a fee for the school-based component that is paid by the apprentice or is covered by an employer.

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

8. Completion rates in England have risen substantially in recent years, from 38% in 2004/05 to 64% in 2007/08 (Data Service, 2008).

References

Acemoglu, D. and J. Pischke (1998), "Why do Firms Train? Theory and Evidence", *Quarterly Journal of Economics*, Vol. 113, No. 1, pp. 79-118.

Acemoglu, D., and J. Pischke (1999a), "The Structure of Wages and Investment in General Training", *Journal of Political Economy*, Vol. 107, No. 3, pp. 539-572.

Acemoglu, D. and J. Pischke (1999b), "Beyond Becker: Training in Imperfect Labour Markets", *The Economic Journal*, Vol. 109, No. 453, pp. 112-142.

Askilden, J. E. and N.A. Øivind (2005), "Apprentices and Young Workers: A Study of the Norwegian Youth Labour Market", *Scottish Journal of Political Economy*, Vol. 52, No. 1, pp. 1-17.

Australian Fair Pay Commission (2006), "Minimum Wage Decision October 2006", *www.fairpay.gov.au/fairpay/WageSettingDecisions/General/2006/FactSheets/2006MinimumWageDecision.htm*

Austrian Federal Ministry for Education, Arts and Culture (2010) Austrian Federal Ministry for Education, Arts and Culture website, www.bmukk.gv.at/schulen/bw/bbs/berufsschulen.xml#toc3-id4, accessed June 2010.

Bassanini, A., Booth, A., Brunello, G., and M. De Paola, *Workplace training in Europe*, in Brunello, G., Garibaldi and Wasmer (eds.) (2007), Education and Training in Europe, Oxford: OUP.

Bassanini, A., and G. Brunello (2008), "Is Training More Frequent When Wage Compression is Higher? Evidence from the European Community Household Panel", *Labour Economics*, Vol. 15, No. 2, pp. 272-290.

Beicht, U., G. Walden and H. Herget (2004), *Kosten und Nutzen der betrieblichen Berufsausbildung in Deutschland*, Bertelsmann, Bielefeld.

Bessey, D. and U. Backes-Gellner (2007), "Premature Apprenticeship Terminations: An Economic Analysis", Working Paper No.2 Institute for Strategy and Business and Economics and Swiss Leading House Economic of Education. Firm Behavior and Training Policies, Zürich.

Brunello, G. (2009), *The Effect of Economic Downturns on Apprenticeships and Initial Workplace Training: a Review of the Evidence*, OECD, Paris. Available at: *www.oecd.org/dataoecd/51/41/43141035.pdf*

CEDEFOP (2008), *Social Partners and Sectoral Training Funds: Mobilising Resources*, Briefing Note, CEDEFOP, Thessaloniki.

Clark, D. (2001), "Why do German Firms Subsidize Apprenticeship Training? Test of Asymmetric Information and Mobility Cost Explanations" *Vierteljahreshefte fur Wirtschaftsforschung*, No. 70, pp. 102-106.

Cornford, I. and D. Gunn (1998), "Work-based Learning of Commercial Cookery Apprentices in the New South Wales Hospitalities Industry", *Journal of Vocational Education and Training*,Vol. 50, No. 4, pp. 549-568.

Data Service (2008*), Statistical First Release DS/SFR1 v2 22 December 2008*, the Data Service, London.

Davidson, J. *et al*. (1997), *Return on Training Investment*, Office of Technical and Further Education–ANTA, Canberra.

Department of Education, Employment and Workplace Relations (DEEWR) (2010), training.com.au website, *www.training.com.au/portal/site/public/menuitem.7e75abb80a4e4690f9fa5a1017a62dbc/* , accessed June 2010.

De Rick, K. (2008), "Costs and Benefits of Apprenticeships in the Lowest Track of VET", International Network on Innovative Apprenticeship, Vienna, 1-2 February 2008.

Dionisius, R., *et al. (*2008), "Cost and Benefit of Apprenticeship Training – A Comparison of Germany and Switzerland", Discussion Paper, No. 3465, IZA, Bonn.

Edwards, C. (1997), State Failure or Market Failure? The Ten Steps to a Levy-Grant System of Vocational Training, in Godfrey, M. (ed). (1997) *Skill Development for International Competitiveness*, Edward Elgar, Cheltenham.

Federal Office for Professional Education and Technology (2008), *Vocational and Professional Education and Training in Switzerland.* National report from Switzerland contributing to the OECD's review of

"Learning for Jobs" Federal Office for Professional Education and Technology, Bern.

Flemish Ministry of Education and Training (2009), "Background report", Learning for Jobs: The OECD Policy Review of Vocational Education and Training, unpublished.

Gasskov, V. (1998), "Levies, Leave and Collective Agreements Incentives for Enterprises and Individuals to Invest in Training", *Vocational Training*, No. 13, pp. 27-34.

Gibb, J. (1999), "The Quality of Learning", *Australian Training Review*, No. 32 (Oct/Nov/Dec), pp. 32-33.

Goux, D., and E. Maurin (1997), *Train or Pay: Does It Reduce Inequalities to Encourage Firms to Train their Workers?*, INSEE, Paris.

Grubb, N., *et al.* (2006), *Thematic Review of Tertiary Education, Country Note*, OECD, Paris. Available at: *www.oecd.org/dataoecd/37/21/38092630.pdf.*

Gruber, E., I. Mandl and T. Oberholzner (2008), *Learning at the Workplace*, CEDEFOP, Tessaloniki.

Hart, R. (2005), "General Human Capital and Employment Adjustment in the Great Depression: Apprentices and Journeymen in UK Engineering", *Oxford Economic Papers*, No. 57, pp. 169-189.

Hawke, G. (1998), "Learning, Workplaces and Public Policy" in J. McIntyre and M. Barrett (eds.), *VET Research:Influencing Policy and Practice*, proceedings of the First National Conference of the Australian Vocational Education and Training Research Association, Sydney.

Hofer, H. and C. Lietz (2004), "Labour Market Effects of Apprenticeship Training in Austria", *International Journal of Manpower*, Vol. 25, No. 1, Emerald.

Jung, T.H. *et al.* (2004), *Effective Measures for School-to-work Transition in the Vocational Education System. Lessons from Australia and Korea*, NCVER, Adelaide.

Kilpatrick, S., V. Hamilton and I. Falk (2001), *Issues of Quality Learning: Apprenticeship in Rural and Remote Australia*, CRLRA, Sydney.

Kis, V., K. Hoeckel and P. Santiago (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Mexico*, OECD, Paris. Available at: *www.oecd.org/dataoecd/28/37/43277304.pdf*

Kis, V., (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Ireland*, OECD, Paris. Available at *www.oecd.org/dataoecd/2/6/44592419.pdf*

Kuczera, M., *et al.* (2008), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Norway*, OECD, Paris. Available at: *www.oecd.org/dataoecd/45/34/41506628.pdf*

Kuczera, M. (2008), Replies to parliamentary questions by FÁS (Ireland): Ref No: 13031/09, 13027/09, 13030/09, DETE personal communication.

Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Lee, K. W. (2006), "Effectiveness of Government's Occupational Skills Development Strategies for Small- and Medium-scale Enterprises: A Case Study of Korea", *International Journal of Educational Development*, Vol. 26.

Ministry of Education & Human Resources Development (MEHRD) and Korean Educational Development Institute (KEDI) (2005), "Brief Statistics on Korean Education, 2005", *Statistical Materials 2005-4*.

Mühlemann, S., *et al.* (2007), "An Empirical Analysis of the Decision to Train Apprentices", *Labour: Review of Labour Economics and Industrial Relations*, Vol 21, No. 3, pp. 419-441.

NCVER (The National Centre for Vocational Education Research) (n.d)," Table 2: An International Comparison of Apprenticeship Coverage", *www.ncver.edu.au/research/proj2/mk0008/internat.htm*, accessed May 2010.

Norwegian Directorate for Education and Training (2008), "Responses to the National Questionnaire", unpublished.

OECD (2003), *Employment Outlook*, OECD, Paris

OECD (2004), *Employment Outlook*, OECD, Paris

OECD (2007), *Jobs for Youth: Korea*, OECD, Paris.

OPET (2008), *Resultate Evaluation Lehrbetriebsverbünde*, OPET, Bern.

OECD (2009), *Jobs for Youth. United States*, OECD, Paris

Park, I. (2007), "The Labour Market, Skill Formation and Training in the 'Postdevelopmental State': The Example of South Korea", *Journal of Education and Work*, Vol. 20, No. 5, pp. 417-435, Taylor and Francis.

Rauner, F. (2007), *Kosten, Nutzen und Qualität der beruflichen Ausbildung*, Bremen University, Bremen.

Richardson, S. (2005), New Estimates of Employers' Contributions to Training, in K. Ball, *Funding and Financing of Vocational Education and Training, Research readings,* NCVER, Adelaide.

Robertson, I., *et al*. (2000), *Evaluating On- and Off-Job Approaches to Learning and Assessment in Apprenticeships and Traineeships*, Post Compulsory Education and Training Conference, Gold Coast.

Ryan, P. (2000), "The Institutional Requirements of Apprenticeship: Evidence from Smaller EU Countries", *International Journal of Training and Development*, Vol. 4, No. 1, Blackwell.

Schofield, K. (1999), *Independent Investigation into the Quality of Training in Queensland's Traineeship System*, Department of Employment, Training and Industrial Relations, Queensland.

Schweri, J., *et al.* (2003), *Kosten und Nutzen der Lehrlingsausbildung aus der Sicht Schweizer Betriebe*, Beiträge zur Bildungsökonomie, Band 2, Rüegger Verlag, Chur and Zurich.

Seagraves, L. and M. Osborne (1997), "Participants in a Work-based Learning Programme: Small and Medium Enterprises and their Employees" in *Good Thinking: Good Practice – Research Perspectives on Learning and Work*, 5th Annual International Conference on Post-compulsory Education and Training, Griffith University, Brisbane.

Smith, A., and S. Billett (2005), Getting Employers to Spend More on Training: Lessons from Overseas. In K. Ball, *Funding and Financing of Vocational Education and Training*, NCVER, Adelaide.

Smits, W. (2006), "The Quality of Apprenticeship Training", *Education Economics*, Vol. 14, No. 3 pp. 329-344, Routledge.

Vallence, K. (1997), "Training One-to-one: Out of Sight, Out of Mind" in *Good Thinking: Good Practice – Research Perspectives on Learning and Work*, 5th Annual International Conference on Post-compulsory Education and Training, Griffith University, Brisbane.

Van den Berg, N., F. Meijers and M. Sprengers (2006), "More Vocational Education and Supplementary Training through Equalisation of Costs? An Analysis of a Training and Development Fund in the Netherlands", *Human Resource Development International* , Vol. 9, No. 1, pp. 5-24.

Wacker, K. (2007), *Teure neue Lehrstelle Eine Untersuchung zur Effizienz des Blum-Bonus*, NÖAK, Vienna. *(http://noe.arbeiterkammer.at/bilder/d57/lehrstellenmarkt_studie.pdf)*

West, J. (2004), *Improving Completion Rates in Apprenticeship: a Comparative and Numerical Approach* Apprenticeship Task Force,

London.
www.employersforapprentices.gov.uk/docs/.../Research_1_309.doc

Westergaard-Nielsen, N. and A. Rasmussen (1999), *The Impact of Subsidies on Apprenticeship Training*, Centre for Labour Market and Social Research, Aarhus.

Winkelmann, R. (1996), "Employment Prospects and Skill Acquisition of Apprenticeship – Trained Workers in Germany", *Industrial and Labour Relations Review*, Vol. 49, No. 4, pp. 658-672, JSTOR.

Wolter, S. and J. Schweri (2002), "The Cost and Benefit of Apprenticeship Training: The Swiss Case", *Applied Economics Quarterly*,Vol. 48, No. 3-4, pp. 13-25.

Chapter 6

Tools to support the system

VET systems do not exist in isolation; their effectiveness depends on their links to the labour market. This implies two types of supporting arrangements. First we need tools to engage the key stakeholders in VET – in particular so that employers can explain the skills that they need, and negotiate the provision of these skills with other stakeholders, and to ensure that the content of VET – what is taught in VET schools and in the workplace and how exams are designed – is relevant to the labour market. Second we need information tools so that the value of vocational programmes of study can be identified, recognised and analysed. These information tools include qualification frameworks, systems of assessment, and data and research. Better information might be provided either through leaver surveys, or through the development of longitudinal datasets, linking VET administrative records to later experience including employment experience. Better data need to be linked to the capacity to interpret and use those data in national institutions for VET research.

Mechanisms to involve the stakeholders

Institutional frameworks to involve the stakeholders

The engagement of employers and unions in VET is very variable across OECD countries in terms both of institutional arrangements and of the tasks and actions carried out by employers. It may involve an advisory role (of variable weight) or actual decision-making.

Bodies for engaging employers and unions can be established at national level, according to industrial sectors, or may be structured regionally or at the level of the individual institution (*e.g.* employer representation in school boards) (see Box 6.1 for country examples). While involvement at national level allows for broad advice on VET policy, employer engagement at local level can help to improve the links and partnerships between the workplace and individual VET institutions. Bodies organised by industrial sector are particularly helpful in developing the industry or occupation-specific curricula associated with particular qualifications.

Box 6.1 Examples of institutional frameworks for engaging employers and unions

National level:

The Danish Advisory Council for Initial Vocational Education and Training comprises 25 members from the social partners, alongside school leader and teacher associations and members appointed by the Ministry of Education. It advises the Ministry of Education on all matters concerning the VET system, monitors programmes and labour market trends, and recommends any changes in VET qualifications.

The **Swiss partnership arrangements** between the Confederation, cantons and the social partners are established by law. The Confederation is responsible for strategic planning and development; the cantons for implementation and supervision; and the social partners for definition of course content and provision of apprenticeships in companies. Major decisions are discussed and taken jointly and all three partners are represented at both national and cantonal level.

Box 6.1 Examples of institutional frameworks for engaging employers and unions (continued)

Sectoral level:

The **Australian Industry Skills Councils (ISCs)** are privately registered companies run by industry-based boards of directors, mainly funded by the Australian Government. 11 national ISCs cover the skills needs of most of Australian industry. Their tasks include advising the government, Skills Australia (an independent advisory body to the government), and companies on workforce development and skills needs; supporting the development of training and workforce development products and services; provision of training advice to enterprises; and working with different stakeholders to allocate training places.

In **Belgium-Flanders**, **sectoral agreements** are concluded between the government and individual economic sectors to establish a protocol of cooperation for two years. Topics covered include school-company collaboration and workplace training for apprentices, jobseekers and employees. These agreements also shape the priorities of labour market policy. Sectors also operate sectoral funds with contributions from companies and employees, supporting, for example the training of current and potential employees, competence development in companies and school-company collaboration.

The **UK Sector Skills Councils (SSCs)** are employer-led bodies that set training strategies for particular sectors of the economy. 25 licensed SSCs cover roughly 85% of the UK's workforce. SSCs are charged with determining the skills offer for their vocational area and have a lead role in determining the qualifications which deliver skills and are eligible for public funding.

Regional level:

Regional VET Centres in the Netherlands have representatives of (regional level) social partners in their supervisory board. 46 regional VET centres across the Netherlands supply all the vocational training schemes financed by the government at secondary level and provide adult education.

The role of employers

The involvement of employers is crucial if VET systems are to meet labour market needs. Employers are clearly in a strong position to see if the content of curricula and qualifications meet current labour market needs, and to guide their adaptation to emerging requirements. Employer engagement in policy development is essential if policy is to be successfully implemented. In Norway for instance, the establishment of apprenticeship

training required the full support of employers and trade unions. Involvement in the design of VET policy makes employers understand the system better. Employers who do not understand the policy context and the institutional settings are more likely to disengage. Recent developments in the UK illustrates this point (see Box 6.2).

Box 6.2 Employer engagement in the United Kingdom

In the past weak employer engagement has undermined many initiatives launched in VET (see Keep, 2005; Ryan, 2000; Soskice, 1993). A report on employers' views on improving skills (National Audit Office, 2005) stressed that some employers were confused by the range of information bodies and training initiatives. The *Learning for Jobs* review in England and Wales focused on the issue of employer engagement. It recommended consolidating employers' surveys, as well as simplifying and stabilising the institutions involved in VET to create a simpler employer interface (Hoeckel *et al*., 2009). The establishment of an employer-led advisory body, the UK Commission for Employment and Skills (UKCES), is an important step towards this. It was created in 2008, following the recommendation of a report assessing UK's skills needs (Leitch review), which also set skills targets. The UKCES assesses the UK's progress towards the skills targets set by the Leitch review. It is mainly composed of business leaders, but also includes trade union and local government representatives. The UKCES advises ministers on strategy, targets and policies, and monitors the VET system and overviews the Sector Skills Councils.

Institutions to engage employers with the VET system need to be representative of the diverse opinions found within employers' groups. *Ad hoc* consultative arrangements may give undue influence to a few random (often larger) companies. If employer organisations (rather than individual employers) are represented in government bodies, it is important that these organisations are genuinely representative and recognised as such by the great majority of individual employers. Some degree of stability in the institutional frameworks for employer engagement is also important. In some countries the role of employers and trade unions in VET design and delivery is even stipulated by law (*e.g.* Switzerland).

While employers have a proper and very important role in articulating the skills needs of the labour market, they also have some significant limitations. They will naturally have an interest in filling specific skills requirements, but may have less interest in equipping young people with more transferable skills, as such skills will bid up wages and increase job turnover. To some extent this depends on the level at which their interests are articulated. Employers as a whole have a very strong interest in general transferable skills, including literacy, numeracy and soft skills, while individual employers and sectoral groupings often have narrower interests.

The employer voice therefore needs to be balanced by an expression both of the students' and wider societal interests.

Balancing influences and the role of unions

As argued in Chapter 2, trade unions can usefully balance the influence of employers. Potentially they can voice the student and employee interest in transferable as well as firm-specific skills. As representatives of the workforce, they commonly take part in negotiations about the design of VET policy. In Norway for instance, the tripartite co-operation between the state, the employers and the unions gives legitimacy to the VET system and allows it to operate effectively. Trade unions have complex incentives in respect of training. They have incentives to protect the interests of existing workers, to ensure that those in work have access to good-quality training and that employees have transferable skills (DGB, 2008). Less positively they also have incentives to reduce access to shortage occupations, so as to maintain high wages and union bargaining power for the group of workers involved.

In the light of these different incentives on employers and unions, government plays an important role in supporting the interests of students and balancing the perspectives of employers and unions. In principle student interests might be represented directly – for example through a student's union – but in most contexts students are both young and unorganised, and government therefore needs to look after their interests.

Using qualifications frameworks to support VET systems

Many OECD countries have recently introduced qualifications frameworks (*e.g.* Hungary, Ireland, Spain, United Kingdom), or are in the process of introducing them (*e.g.* Belgium-Flanders). In Europe, the creation of a European Qualifications Framework has encouraged the development of national frameworks, consistent with the Europe-wide framework. Typically qualifications frameworks cover both vocational and academic qualifications, but they have a particular importance for VET systems given that they can place a very diverse set of vocational qualifications in a common framework (see Box 6.3).

Box 6.3 Qualifications frameworks and qualifications systems

A *qualifications framework* is a rank order of qualification levels, allowing each qualification to be assigned to a specific rank. It classifies qualifications according to a set of criteria for levels of learning achieved.

Qualifications systems include **all aspects** of a country's activity that result in the **recognition of learning,** and is therefore a much wider concept. Qualifications systems may be more or less integrated and coherent. An explicit qualification framework, when it exists, is a component of the qualifications system.

Source: OECD (2007), *Qualifications Systems, Bridges to Lifelong Learning*, OECD, Paris.

Potentially, the introduction of a qualifications framework may:

- Help to facilitate pathways of progression within the education system, by situating qualifications at different levels and clarifying how they relate to each other. Transparent progression pathways help to clarify the place of vocational qualifications and facilitate lifelong learning.
- Create, in the context of stakeholder engagement with the framework, a forum for co-operation between the different stakeholders involved in the VET system.
- Improve quality assurance mechanisms by challenging individual qualifications to demonstrate that they deserve a given rank in the framework.
- Give employers a clear view on the level of competences which should be associated with different qualifications.

Broad support for the introduction of qualification frameworks was advanced in the *Learning for Jobs* reviews of Mexico (Kis, Hoeckel and Santiago, 2009) and Chile (Kis and Field, 2009). Systematic evidence on national qualifications frameworks and their effects is scarce, but some common themes have emerged in the literature as set out below.

Types of qualifications frameworks

The design of qualifications frameworks involves a number of dimensions. Choices regarding each dimension depend on the national

context. Table 6.1 outlines some of these characteristics; for more details see Young (2005), Coles (2006) and Tuck (2007).

Table 6.1 Main dimensions in the design of qualifications frameworks

Dimension		Potential benefits
Tight vs. loose	Tight	More prescriptive about qualification design and quality assurance, they typically have a strong regulatory function, applying common rules across all qualifications. Examples: United Kingdom, New Zealand, South Africa.
	Loose	Provide a map of qualifications with a "communicative" purpose. They are less prescriptive and allow room for differences in approach. Examples: Australia, Scotland.
Inclusive vs. partial	Inclusive	Covering all qualifications, so can ensure coherence across all qualifications.
	Partial	Partial coverage, *e.g.* in terms of level, occupational sector. May be easier to implement, allow for piloting and staged development.
Central vs. stakeholder-led design	Designed by a central agency	May be used as a tool for wider reform and may be linked to other national policies.
	Developed by stakeholders	Ensures greater buy-in from stakeholders and can better respond to regional characteristics.

Source: Coles, M. (2006), *A Review of International and National Developments in the Use of Qualifications Frameworks,* European Training Foundation *www.etf.europa.eu/pubmgmt.nsf/(getAttachment)/4B4A9080175821D1C12571540054B4AF/$File/SCAO6NYL38; Tuck, R. (2007), An Introductory Guide to National Qualifications Frameworks: Conceptual and Practical Issues for Policy Makers,* International Labour Office, Geneva*;* Young, M. (2005), *National Qualifications Frameworks: Their Feasibility for Effective Implementation in Developing Countries, Skills* Working Papers No. 22, International Labour Office, Geneva. *http://ilo.law.cornell.edu/public/english/employment/skills/download/wp22young.pdf*

Making frameworks credible

Credibility requires a defensible methodology for locating individual programmes and courses within a qualifications framework – to demonstrate that one programme is indeed at level 3, for example, and is, by some objective test, superior to level 2. The methodology also needs to command the support of employers, preferably because it has been developed with their involvement, so that employers take the framework seriously.

In an ideal world this would be a competence-based methodology, driven by the outcomes of programmes. In practice objective measures of competence levels are difficult even within one field, and situating them in respect to competences in another field (*e.g.* between cooking and

journalism) is even harder. As a result, many qualifications frameworks are initially introduced with relatively weak tests of outcome comparability across fields. In practice, even in "competence-based" systems, a number of input measures are also used to situate one qualification in relation to another – such as the number of years of study, the age of students, and linkages to other parts of the education and training system (*e.g.* to situate 'upper secondary' VET programmes in the qualifications framework).

At the same time complete reliance on input measures (such as duration of programme) yields little assurance of meaningful complete qualifications. In Chile for example, a number of stakeholders argued during the review visit that defining tertiary degrees by the number of hours of instruction was inappropriate. Whether or not a framework is based on outcomes, strong quality assurance mechanisms are crucial to ensure the value of qualifications. Consultation in EU countries (in preparation for the creation of the European Qualifications Framework) showed that robust quality assurance mechanisms were considered critical to the development of a qualifications framework (Coles, 2006).

Linking the framework to quality assurance

Some qualifications frameworks are explicitly designed to operate as quality assurance mechanisms. In New Zealand, for a qualification to be admitted to the framework, it has to be based on centrally defined quality standards and subject to a series of quality assurance procedures, including the accreditation of providers. In Scotland, the framework is also related to the quality assurance system, although more loosely: the framework was established by consensus between major qualification bodies, and the criteria for each level in the framework influence the quality mechanisms required for awarding qualifications at that same level (Coles, 2006).

Co-operation across government and different stakeholders

A qualifications framework can improve articulation across different institutional sectors by locating qualifications delivered by different sectors within the same framework. But the articulation is not automatic. Close co-operation between the sectors of government is also necessary to ensure coherence, avoid duplication of effort and to create progression pathways within the system (see Box 6.4).

Box 6.4 Tackling parallel qualifications systems

In **Chile**, under the National Labour Skills Certification System (*Sistema Nacional de Certificación de Competencias Laborales*) launched in 2008, competence standards are now being developed. This system aims to provide a framework for the recognition of competences, regardless of how these were acquired. But currently the system covers only low-level skills and there are no links between this and the formal VET system. For example, the exit profiles for VET students defined by the Ministry of Education do not take into account the relevant competence profiles defined by the National Labour Skills Certification System. This system is under the responsibility of three ministries (Ministry of Labour and Social Affairs, Ministry of Economy and Ministry of Education). Articulating the Skills Certification System with the qualifications framework is essential, as skills certificates can then be located on the qualifications framework. Similarly, qualifications delivered by the school-based VET system need to build on the relevant competence profiles of the Skills Certification System (Kis and Field, 2009).

In **Korea**, students in vocational high schools, junior colleges and polytechnics receive "graduation degrees" delivered by the Ministry of Education, Science and Technology (MEST). In VET high schools the curriculum is developed by individual institutions following guidelines from MEST and the metropolitan and provincial offices of education. Guidelines for the general content of the programmes (*e.g.* courses in mathematics, Korean language) are relatively strict, while institutions have some room to adjust the vocational content of the curriculum (Han and Kim, 2002), Employers are not involved in the elaboration of these guidelines, although they may in practice negotiate the adjustment of VET content to their needs with individual institutions. A system of national technical qualifications (NTQs) was developed under the responsibility of the Ministry of Labour which, in co-ordination with 15 other ministries, is also responsible for the national technical standards that underpin the NTQs. The Human Resource Development Service of Korea develops standards and elaborates and conducts tests for the acquisition of qualifications (OECD, 2005b). The challenges created by the parallel system of degrees and licensing exams have been underlined by previous OECD reviews of Korea (on adult learning, see OECD, 2005b; on tertiary education, see Grubb *et al*., 2006; on vocational education and training, see Kuczera, Kis and Wurzburg, 2009).

Lessons on difficulties in implementation

The implementation of national qualifications frameworks is often associated with administrative difficulties, such as a proliferation of bodies dealing with quality assurance, standard setting and assessment. The lack of expertise among staff can lead to an excessive focus on bureaucratic

procedures rather than the quality of learning, undermining trust in the new qualifications and producing complaints about the slowness of the process (Young, 2005). There may also be tensions between public bodies, such as different ministries or agencies dealing with qualifications (Young, 2005). In New Zealand, for example, tensions between the qualifications authority and the Ministry of Education were the source of serious problems (Philips, 2003).

Regardless of the existence of a national qualifications framework, proliferation of qualifications remains a risk. Although qualifications should cover a wide range of occupations and competences demanded in the labour market, the number of qualifications should be limited, since otherwise the meaning of a qualification and its signalling value may be reduced. Some OECD countries have consequently reduced the number of qualifications (*e.g.* Hungary recently reduced the number of qualifications from about 800 to 400). The "optimal" number of qualifications varies with the national context.

Consultation and a gradualist approach

Consultation with employers over the elaboration and updating of qualifications is crucial to ensure that qualifications are recognised on the labour market. Partnership between different stakeholders is the key to success (Young, 2005; Raffe, Gallacher and Toman, 2007). Qualifications rely on trust, since they inevitably claim to represent more than they can demonstrate. As illustrated by the cases of Ireland, Scotland and New Zealand, effective consultation processes and principled compromises are essential (Young, 2005). Such a partnership approach is demanding in terms of co-ordination, and can slow down the pace of change, since each step requires the agreement of stakeholders (Raffe, Gallacher and Toman, 2007). Young (2005) warns that excessive involvement of stakeholders with political interests but lack of technical knowledge can undermine the role of specialists from relevant occupational sectors.

Support from different institutional sectors in the education and training system also facilitates effective implementation. Raffe, Gallacher and Toman (2007) argue that one of the factors behind the success of the Scottish framework is that it was supported by all the key stakeholders, while other country examples, such as New Zealand and South Africa, show that the disengagement of some institutional sectors can cause difficulties. The framework in Scotland was designed to reduce barriers between different parts of the education and training system (Coles, 2006). Conversely in Chile some universities are not keen to encourage lateral

access to their courses, with particular barriers between 2- and 4-year programmes (Kis and Field, 2009).

Experience from various countries shows that pragmatic and incremental change is more likely to succeed than a radical break with previous qualifications arrangements (Young, 2005; Raffe, Gallacher and Toman, 2007). For example, it may be easier to introduce national vocational qualifications in certain industrial sectors first and then gradually extend them. National vocational qualifications could be created in fields where occupational standards are widely agreed, and homogeneous across the country, and where it is in the interest of all stakeholders to create a national qualification. Finally, expectations need to be realistic about the capacity of the framework to achieve change, and the speed at which change may be achieved (Raffe, Gallacher and Toman, 2007).

Resource implications

The costs of implementing a national qualifications framework can be significant. They include policy analysis, assessment of international experience, development of options, creation of task groups, engagement of stakeholders, the establishment of a specific national body, and piloting. While the central administration costs of a qualifications framework may be modest, further costs can arise from associated processes, such as quality assurance procedures and the development of standards. At the same time, in a better co-ordinated qualifications system there are likely to be some cost savings, because there can be less duplication of effort.

Young (2005) argues that, when considered a separate policy initiative, as in New Zealand, South Africa and the United Kingdom, a national qualifications framework is always seen as taking resources away from other activities. Conversely, when regarded as a way of reforming the VET system, it gains a more strategic role. Young further argues that high-cost systems of certification are characteristic of low-trust systems of VET, while high-trust systems like Germany operate with lower costs. It follows that investment into institutional capacity building, and in improved training and professional development for teachers and trainers, is necessary to develop trust and limit the costs of the qualifications framework.

Developing common tools for the assessment of practical skills

Learning is the point of teaching. Assessment of what has been learnt therefore reveals much about both the learner and the quality of teaching. In general education, most OECD countries have regular tests and exams for

school students. These tests are used either formatively, to help students learn, or summatively, to provide an independent test of what they have learnt, and to assess the performance of parts of the education system (institutions, or regions). Such tests at national or international level have sometimes revealed unexpected problems and challenges. In VET, assessment frameworks for practical skills are often weakly defined. This is partly because pencil and paper tests are unsuitable to assess practical skills, and partly because in practice many vocational programmes – particularly apprenticeships – involve an element of "time served". This section looks at ways of strengthening assessment in VET.

The purpose of a *standardised national assessment framework* is to provide a consistent method to assess the learning outcomes of vocational programmes and thereby to ensure that all those with a qualification have the same mix of competences, at a similar level. This is particularly crucial in VET systems in which there is substantial variation among individual VET institutions and companies offering apprenticeships. Countries can adopt alternative approaches aiming to ensure consistent national standards. These might include periodic inspections of VET institutions, inspection of examination bodies, random evaluation of student performance, self-evaluation of providers and peer reviews. An extreme possibility would be a centrally established test undertaken by all students on the same day in similar conditions. More plausibly, there might be examinations developed locally but subject to clear national guidelines allowing for adjustment of a national assessment to local circumstances. The OECD reviews of Australia and Norway (Hoeckel *et al.*, 2008; Kuczera *et al.*, 2008) recommend the creation of frameworks of standardised national assessment in order to underpin quality and consistency in apprenticeship systems. Box 6.5 describes an assessment arrangement used in Saskatchewan, Canada.

Box 6.5 How apprentices are assessed in Saskatchewan (Canada)

All apprentices in any given trade carry out a common set of tasks during an exam, depending on their apprenticeship level. The competences are developed by the training organisation, with the agreement of the provincial trade board. In all areas the apprentices have written exams to test their knowledge of theory. In practical subjects apprentices have to demonstrate that they have acquired the skills at a given level. For example, apprentice cooks at level one should, among other things:

- Demonstrate how to prepare, bake, serve and store cookie doughs using the creaming method and make them up into dropped, bagged, rolled, moulded, ice-box and sheet cookies.
- Demonstrate how to prepare, bake, serve and store quick bread pour batter using the muffin method of mixing and make up into popovers.

The decision as to how much weight is assigned to a particular competence is made by a trainer but in line with the guidelines of the Cook National Occupational Analysis.

At the level of Canada as a whole, the National Occupational Analysis identifies and groups the tasks performed by skilled workers in particular occupations and in every province. It aims to assure transferability of skills and mobility of employers across the country *(see www.red-seal.ca).*

For more information see: *www.saskapprenticeship.ca*

Taking advantage of a standardised national assessment framework

A standardised national assessment framework may[1]:

- *Assure the quality of training*: Without national assessment, students may learn according to standards that are decided locally. As a result the level of work competences among qualified persons may vary according to local circumstances. The evidence confirms that such a risk exists, since minimum quality standards are more stable in countries with a national standardised assessment (Wößmann *et al*., 2007; Backes-Gellner and Veen, 2008). A scale of performance (*e.g.* with six scored levels of performance) could be an additional source of information on the quality of vocational programmes.
- *Improve the signalling value of the qualification*: Standardised national assessment ensures that the skills acquired during an

apprenticeship or other vocational programme with a strong employer focus are not too firm-specific, and include relevant transferable skills, making it easier for individuals to move between firms and geographic regions. Employers unable to observe the true capacities of job applicants often rely on signals such as educational attainment. Empirical evidence from Germany shows that a certificate based on performance in a national assessment is a better predictor of actual productivity than a diploma obtained in a local assessment (Büchel, Jürges and Schneider, 2003 cited in Backes-Gellner and Veen, 2008).

- *Be more cost-effective than local examinations*: Decentralised systems require different assessment procedures to be developed all round the country, duplicating effort.
- *Facilitate recognition of informal and non-formal learning*: The process of work experience recognition could be accelerated and rationalised as a person could go through a standardised assessment procedure and prove their ability to work in a trade at any time.
- *Promote flexibility and innovation in training*: Standardised national assessment would allow for greater flexibility in the length of vocational programmes, since the duration would depend on achieving the required level of competence as defined in the assessment procedure. Swiss research has revealed, unsurprisingly, that the time required to reach a given level of productivity varies, depending on the skills requirements of different occupations (Mühlemann *et al.*, 2007). Fuller reliance on competence rather than on duration would make it possible to adapt individual vocational programmes more flexibly to the needs of specific occupations and would give students an incentive to acquire the necessary competences swiftly rather than to "serve time" to obtain the qualification.

Balancing national assessment and local autonomy

In many types of public service, efficiencies are realised by balancing clear centralised definitions of objectives with local flexibility in the means of realising those objectives. Wößmann *et al.* (2007)[2] argue that while more responsibility over curricular content at local level is advantageous as it injects local knowledge into the learning process, local actors may favour their own interests at the expense of the students' outcomes. The study concludes that external assessment neutralises this negative effect by imposing control mechanisms on local players. Standardised national

assessment is thus an important complement of a decentralised system. In Canada, for example, the Interprovincial Standards Red Seal Program sets standards for trades and professions, unifies final assessments, provides comparable information on apprenticeship training programmes across Canadian provinces and territories, and encourages further harmonisation. The Red Seal diploma allows workers to practise their trade anywhere in Canada where that trade exists, without further examinations (see *www.red-seal.ca).* As a result, inter-provincial labour mobility has greatly increased, alleviating labour shortages in fast-growing provinces like Alberta (Pereira *et al.*, 2007).

Strengthening data on labour market outcomes

Why data are valuable

One of the defining characteristics of vocational education and training is that it aims to provide learners with useful occupational skills. But sometimes little is known about what happens to students once they complete their training, *i.e.* whether the learning leads to relevant jobs. Although obtaining such information is hard, as graduating students are mobile and hard to trace, labour market outcomes are a fundamental measure of the extent to which vocational programmes are meeting labour market needs. Such data help VET institutions to adjust provision to labour market needs, help public authorities to support the most relevant programmes and institutions, and as set out in Chapter 3, help students to choose vocational programmes, target occupations and VET institutions. In decentralised systems ensuring that good local practices are disseminated and widely implemented is a challenge. Establishing platforms to share experience, as in Texas (see Box 6.6) can be particularly useful.

Box 6.6 Best Practices Clearinghouse in Texas

The Best Practices Clearinghouse (BPC) was established by the Texas Education Agency in 2009 supports schools by providing a centralised location for schools to share evidence-based best practices. The BPC features "Best Practice Summaries" from districts and schools that are consistently high performing or that have demonstrated improvement in student performance. Programmes and practices focus on a range of issues (*e.g.* dropout prevention, college and career readiness) at various levels of education.

The BPC aims to provide practitioners with information that will allow them to adapt best practices for local implementation. Best Practice Summaries offer detailed information, such as training needs, cost components, relevant literature, lessons learned and contact information. As of 2009/10, newly added best practices are assigned to one of four BPC evidence types, describing the strength of evidence and the generalisability of results.

Source: Texas Education Agency (TEA) (2010), Best Practices Clearninghouse website, *www.teabpc.org, accessed June 2010.*

Improving data collection

Through a destinations survey

One way of finding out what happens to VET graduates is simply to ask them. A graduate destinations survey, administered to those leaving vocational programmes around one year after completion, establishes whether graduates are working and in what occupation, whether they are pursuing further study, and if they are unemployed or otherwise not in the labour market. This allows the success or failure of different vocational programmes and sometimes VET institutions to be assessed. A survey can also ask graduates about what they thought of their vocational programme – whether it was well taught and provided them with relevant skills for example. In this way such surveys also become a tool to monitor quality in vocational programmes. There is much international experience with leavers' surveys, typically in higher education (*e.g.* Australia and the United Kingdom) but also increasingly at secondary school level (*e.g.* Belgium-Flanders, Northern Ireland, the Netherlands, Scotland and Ireland) (see Box 6.7).

Box 6.7 Destinations surveys

In **Australia** the Student Outcomes Survey is conducted annually among students who completed some vocational training. Conducted by the National Centre for Vocational Education and Research since 1997, it is funded by the Australian government and provides information on the employment and further study outcomes, the relevance and benefits of training, and student satisfaction. The information collected supports the administration, planning and evaluation of the VET system.

In **Ireland**, the School Leavers Survey is based on a national sample of school leavers, contacted 12 to 18 months after leaving school. Face-to-face interviews, used in this survey since its beginning in 1980, have become more difficult as a result of declining response rates and high costs (McCoy, Kelly, and Watson, 2007). Therefore the 2007 School Leavers Survey used a mix of approaches. The selected individuals were asked to complete an online questionnaire and could also ask for a paper copy. Participants were offered an incentive to complete the questionnaire, with their names being entered in a draw for prizes. Those who were particularly difficult to reach (*e.g.* early school leavers) were followed up by telephone initially and then face-to-face (personal communication from the Irish Economic and Social Research Institute, 11 April 2008).

Through other surveys

Other types of survey also provide information (see Table 6.2). Censuses are a 100% sample and contain information on qualifications, or highest qualification, as well as other information on employment status. The value of censuses is limited by the fact that they are normally only conducted every ten years, so that the most recent trends and developments may not be reflected. Labour force surveys also contain qualification and employment data, but are a sample only. Some countries also run longitudinal or cohort studies of young people. These involve identifying a random sample of young people at a particular age and interviewing them at regular intervals, for example to follow through experiences between school and work. Such longitudinal studies are a powerful source of information on the broad tracks which people follow through educational systems and into the labour market, but sample sizes are commonly quite small, limiting their capacity to examine smaller vocational programmes.

Table 6.2 Types of survey allowing information on labour market outcomes to be collected

Estimated percentage of upper secondary vocational programmes where outcomes are recorded in surveys

	Regular labour force survey	Longitudinal survey	Leaver survey	Census
Australia	■■■■	-	■■■■	■■■■
Austria	■■■■	-	-	■■■■
Belgium (Fl)	■■■	■■■	■	-
Czech Republic	■■■■	■■■■	■■■■	-
Denmark	■■■■	■■■■	■■■■	-
Finland	■■■	-	■■■	■■■
France	-	-	■■■■	-
Germany	-	-	-	■■■
Hungary	-	■	■■	-
Netherlands	■■■■	*	■■■■	-
Norway	■■■■	■■■■	■■■■	-
Sweden	■■	-	■■■	-
Switzerland	■■■■	■■■■	-	■■■■
Turkey	■■■■	-	■■■■	-

Note: Estimated percentage of VET secondary programmes: - 0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%. In addition, some countries (as described below), notably the Nordic countries, employ national registers to track students into the labour market, bypassing the need for regular surveys.

* In the Netherlands, a cohort study is following a group of pupils – data on 16-plus in upper secondary education will be available in a few years.

Source: Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Through a national register

In some countries (notably the Nordic countries) a unique identifier code is attached to each person, and this identifier is in turn attached to a range of administrative data sets, including education, labour market and tax records. This makes it possible to track individual education and employment histories and thus to analyse the links between VET and later labour market experience. While such unified data sets raise privacy concerns, they can be a very efficient way of organising relevant data. For example:

- In **Sweden**, a central population register includes a unique personal identifier and some basic personal information (*e.g.* sex, age). This is linked to labour market information such as income and educational status. This allows individuals to be tracked through their school years and into the labour market. The use of these personal data is authorised by law and commands relatively wide

public support. If privacy issues arise, they are discussed publicly and the government addresses them (United Nations Economic Commission for Europe, 2007).

- A number of countries outside the Nordic region have plans to introduce similar systems. In **Switzerland**, from 2010, an individual student number will link data on education and working life, thereby meeting a number of data needs, ranging from precise nationwide data on dropouts or failures in examinations, to the possibility of tracing individual students' careers and trajectories between apprenticeships and tertiary education.

Better data cost money to collect, and once the data are collected, more also needs to be spent on analysing, interpreting and presenting the data. However, given the scale of public resources currently invested in VET in many OECD countries, resources devoted to making VET more efficient are likely to represent money well spent.

Through internationally comparable data

Internationally comparable indicators of VET are also extremely weak, with a number of problems afflicting the ISCED classifications of vocational programmes. The OECD is pursuing a new exercise to improve VET indicators, given strong support for work on this issue from member countries. The INES Network on Labour Market, Economic and Social Outcomes of Learning will in 2011-2012 establish a new data collection to collect information on VET and labour market outcomes. This work is a continuation of previous surveys and discussions to arrive at a common definition and methodology to collect data on VET. A pilot data collection is scheduled for early 2011.

Improving the evidence base

Good policy making requires a strong evidence base, to identify what is working well and what is going wrong, and to assess the effectiveness, costs and feasibility of different options. Establishing a strong evidence base is always hard, but one particular problem in the VET field is that there are so many different institutions involved. In many countries responsibility is shared between different ministries (typically the ministries of education and labour) and different bodies and agencies (for example, tripartite bodies, including government, trade unions and employer associations). A variety of other bodies are often involved in the collection and management of data relevant to VET, such as public research institutes, universities and

employers' groups. It is hard to ensure the efficient co-ordination of data collection, analysis and research among these different bodies.

To overcome these challenges, some countries have established national VET centres, with varying responsibilities, but often including the co-ordination of data collection, the analysis of data and research evidence and the provision of policy advice to government (see Annex A for various examples of such institutional settings). Such centres provide a number of potential benefits. Where there are already substantial existing data, co-ordinating research and analysis allows for better knowledge management. If there are substantial gaps in the evidence base, then these institutes offer more efficient ways to collect data. For example, conducting different employer surveys in the same country is likely to produce lower response rates than a single, co-ordinated large survey.

These advantages need to be set against the risk that the establishment of a single centre will create a body with no competitors and therefore few incentives to respond to the needs of policy makers and practitioners. To avoid this, strong accountability mechanisms are needed. A national VET research centre should not be a complete monopoly, because some competition will spur innovation and efficiency in the field. While some tasks are better carried out centrally, others require diversity and independence. Even for those activities requiring a single national focal point, some contestability may be ensured by franchising the responsibility to a body for a fixed period, potentially renewable, depending on performance – so preserving the option of transferring responsibility elsewhere. The body in question may also be virtual, decentralised amongst a group of universities for example, as in the Swiss "Leading Houses", and in the Centre for the Economics of Education in the UK (see Annex A).

The final objective of better data is to support evidence-based policy-making (see Box 6.8).

Box 6.8 Policy appraisal and evaluation

Policy appraisal is a systematic way of bringing evidence to bear on alternative policy options, and of weighing up costs and benefits, their distribution between different parties and over time, uncertainties and risks, as a way of assisting the development of policy (see HM Treasury, 2003; Layard and Glaister, 1994). The art of policy appraisal lies in making the most effective use of the evidence that is available, assessing areas of ignorance and uncertainty, and devising strategies for handling these uncertainties – for example, when a benefit is uncertain, by assessing its likely minimum and maximum value, or alternatively by launching an initiative as a carefully evaluated pilot so that the risks of a full roll-out can be reduced. These steps are considered below in summary form in the context of VET policy. Further details are available in Field (2008).

Identify and clarify policy objectives. Clear objectives need to be measurable. Outcome indicators might include employer satisfaction and profitability; increased use in work of the specific competences acquired in vocational programmes; or employment rates and earnings among VET graduates.

Identify a set of alternative methods of realising those objectives (including doing nothing). The policy options might include more workplace training or improved training for vocational teachers and trainers.

Systematically assess costs, benefits and risks of the options, including potential unintended effects. Costs and benefits of VET policy options are the subject of a separate literature review (Hoeckel, 2008). Benefits may include job-relevant competences (measured by ease of obtaining employment), quality of employment level (partly indicated by level of earnings), long-term employability (measured by employment rate after five to ten years), and acquisition of skills in learning how to learn (measured by labour participation in training).

Choose the most promising option or options, and determine feasibility and acceptability. Sometimes theoretically desirable initiatives are just not practicable – because of legal obstacles or opposition from powerful stakeholders, or because the initiative is not affordable. The choice of option needs to take account of these issues.

Develop an implementation and evaluation strategy. Appraisal sets the conceptual framework for subsequent evaluation but not the empirical methodology. For example, an appraisal may suggest that a proposed one-year vocational module at the end of upper secondary education may (based on experience of similar schemes in other countries) have positive effects on labour market outcomes, which could justify its substantial cost. Evaluation might involve introduction of the module in pilot areas, with random allocation of those completing upper secondary education into a control group and a group who would be offered the option of the one-year vocational module. Experience of the two groups would then be compared, looking at intermediate factors like the tendency for certain groups to take up the training, dropout rates, and labour market outcomes. This would then provide a strong basis for assessing the impact of a full roll-out.

Tools to support policy: conclusion

Arguments and evidence

- Countries have diverse arrangements for engaging employers and trade unions in VET policy and provision. In some countries lack of organisational frameworks for employer engagement is a problem.
- Qualifications frameworks have the potential to:
  - Unify the VET system.
  - Increase transparency, so that the value of different qualifications can be more clearly recognised by students, employers and other stakeholders.
  - Facilitate lifelong learning, and improve access to higher-level education for all.
- But qualifications frameworks are no panacea. They need to be underpinned by a strong methodology for allocating qualifications to levels, supported by key stakeholders, and backed by complementary measures to unify the VET system and to improve transitions in the educational system. Implementing a qualifications framework might therefore be best seen as part of a wider approach to ensuring quality and coherence in VET provision.
- A standardised assessment for VET qualifications:
  - Ensures consistency in the mix of competences acquired and in the level of competences necessary to pass the test.
  - Allows competences to be acquired in diverse ways, and encourages innovation and efficiency in the acquisition of skills.
  - Provides a clear basis for recognition of prior learning.
- Good data on the labour market outcomes of vocational programmes are crucial to evaluate whether programmes meet labour market needs, to inform student career choice, and to adjust provision in VET institutions and government funding priorities.
- Currently, the quality and comprehensiveness of such data vary across OECD countries. Better information might be provided through:

  - Systematic surveys of those who have recently left VET institutions.
  - Census and survey data relating labour market information to VET qualifications.
  - Sample longitudinal surveys, following a cohort of young people through VET and later transitions.
  - Full longitudinal datasets, linking VET administrative records to later experience, including employment experience through an individual reference number.
- Many countries have established research centres to support policy development on VET through better data, research and analysis.

Tools to support the VET system: OECD recommendations

- Engage employers and unions in VET policy and provision and construct effective mechanisms to that end.
- Systematically engage with employers, trade unions and other key stakeholders to develop and implement qualification frameworks. Strengthen quality assurance throughout the VET system to support qualifications frameworks.
- Adopt standardised national assessment frameworks to underpin quality and consistency in training provision.
- Strengthen data on the labour market outcomes of VET, and provide the institutional capacity to analyse and disseminate that data.

Notes

1. The studies referenced below were conducted in areas of general education. We assume that these findings could also apply to vocational education and training.
2. The analysis is based on PISA data measuring performance of 15-year-olds in areas of general education such as mathematics, science and reading. We assume that these findings could also apply to VET courses.

References

Backes-Gellener, U. and S. Veen (2008), "The Consequences of Central Examinations on Educational Quality Standards and Labour Market Outcomes", *Oxford Review of Education*, Vol. 34, No. 5, pp. 569-588.

Büchel, F., H. Jürges and K. Schneider (2003), Leistungs- und Signaleffekte zentraler Abschlussprüfungen – Eine TIMSS-Auswertung bei deutschen Haupt- und Realschülern. Beitrag für den Tagungsband der Zürcher Tagung des Bildungsökonomischen Ausschusses des VfS, Überarbeitete Fassung.

Coles, M. (2006), *A Review of International and National Developments in the Use of Qualifications Frameworks*, European Training Foundation *www.etf.europa.eu/pubmgmt.nsf/(getAttachment)/4B4A9080175821D1C12571540054B4AF/$File/SCAO6NYL38.*

DGB (2008), "*Mit guter Bildung in die Zukunft"– Gewerkschaftliche Anforderungen an den Bildungsgipfel*", Beschluss des DGB-Bundesvorstandes vom 7, Oktober 2008, Deutsche Gewerkschaftsbund, Berlin.

Field, S. (2008), *Appraisal and Evaluation for Vocational Education and Training (VET) Policy*, OECD, Paris.

Grubb, N., *et al*. (2006), *Thematic Review of Tertiary Education, Country* Note, OECD, Paris. Available at: *www.oecd.org/dataoecd/37/21/38092630.pdf.*

Han, Y.K. and *E.G.* Kim (2002) "Attracting, Developing and Retaining Effective Teachers: Background Report for Korea", KEDI, *www.oecd.org/dataoecd/18/23/2713221.pdf.*

HM Treasury (2003), *The Green Book*, TSO, London.

Hoeckel, K. (2008), *Costs and Benefits in Vocational Education and Training*, OECD, Paris.

Hoeckel, K.,*et al*. (2008), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Australia*, OECD, Paris. Available at: *www.oecd.org/dataoecd/27/11/41631383.pdf*

Hoeckel *et al*., (2009), Learning for Jobs: the OECD Policy Review of Vocational Education and Training. England and Wales, OECD, Paris. Available at: *www.oecd.org/dataoecd/32/8/43947857.pdf*

Irish Economic and Social Research Institute (2008), personal communication from the Irish Economic and Social Research Institute, 11 April 2008.

Keep, E. (2005), "Reflections on the Curious Absence of Employers, Labour Market Incentives and Labour Market Regulation in English 14-19 Policy: First Signs of a Change in Direction?", *Journal of Policy*, Vol. 20, No. 5, pp. 533-553, Taylor & Francis.

Kis, V., K. Hoeckel and P. Santiago (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Mexico*, OECD, Paris. Available at: *www.oecd.org/dataoecd/28/37/43277304.pdf.*

Kis, V., and S. Field (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Chile: A First Report*, OECD, Paris. Available at: *www.oecd.org/dataoecd/33/13/44167258.pdf.*

Kuczera, M, *et al*. (2008), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Norway*, OECD, Paris. Available at: *www.oecd.org/dataoecd/45/34/41506628.pdf*

Kuczera, M., V. Kis and G. Wurzburg (2009), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Korea*, OECD, Paris. Available at: *www.oecd.org/dataoecd/53/49/42689417.pdf*

Kuczera, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

Layard, R .and S. Glaister (eds.) (1994), *Cost Benefit Analysis*, Cambridge University Press, Cambridge.

McCoy, S., E. Kelly and D. Watson (2007), *School Leavers' Survey Report 2006*, ESRI and Department of Education and Science, Dublin.

Mühlemann, S., *et al.* (2007), An Empirical Analysis of the Decision to Train Apprentices, *Labour: Review of Labour Economics and Industrial Relations*,Vol. 21, No. 3, pp. 419-441.

National Audit Office (2005), *Employers' Perspective on Improving Skills for Employment*, Report by the Comptroller and Auditor General. HC 461 Session 2005-2006, National Audit Office, London.

OECD (2005), *Thematic Review of Adult Learning, Korea Country Note*, OECD, Paris.

OECD (2007), *Qualifications Systems, Bridges to Lifelong Learning*, OECD, Paris.

Pereira, A., *et al.* (2007), "Moving in the Right Direction? Labour Mobility, Labour Shortage and Canada's Human Potential", *Action Canada*, June 2007.

Philips, D. (2003), "Lessons from New Zealand's National Qualifications Framework", *Journal of Education and Work*, Vol. 16, No. 3, pp. 289-304.

Raffe, D., J. Gallacher and N. Toman (2007), "The Scottish Credit and Qualifications Framework: Lessons for the EQF", *European Journal of Vocational Training*, No. 42/43.

Ryan, P. (2000), "The Institutional Requirements of Apprenticeship: Evidence from Smaller EU Countries", *International Journal of Training and Development*, Vol. 4, No. 1, pp. 42-65.

Soskice, D. (1993), "Social Skills from Mass Higher Education: Rethinking the Company-Based Initial Training Paradigm", *Oxford Review of Economic Policy*, Vol. 9, No 3, pp. 101-113, Oxford University Press, Oxford.

Texas Education Agency (TEA) (2010), Best Practices Clearninghouse website, *www.teabpc.org*, accessed June 2010.

Tuck, R. (2007), *An Introductory Guide to National Qualifications Frameworks: Conceptual and Practical Issues for Policy Makers*, International Labour Office, Geneva.

United Nations Economic Commission for Europe (2007), Register-based Statistics in the Nordic Countries. Review of Best Practices with a Focus on Population and Social Statistics, United Nations, New York and Geneva.

Wößmann, L., *et al.* (2007), *School Accountability, Autonomy, Choice and the Level of Student Achievement: International Evidence from PISA 2003*, OECD Education Working Paper No. 13, OECD, Paris.

Young, M. (2005), National Qualifications Frameworks: Their Feasibility for Effective Implementation in Developing Countries, Skills Working Papers No. 22, International Labour Office, Geneva. *http://ilo.law.cornell.edu/public/english/employment/skills/download/wp22young.pdf*

Annex A

National VET centres in OECD countries

Australia: The **National Centre for Vocational Education Research** (NCVER) founded in 1981, is a not-for-profit organisation owned by federal, state and territory ministers responsible for VET. It employs over 80 persons. NCVER's main tasks are: *i)* collecting VET statistics; *ii)* managing the national VET research grants; *iii)* managing a VET research database; *iv)* disseminating the results of research and data analysis; *v)* building links with similar organisations in other countries; and *vi)* undertaking commercial consultancies. These various activities are financed mainly (85%) by the Department of Education, Employment and Workplace Relations, other revenues come from other state bodies and private consultancy activity.

Austria: The **Institute for Vocational Education and Training Research** (*Österreichisches Institut für Berufsbildungsforschung, ÖIBF*) was established in 1970 through an initiative of employee associations and the Ministries of Labour and of Science and Research. This non-profit institute, employing around ten staff, aims to facilitate a better understanding of VET in Austria and promote interdisciplinary research in the field. Its research centres around: *i)* initial and continuing VET, including at tertiary level; *ii)* career guidance; *iii)* evaluation of individual programmes and institutions; i*v)* labour market analysis; *v)* new teaching and learning methods; and *vi)* economics of VET. The **Institute for Research on Qualifications and Training of the Austrian Economy** (ibw) conducts research and development at the interface between education and training, business and qualifications. The ibw was founded in 1975 by the Austrian Federal Economic Chamber (WKO) and the Federation of Austrian Industry (IV). Ibw's major project partners and clients include federal ministries, the Public Employment Service Austria (AMS), regional governments and individual companies. On an international level, the EU and OECD use ibw's services either directly or within the framework of their programmes. The ibw represents Austria in the ReferNet network, established by Cedefop.

Czech Republic: The **National Institution of Technical and Vocational Education** (*Národní ústav odborného vzdělávání*, NUOV) has a similar function to that of the Hungarian NIVE (below). However, its scope is more concentrated on development of teaching materials and other implementation related issues A similar institutional setting exists in the Slovak Republic with the State Institute of Vocational Education.

France: The **Centre for Research on Education, Training and Employment** (*Centre d'études et de recherches sur les qualifications, Céreq*) was established in 1971 with the aim of assisting national and regional public authorities, occupational branches, and social partners in developing and implementing VET and HRM policies. In 1985, Céreq became an autonomous public institution placed under the Ministries of Education and Labour. Since then, it has enlarged its scope acquiring new fields of research and developed a growing network of associated regional centres. Today, it fulfils five main tasks: *i)* developing international; and *ii)* regional VET research networks; *iii)* researching and analysing the French VET system according to the ministries requests; *iv)* producing regular employment and qualifications forecasts; and *v)* managing a VET documentation centre.

Germany: The **Federal Institute for Vocational Education and Training** (*Bundesinstitut für Berufsbildung, BIBB*) founded in 1970, is accountable to and funded by the Federal Government, and is subject to the legal supervision of the Federal Ministry of Education and Research. It employs around 500 staff. Its decision making bodies comprise representatives from employer and employee associations, federal and states governments. Its main tasks are: *i)* analysing labour market trends, particularly identifying future skills needs; *ii)* compiling general statistics and conducting research on the German VET system; *iii)* managing several VET research databases; *iv)* supporting training enterprises and VET training centres through targeted training programmes (*e.g.* JOBSTARTER, STARegio); *v)* contributing to the development of qualification frameworks; and *vi)* engaging in international co-operation.

Hungary: The **National Institute of Vocational Education** (NIVE) was established in 1990 and its successor is the Hungarian National Institute of Vocational and Adult Education (*Nemzeti Szakképzési és Felnöttképzési Intézet, NSZFI*), which was established on 1 January 2007 through integrating four separate VET institutes. It is a government-funded research centre which also has an active role in VET policy development and implementation, also in co-ordinating VET research and services. It also raises funds through its commercial activities (maximum 20% of its total budget). Its main tasks are rather diverse and encompass: *i)* developing examination and teaching materials; *ii)* managing the Labour Market Fund's

Training Subfund raised through training levies and other smaller VET development funds; *iii)* evaluating vocational training institutes; *iv)* disseminating best practices; *v)* collecting VET data and managing the resulting database; *vi)* organising training for vocational teachers; and *vii)* accrediting adult training institutions. In order to support these diverse activities it employs more than 200 people and commissions research projects.

Korea: The **Korean Research Institute for Vocational Education and Training** (KRIVET) is a government-funded research institute whose purpose is to inform VET policy making and to disseminate VET related data and knowledge. Established in 1997, it has since grown to host 130 full-time researchers. Its main tasks are: *i)* analysing national VET policies; *ii)* supporting the network of VET stakeholders; *iii)* developing and propagating VET programs; *iv)* conducting research on qualifications systems; *v)* evaluating vocational training institutes; *vi)* carrying out regular labour market analysis and managing the resulting database; *vii)* providing career guidance; and *viii)* promoting international co-operation.

The Netherlands: The national **Expertise Centre for Vocational Education** (*Expertisecentrum Beroepsonderwijs, ECBO*) started work from January 2009 and is responsible for developing and transferring knowledge together with educational practice and policy. ECBO has an intermediary role between on the one hand all stakeholders in VET and on the other hand research institutions, universities, teacher training colleges, advisory bodies, think tanks etc. In addition there are expertise centres for different industrial sectors, which form the link between VET institutions and the relevant industrial sector. Their managing boards include representatives of employers, employees and VET-institutions. The centres are responsible for developing a qualification structure setting out the knowledge and skills required by employers, for ensuring sufficient training placements and to ensure the qualification of companies to provide practical training. Their umbrella organisation, COLO, is one of the members of the advisory board of the national Expertise Centre for Vocational Education.

In Switzerland, the **Leading Houses** (LHs) are VET competence networks built around one or more university professorships. Their purpose is to address gaps in the Swiss VET evidence base and to build up a VET research community. Since 2004, six LHs have been commissioned by the federal Office for Professional Education and Technology which also determines uniform performance assessment standards: *i)* Quality of Vocational Education and Training; *ii)* Learning Strategies; *iii)* Economics of Education: Firm Behaviour and Training Policies; *iv)* Economics of Education: Transitions, Skills and Labour; *v)* New Media and Technologies; and *vi)* Social Competences (already completed). International advisory

boards prevent a too narrow research focus and LHs are required to open up parts of the projects for public tendering to foster competition. Young researcher's involvement is promoted; dissemination receives considerable importance (*e.g.* Reihe Berufsbildungsforschung Schweiz).

In the United Kingdom, the **Centre for the Economics of Education** (CEE) was established in March 2000 and receives core funding from the government (Department for Children, Schools and Families and the Department for Innovation, Universities and Skills). The CEE is a multidisciplinary research centre with three partners: the Centre for Economic Performance at the London School of Economics and Political Science (LSE), the Institute for Fiscal Studies, and the Institute of Education. All three partners provide research in the field of the economics of education and training, and issues relating to education, training and the labour market. The research is heavily orientated towards empirical work with the aim of informing policy by making use of data and research results.

United States: The **National Research Center for Career and Technical Education** similar to the above institutes but with a much more limited scope, as state VET systems are very diverse and several competing private and public organisations already provide research on VET aiming to inform policy making.

Annex B

Summary assessments and policy recommendations for reviewed countries

Australia
Hoeckel, K., *et al.* (2008)

Strengths

Australia has a very well developed VET system, which enjoys a high degree of confidence. In particular:

- Engagement of employers is strong.
- The national qualification system is well established and understood.
- The VET system is flexible and allows for a fair amount of local autonomy and innovation to adapt learning to local circumstances.
- Data and research on most VET issues are good.

Challenges

- The division of responsibilities between the Commonwealth and state and territory governments is unclear.
- Principles underpinning funding are not apparent and nor consistent with human capital policies and principles.
- The use of skills forecasting creates some difficulties.
- There are some weaknesses and gaps in the relevant data.

- Apprenticeships are rigid and seem to depend on duration rather than competence.
- Training package development and implementation processes are inefficient.
- The ageing of the teacher labour force is a serious problem.

Recommendations

a. Commonwealth, state and territory governments should seek to agree common principles for VET funding and provision and to achieve as much administrative consistency as possible, bearing in mind the appropriate interests of local democracy in a context of devolved government. Costs and benefits arising from local variations and from duplication of responsibilities should be quantified.

b. Students should be entitled to pursue VET qualifications without charge up to the level normally attained at the end of schooling, that is, up to Certificate II or III. Fees for higher-level VET qualifications should be levied on the same broad basis as for higher education and defrayed through HECS income-contingent loans.

c. Students entitled to funding should be able to choose VET providers. Open competition should be accompanied by support measures designed to ensure that a good range of provision is accessible to all, including disadvantaged groups, that better information is available to potential students on the quality of providers, and that different types of providers can compete on a fair basis.

d. Skills forecasts are often unreliable and should not be the foundation of central planning. In future, there should be more emphasis on a system driven by student demand balanced by employer willingness to offer workplace training.

e. A broader range of quality and outcome data at the provider level should be developed and made available. This will support student choice and provision driven by student demand. Data should become a systematic element of programme and policy decision making. Efforts should be made to fill the data gaps, including an extension of the Student Outcome Survey.

f. The commendable reforms that base apprenticeships on competences now need to be translated into action, allowing

flexibility in the length of apprenticeships and supporting that through a common procedure for their assessment. Costs and benefits of apprenticeships should be analysed, reforms should be evaluated and the results used for policy planning. Ways of integrating apprentices into the production process earlier during their training should be explored.

g. Training packages should be replaced by simple and much briefer statements of skills standards. Consistency in standards throughout Australia should be achieved through a common assessment procedure to determine whether the necessary skills have been acquired.

h. Initiatives in which trainers work part-time in VET providers and part-time in industry should be encouraged. Innovative strategies are necessary to sustain the numbers and skills of the teacher and trainer labour force in providers. Better data on VET teachers and trainers should be systematically collected, published and used for planning and evaluation purposes.

Austria
Hoeckel, K. (2010)

Strengths

The Austrian VET system has a number of strengths:

- The dual system has many commendable features, with well-structured apprenticeships that integrate learning in schools and workplace training.
- Youth unemployment rates are low and the transition from education to first employment is smooth by international standards.
- Social partner involvement at all levels, in VET policy design and delivery, is strong, with effective co-operation between different stakeholders.
- The VET system caters for a broad range of needs, providing safety nets for those with weak school results or from disadvantaged backgrounds, but also offering five year VET college programmes providing high level technical training.
- The VET system offers different progress routes at various levels, avoiding dead-ends and linking VET to general tertiary education through the *Berufsreifeprüfung* (professional baccalaureate).
- The current teacher workforce in VET schools seems to be well prepared and industry experience is mandatory; many schools have flexible arrangements, with teachers working part-time in industry. Recent reforms have changed the requirements on VET teachers but the effects are not yet apparent.
- Completion rates in upper secondary education are high by international standards.

Challenges

- The VET system has a structural anomaly in the 9th grade, with a double transition for apprentices and some students spending a year in an inappropriate track.
- Some VET qualifications may be too narrow to provide an adequate foundation for a career as well as a first job.

- Quality assurance of apprenticeship training does not guarantee minimum standards.
- Workshop-based dual programmes (*Überbetriebliche Ausbildung*) are costly and risk reducing the incentives for employers to provide apprenticeships.
- Quality career guidance based on labour market information is not available to all VET students.
- Provision of basic literacy and numeracy skills to VET students is – particularly in the dual system - limited.

Recommendations

a. Reform the 9th grade, reducing double transitions and ensuring that all students are channelled into the right programme and receive appropriate preparation for their apprenticeship or full-time school-based VET course.

b. Use modules, training firm alliances and apprenticeship experiences as means to counter-balance the tendency of employers to create their own separately defined specific qualifications. Make the VET provision on the school side more flexible to allow for a more rational provision.

c. Enhance quality and ensure minimum standards in apprenticeship training in firms, through effective monitoring and support to training firms. Consider different self-assessment tools and the possibility to make some form of quality control (through the mid-term test or inspection) mandatory.

d. Keep the focus of *Überbetriebliche Ausbildung* courses on leading young people into regular apprenticeships. Redirect resources from such courses to preparing young people for regular apprenticeships.

e. Ensure that good quality career guidance is available to all. Focus the preparation of career guidance professionals stronger on labour market information and improve the availability and presentation of relevant evidence.

f. Introduce systematic assessment to identify basic skills gaps among VET students and target help at those who need it most. Strengthen the focus on literacy and numeracy in the VET system, and consider reforming the curriculum of vocational schools to this end using innovative teaching methods.

Belgium-Flanders
Kis, V. (2010a)

Strengths

- There is a good range of vocational options at different levels. Initial secondary education offers full-time and part-time programmes, while continuing VET provides further learning and second chance opportunities in centres for adult education, and training centres of the Flemish Employment and Vocational Training Agency (VDAB) and the Flemish Agency for Entrepreneurial Training (*Syntra Vlaanderen*).
- The average performance of 15-year-olds in reading, mathematics and science is very strong by international standards, as indicated by PISA assessments, in which Flanders has been consistently among the best performing countries.
- A commitment to universal upper secondary education is embedded in compulsory education up to age 18, with the possibility of part-time education from age 16.
- Policy development is dynamic, as illustrated by the recent green paper entitled "Quality and opportunities for every pupil", the "Competence Agenda" and the "Pact 2020" agreement concluded between the government and social partners. Evidence is used extensively in reforms.
- The Flemish VET system gives commendable attention to entrepreneurial training through *Syntra Vlaanderen*, which offers flexible routes to acquire entrepreneurial competences.

Challenges

- A proportion of students have weak literacy and numeracy skills.
- Students are tracked at a young age (14, with institutional transition at age 12) and there are limited opportunities for upward progression between secondary tracks.
- The share of unqualified school leavers is high. In 2006, 12.4% of 18-24-year olds did not have a secondary qualification and did not follow secondary education.

- Some parts of the VET system make limited use of workplace training, and the effectiveness of quality assurance mechanisms for workplace training also varies.
- The mix of provision is dominated by student preferences in school-based VET, with limited mechanisms to take into account labour market needs.
- The quality of career guidance provided in compulsory education, including collaboration between schools and pupil guidance centres, is variable. Sources of career information are fragmented.

Recommendations

a. Strengthen the core general skills component in programmes that currently contain limited general education, in particular in BSO (vocational secondary education), DBSO (part-time vocational secondary education) and *Syntra* apprenticeships. For those who wish to obtain general education beyond the core general skills component, create options to do so.

b. Systematically identify those with literacy and numeracy problems at the beginning of VET programmes and provide targeted support to those in need. Enhance data and research on the achievement of the final objectives and on ways to achieve these. We welcome the ongoing sample-based standardised assessment of the final objectives and recommend extending this approach.

c. Postpone tracking at least until the age of 14 and make education in the period preceding tracking fully comprehensive.

d. Sustain and further develop workplace training. Ensure the quality of workplace training, by controlling its content, strengthening the assessment of competences and providing an appropriate level of preparation to those who supervise students.

e. Ensure the mix of provision is more responsive to labour market needs by taking the availability of workplace training into account to balance the influence of student preference in upper secondary VET. This should be complemented with high quality career guidance. Reform the elements of funding that risk distorting the mix of VET provision.

f. Strengthen and develop career guidance by:

   – Ensuring that career guidance receives attention, separately from psychological counselling, and is not submerged by it.

Consider the establishment of a separate career advisor profession.

- Ensuring that individuals receive guidance that is objective and independent from the providers of education and training programmes.
- Creating a comprehensive website with career information about all levels of education and training.

Chile
Kis, V., S. Field (2009)

Strengths

The Chilean VET system has a number of strengths:

- It has been underpinned by a dynamic economy, with GDP growth averaging 6% over the last two decades – but Chile has not escaped the global economic slowdown in 2009.
- Society places a high value on education and training, with strong social demand for education, and fast-increasing participation in post-compulsory education; upper secondary graduation rates are up from 46% in 1995 to 71% in 2007 (OECD, 2009).
- Efforts to improve schooling quality may be paying off: the reading performance of students in PISA improved between 2000 and 2006 (OECD, 2007).
- The government's commitment to develop and reform the VET system is illustrated by the recent work of the VET Commission and the creation of the National Council for VET.

Challenges

Among the challenges faced by Chile:

- The various elements of the VET system are weakly connected to each other, both in institutional and curricular terms. The initiative to create a qualifications framework is a welcome attempt to address this challenge, but its implementation faces a number of obstacles.
- The literacy and numeracy skills of 15 year olds in Chile are not as strong as they should be, and this is likely to be a particular problem among those in vocational education and training programmes.
- Workplace training, as part of vocational programmes, is weakly developed. Many upper secondary VET students do not participate in workplace training and the mechanisms to assure its quality of are weak.

Among the report's policy options

a. Systematically engage with employers, trade unions and other key stakeholders to develop and implement the qualification framework. This may involve a gradualist approach to implementation, to ensure the full buy-in of all stakeholders.

b. Strengthen quality assurance throughout the VET system to support the qualifications framework – within tertiary education ensuring that the existing quality assurance arrangements can address the specificity of VET.

c. Ensure that vocational programmes devote sufficient space in the curriculum, and sufficient good quality teaching, to the acquisition of hard and soft general skills.

d. Identify particular numeracy and literacy weaknesses among students in vocational programmes and target help to those who need it.

e. Starting with the initiative to set up the National Council, establish systematic architecture for consultation between the VET system and industry, allowing for consultation at sectoral and regional levels.

f. Make systematic efforts to encourage workplace training in all parts of the VET system, building partnerships between VET institutions and industry; establish effective quality standards for the workplace training.

China
Kuczera, M., S. Field (2010)

Strengths

Many strengths are apparent in the Chinese system for vocational education and training in upper secondary schools. The strengths include:

- The establishment of 9 year schooling with almost all children in China now completing lower secondary education.
- A rapidly increasing number of young people now stay on in upper secondary education – now around three quarters of the cohort, and fast increasing numbers of young people in tertiary education. At upper secondary level about half the cohort (as a matter of policy) enter upper secondary vocational schools – with more than 20 million students now in vocational schools.
- A strong and simple model for upper secondary vocational education – involving a range of specialisms, a good percentage of general academic skills underpinning all the programmes, and a commitment to workplace training and close relationships with employers.
- Upper secondary education typically requires fees, but the government has introduced a number of measures, both at national and provincial level to try to overcome financial barriers and ensure that as many students stay on in school – this includes a national scheme to offer a CNY 1500 (Yuan renminbi) per year subsidy to students in VET schools, largely covering their fees, and from 2009 an initiative to make tuition free for upper secondary vocational school students.
- China has strong arrangements to ensure that teachers in vocational schools remain abreast of the requirements of modern industry. Teachers in vocational schools are required to spend one month in industry each year, or two months every two years. In addition, many schools employ a significant number of part-time teachers who also work in industry.

Challenges

Workplace training:

- Workplace training is actively encouraged by government subsidies and current policy is that each student should spend one year on workplace training during their upper secondary programme. But co-operation with employers is variable. But there are few quality standards for workplace training and few regional, sectoral or national bodies to engage employers and link them to the VET system.

Resources and standards:

- While there are some compensatory arrangements, to a great extent the resources of any school depend on the resources of the province and county/district of which they are part. Given China's rapid but uneven economic development, the effect is to leave schools in some rural areas and poorer provinces under-resourced. There are few clear minimum standards for vocational schools in terms of equipment, teachers and so on. While there are some national guidelines, they are only implemented where resources are available. One of the main standards is that of 'key national schools', but this appears, by design, to require resources not available to most schools.

Planning and co-ordination:

- Planning to meet labour market needs is insufficient. Provinces manage some schools directly through the education commission, some through other government bodies such as the agriculture bureau, while many schools are also managed at district and county level. This creates a formidable co-ordination problem. On the demand side, data on labour market demands are often lacking.

Among the report's policy options

Workplace training:

- Create a standard expectation of a minimum period of workplace training as an element in upper secondary vocational education and training.

- Consider carefully the use of financial incentives taking into account the limited evidence of useful impact.
- Develop a standard agreement or contract for workplace training to confirm the rights and obligations of trainees and training firms.
- Establish standards for workplace training in consultation with employers.
- Encourage local associations of training firms to manage and support workplace training offers for vocational schools.
- Develop mechanisms to engage employers at regional and sectoral level to plan provision, agree curricula and support workplace training.

Resources and standards:

- Overall expenditure on education, including VET, should be increased, as recommended in previous OECD reviews of China.
- Given big regional discrepancies in available funding on education, extra resources should be allocated to the poorest localities in order to remove financial barriers to participation in VET and to improve its quality. Mechanisms to this end might include:
  - Centrally allocated per capita funding support for upper secondary education, provided by the national government directly to the counties where upper secondary (including VET provision) is most limited, and where quality (measured in terms of teacher indicators such as pupil-staff ratio and teacher qualifications) is weakest.
  - More fundamentally, enhanced fiscal transfers to ensure a stronger funding base for education at provincial and county level.
- Establish minimum quality standards for schools that all regions of China and all schools can reasonably aim for, instead of, or in addition to, the standards of key national schools. Such quality standards might be linked to resource reallocation.

Planning and co-ordination:

- Provide a mix of VET programmes that reflect both student preferences and employer needs.

- Develop planning arrangements to manage the mix of skills provision in consultation with employers while recognising the information challenges.
- Use workplace training and employer willingness to provide it as a guide to the appropriate mix of provision.
- Improve co-ordination in the provision of VET across different levels of government and VET providers.

Czech Republic
Kuczera, M. (2010)

Strengths

The Czech VET system has a number of strengths:

- The average academic level of 15 years-old measured by PISA is good.
- The majority of students complete their upper secondary studies; the dropout rate from this level of education is below the OECD average.
- The Czech Republic has a very impressive data base on education and labour market outcomes of education, one of the best the OECD team has seen.
- Many reforms have been launched recently, including: the setting up of a new qualification system; the introduction of a national standardised exam in apprenticeship programmes, the launch of a major new adult education initiative, and new tools to improve career guidance.
- The government is actively fostering stronger participation of social partners in VET. Sector Councils provide a good example of the co-operation between social partners and policy makers.

Challenges

- The performance of students and the quality of teaching in apprenticeship programmes (*střední odborné učiliště* – SOU) is low in comparison to general and technical programmes (*střední odborné školy* - SOS) leading to the maturita exam.
- Governance of upper secondary VET at regional level lacks the transparency and accountability mechanisms that would ensure a match between labour market demand and student choice, and secure quality standards across the country.
- The provision of training is highly variable in terms of the number of students participating, length and quality; it depends on the sector and individual schools. Participation of companies in work place training provision is low.

- The institutional system for social partners' involvement in VET is fragmented. Not all VET related areas are subject to social partners' consultation.
- Initial and in-service education and training of upper secondary school counsellors focuses more on pedagogical and psychological counselling than on career guidance. School counsellors combine career guidance with teaching other school subjects, and providing guidance for personal problems and study difficulties.
- Career guidance is under the responsibility of two Ministries: the Ministry of Education, Youth and Sport and the Ministry of Labour and Social Affairs, which might contribute to the fragmentation of the system.

Recommendations

a. Improve teaching and systematically assess the quality of general education in vocational programmes, particularly in the apprenticeship programmes. Targeted help should be directed at weak performers.

b. Improve the quantity and quality of career guidance in basic education by:

   – Splitting counselling from career guidance, which would become the responsibility of a 'career advisor'.

   – Introducing a focus on career guidance and more flexibility in the initial training of career advisors alongside better access to good quality in-service training for existing staff.

   – Diversifying forms of career guidance provision.

In the longer run similar reforms should be introduced in career guidance offered in upper secondary VET.

c. Establish clearer procedures and more transparent criteria covering the development of regional education plans. These should strengthen the involvement of employers and give more weight to student preferences in planning the mix of upper secondary provision.

d. Systematically enhance the quantity and quality of workplace training in both apprenticeship and technical programmes through the establishment of a national framework for workplace training. This should involve well-targeted incentives for schools, employers

and students and the establishment of national workplace training standards, backed by effective quality assurance.

e. Introduce a standardised assessment covering the practical elements in technical programmes.

f. Employers and unions should be more engaged in VET. To this end there should be some simplification and rationalisation in the arrangements for social partners' involvement in VET with enhanced and clearly defined responsibilities for the bodies concerned.

England and Wales
Hoeckel, K., *et al.* (2009)

Strengths

- England and Wales are committed to a step improvement in the level of workplace skills.
- Substantial resources have been made available for this task.
- The conscious attempt to engage employers is commendable.
- VET policy making in England and Wales is self-evidently dynamic and innovative.
- The system is flexible and allows for tailor-made training solutions for employers.

Challenges

- The meaning of employer engagement is very fluid.
- Few countries have achieved strong employer engagement without an equally strong apprenticeship system, which remains elusive in England and Wales.
- In spite of the government's declared intention to have much VET employer-led, the delivery of the Leitch targets will require a very strong lead from government.
- Policy structures are both more complex and more unstable than in most other OECD countries, and this inhibits employer engagement.
- A demand-driven system may imply more of a market in providers. But attempts to open up the market have been halting and the effects uncertain.
- While there is a substantial base of data and analysis, it remains fragmented, with inadequate attention to international experience.
- The current sharp economic downturn is imposing a number of pressures on the skills system.

Recommendations

a. Priorities for employer engagement should be clearly defined and the rationale for seeking that engagement should be set out by the governments of England and Wales. Evidence on employer engagement should be further developed. Fragmented surveys should so far as possible be consolidated and co-ordinated.

b. Given that complexity and volatility in the VET system hinder employer engagement, the institutions of the VET system should be simplified and stabilised. We welcome and support the proposals of the UK Commission for Employment and Skills (UKCES) in this respect. These proposals need to be sustained and further developed.

c. As a way to engage employers so as to reach the skills targets identified in the Leitch report, governments in England and Wales should explore measures including those designed to reduce the cost of training, the establishment of a stronger evidence base to encourage employer support for training, and, possibly, the use of compulsive measures including training levies.

d. Attempts to foster employer engagement in England and Wales should be closely linked to the development of the apprenticeship system.

e. Governments in England and Wales should take account of previous experience, including international experience, when extending the market in VET provision. In particular users need good information about the quality of different programmes and institutions.

f. England and Wales should take account of international evidence more routinely in its policy-making process. Consider the establishment of a national VET institution to oversee VET research and analysis.

Germany
Hoeckel, K., and R. Schwartz (2010)

Strengths

- Vocational education and training is deeply embedded and widely respected in German society. The system offers qualifications in a broad spectrum of professions and flexibly adapts to the changing needs of the labour market.
- The dual system is especially well-developed in Germany, integrating work-based and school-based learning to prepare apprentices for a successful transition to full-time employment.
- A major strength of the dual system is the high degree of engagement and ownership on the part of employers and other social partners. But the system is also characterised by an intricate web of checks and balances at the national, state, municipal, and company levels that ensures that the short-term needs of employers do not distort broader educational and economic goals.
- The VET system as a whole is well-resourced, combining public and private funding. Germany has maintained strong financial support and maintained the apprenticeship offer for the VET system even during the crisis.
- Germany has a well-developed and institutionalised VET research capacity, including the Federal Institute for VET, (*BIBB*), and a national network of research centres that study different aspects of the system to support continuous innovation and improvement in the VET system.

Challenges

- The transition system, now serving nearly as many young people as the dual system, suffers from undue fragmentation and an absence of transparency. Despite the very substantial resources devoted to the system, too few programme participants make a successful transition into the regular VET system.
- Career guidance seems highly variable across the *Länder,* with no single agency responsible for assuring delivery of quality information and guidance services to all students.

- Some students leave compulsory school with weak core academic skills. The VET system is not currently organised to ascertain whether this is in fact a problem or, if so, to address it.
- The evaluation of dual system students at the end of their apprenticeship is dominated by the Chamber exam. Because their school performance does not count in the Chamber exam, students may not take their schooling seriously, thereby limiting their ability to participate successfully in some form of tertiary education.
- Although Germany has recently opened more pathways from upper-secondary VET to tertiary education, to date very few VET graduates have made use of those pathways.
- Shrinking cohort numbers due to demographic decline is providing an important contextual challenge.

Recommendations

a. Create a coordinating committee for the transition system within each *Land* to improve co-operation between stakeholders and make transition offers more transparent. Evaluate the cost-effectiveness of individual transition measures and roll out the most promising initiatives to the whole country.

b. Reform the career guidance system to deliver well-informed guidance to all. Fix lead responsibility for career information and guidance in a single governmental agency. In the longer run, consider structural reform of the dual system to facilitate effective career choice.

c. Assess the literacy and numeracy skills of all students entering the transition system, and those entering apprenticeships without a school leaving certificate from a *Realschule* or *Gymnasium*. Provide explicit basic skills instruction for those in need of remediation. Place greater priority on general education and broad academic skill development in the part-time vocational schools.

d. Make inclusion of the school mark in the final certificate mandatory and include an explicit assessment of literacy and numeracy skills in the final school exam. In the longer run, merge the Chamber exam and the school exam into a single final assessment. Strengthen collaboration between schools and employers through an integrated assessment process.

e. Open access to tertiary education further and address transition barriers perceived by students. Design adequate guidance, induction and financial support measures for less academically trained people wanting to attend university. Promote dual universities and dual programmes at regular universities and encourage more flexible, part-time university offers and the recognition of prior learning and experience.

Hungary
Kis, V., *et al.,* (2008)

Strengths

- Since 1989, Hungary has made significant efforts to restructure its VET system to face the challenges of the market economy. It has implemented major reforms to improve the ability of VET to meet labour market needs.
- The training levy provides a significant and reliable source of funds for VET and played a crucial role during the transition years.
- The Hungarian VET system can rely on a strong national qualifications framework.
- The number of 15-to-19- year-olds is set to decline sharply; this presents both an opportunity and a challenge for the Hungarian VET system.
- Policy makers' strong commitment to reform shows Hungary's will to address the challenges faced by VET.
- In the medium term, Hungary's GDP per capita is expected to converge to the EU average (ECB, 2008), and its economy is expected to grow by around 4% even though the current economic context is difficult.

Challenges

- The current VET system is strongly school-based with relatively few links to the labour market.
- The Hungarian school system's early tracking and multiple selection mechanisms potentially raise problems of both efficiency and equity.
- Data available are insufficient in several important respects, such as the labour market outcomes of different vocational programmes, the various funding sources of VET and the use of funds from the training levy.
- Many trainers are approaching retirement and there are few young trainers.

- VET has relatively low status and many students are oriented to VET because of poor academic performance.
- Hungary's employment rate is low by international standards. Compared to other European countries, the economic inactivity rate of young people is particularly high.

Recommendations

a. Standardise the transition to all types of secondary school after the 9th grade, rather than the 8th grade, a including in vocational training schools and start practical training in the 10th grade rather than in the 11th grade. These two elements should be implemented as a package.

b. Collect and publish Information on the labour market outcomes of VET on a school and programme basis, starting with a pilot survey of students leaving vocational programmes.

c. Adequately prepared advisers should provide systematic career guidance in all elementary schools on the range of secondary level programmes available and their respective outcomes. Students in vocational training and vocational secondary schools should receive comprehensive, impartial and reliable information on all the occupations available to them.

d. All vocational programmes should provide a substantial amount of practical training in the workplace or in an environment closely related to a workplace.

e. Regularly publish information about the rules of the levy in a form comprehensible to employers and collect and publish data about the revenues collected through the levy, how it is spent and the outcomes achieved. This would provide an essential basis for reviewing the operations of the levy.

Ireland
Kis, V. (2010b)

Strengths

The Irish VET system has a number of strengths:

- There is a good range of provision of different types of VET at post-secondary level, targeted at a wide range of different client groups, including those in and out of work and with second chance opportunities.
- The national qualifications framework is comprehensive, integrating both vocational and general qualifications and includes a strong commitment to the avoidance of dead-ends and pathways of progression.
- Collaboration with social partners is well-established and takes place at most relevant levels.
- The apprenticeship system is well-structured with a systematic blend of on and off-the-job elements.
- At high level there is good co-operation between the two lead departments, with little sense of rivalry. The National Skills Strategy provides for common objectives.
- There are some innovative ways of engaging employers in a bottom-up approach to provision, such as Skillnets – an initiative widely supported by employers.

Challenges

- The current economic crisis is making intense demands on the system to provide education and training for a sharply increasing number of people and poses serious challenges in particular to the apprenticeship system.
- Apprenticeships are limited to a narrow set of occupations. Workplace training is insufficiently used in many vocational programmes.
- Many of those looking after VET students, in particular those in companies, lack pedagogical training.

- Weak literacy and numeracy are serious problems among many learners but problems are often not identified in time or adequately addressed.
- FÁS (*Foras Áiseanna Saothair*), the Irish National Training and Employment Authority, is a large body with multiple missions. Evaluations and data to assess its efficiency and effectiveness are lacking.
- Data on labour market outcomes are fragmented and research on VET is scarce. The wide range of vocational programmes has not been systematically evaluated.
- Career guidance services are fragmented and weakly underpinned by information on labour market opportunities.

Recommendations

a. Review the apprenticeship system to improve its efficiency and fairness in addressing the skills needs of the labour market. Make extensive use of workplace training in all vocational programmes building on the existing types of provision and the experience with apprenticeship.

b. Respond to the crisis, both modifying and reinforcing existing measures.

   – Offer differentiated support to redundant apprentices, depending on their occupation and how far they have already progressed in their apprenticeship.

   – Review, immediately, the Employer Based Redundant Apprentice Rotation Scheme with a view to shifting the resources involved to more cost-effective across-the-board measures in support of redundant apprentices.

   – Consider measures to retain young people in education and training where the benefits outweigh the costs.

   – Carefully target education and training programmes for adult learners at their particular skills needs as well as the needs of the labour market.

c. Conduct a review of FÁS training services to enhance mechanisms for accountability and quality improvement. This would involve an improvement in the quality of data and evaluation, and consultation with employers.

d. Systematically identify the literacy and numeracy problems of those who come into contact with training services and provide basic skills support to those in need.

e. As a means of enhancing the competences of the VET workforce ensure that all teachers, trainers and instructors have some pedagogical training, and as a longer term goal offer pedagogical training to supervisors of VET students (*e.g.* apprentices, trainees) in companies. Encourage convergence in the qualification requirements for teaching in different sectors of the VET system.

f. Create an instrument to track progression through the education and training system, undertake routine evaluation of programmes and pursue economic analysis such as cost-benefit studies of apprenticeships. Encourage more research on VET. Create a comprehensive website with career guidance information.

Korea
Kuczera, M., V. Kis and G. Wurzburg (2009)

Strengths

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

Challenges

- VET institutions often see themselves as having a largely academic orientation but they are expected to provide job-ready recruits for industry. This is a dilemma.
- School-industry partnerships are typically established to satisfy the needs of local firms rather than to provide broader occupation-specific and transferable skills. Beyond such local initiatives, there is little employer engagement in the initial VET system.
- Notwithstanding the broad guidelines provided by the Ministry of Education, Science and Technology (MEST), individual VET institutions typically develop their curricula and provide the qualifications for meeting labour market needs. This leads to a duplication of effort.
- Workplace training is not systematically provided in vocational programmes and quality standards for workplace training are weak.
- VET teachers have strong academic and pedagogical preparation, but often lack practical work experience in their field.
- Co-ordination among ministries responsible for VET policy is weak.

- VET degrees obtained in high schools and junior colleges are not systematically aligned with the national technical qualifications (and underlying standards).

Recommendations

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

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

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

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

Mexico
Kis, V., K. Hoeckel and P. Santiago (2009)

Strengths

- Mexico's will to address the challenges faced by VET is illustrated by numerous recent initiatives, such as reform of the technological baccalaureate (*bachillerato tecnológico*) and creation of trainee grants (*becas de pasantía*).
- VET in Mexico plays an important social role by providing learning opportunities to students at risk of dropping out. Various initiatives, such as "mobile training units" (*unidades móviles*) reach out to students in remote regions with limited opportunities for learning.
- In some fields and subsystems of upper secondary VET, Mexico has excellent data on the labour market outcomes of VET graduates through the Labour Market Observatory (*Observatorio Laboral*).
- Encouraging measures have been taken to integrate VET into a broad framework of lifelong learning, including the elimination of dead-ends (*e.g.* introduction of the baccalaureate in CONALEP) and recent reforms aiming to facilitate mobility within the educational system.
- There are some excellent examples of collaboration between VET schools and employers, such as the Playa del Carmen project.
- Many VET teachers and trainers have work experience in their field and often continue to work in industry part-time, which should help to keep their vocational skills up-to-date.

Challenges

- Effective coordination and coherence within upper secondary VET remains a challenge. The subsystems of upper secondary VET sometimes have divergent interests, hindering effective policy development.
- Linkages between the VET system and employers are relatively weak, illustrated by the low level of involvement of employers in VET policy development.

- VET qualifications are not regularly updated and have limited recognition in the labour market.
- The pedagogical preparation of some VET teachers and trainers is insufficient.
- There is wide variation both in the quantity and quality of workplace training for VET students.
- There are weaknesses in the availability and use of data for policy making purposes and to inform stakeholders.

Recommendations

a. Integrate consultation between employers and upper secondary VET within a single coherent set of consultative arrangements. Include all subsystems in this framework to facilitate a collaborative approach to policy development.

b. As a long-term strategic goal, create quality standards for workplace training and a traineeship contract to expand workplace training and improve its quality.

c. Ensure that VET teachers and trainers receive pedagogical training before or shortly after entering the profession and provide some training to workplace supervisors. To improve the vocational skills of the VET workforce, make relevant work experience a prerequisite for trainers and require schools to develop strategies to update the vocational skills of VET teachers and trainers.

d. Explore options to develop a national vocational qualifications framework.

e. Improve data on labour market needs and labour market outcomes of VET. Develop capacity to use data for policy making and to inform stakeholders. Improve career guidance for prospective and current VET students.

Norway
Kuczera, M., *et al. (2008a)*

Strengths

Norway has a well-developed upper secondary VET system linked to apprenticeship, which enjoys a high degree of confidence among stakeholders. In particular:

- There is strong tripartite co-operation at national, county and sectoral levels.
- The VET system is supported by a high level of trust among stakeholders.
- By international standards, the system is relatively inclusive and little stigma is attached to VET tracks in upper secondary education.
- In the current exceptionally tight labour market employers are keen to attract apprentices.
- The literacy level of the adult population is high by international standards (IALS, ALLS).

Challenges

- Student choice may limit the responsiveness of VET to the labour market.
- Dropout is a problem.
- The ageing of school-based trainers makes it difficult to recruit new trainers fast enough to match the retirement rate.
- Quality assurance mechanisms for VET are inadequate.
- There are no qualification requirements for enterprise-based trainers and career counsellors.
- The available data are insufficiently exploited and gaps in the data need to be filled.
- PISA results indicate that the basic skills of those entering the VET system are relatively weak.

Recommendations

a. To improve the match between VET provision and labour market needs, student choice should be better guided and channelled. Planning of VET provision should take account of the availability of apprenticeship places; counties should reduce programmes that attract few apprenticeships. Students should receive good quality career guidance from well-qualified staff in lower and upper secondary school.

b. To tackle dropout, strengthen interventions in the early childhood and school systems to assist those at risk of dropping out. Use the system's flexibility to keep VET students in school while avoiding initiatives that might increase inequity. Collect better data on the flow of students through education and on the labour market performance of dropouts.

c. Norway's employers receive relatively substantial subsidies for apprenticeship training. Steps should be taken to ensure that the quality of the training provided is commensurate. Undertake a systematic study of the costs, benefits and quality of apprenticeships.

d. The introduction of the Knowledge Promotion Reform provides a useful opportunity to reinforce assessment procedures. Introduce a standardised national assessment of apprentices' practical skills.

e. Workplace supervisors and trainers of apprentices should receive some obligatory training.

f. Enhance data and analysis relating to VET and employ them more routinely in developing policy and career guidance. Consider the establishment of a dedicated centre for VET data and analysis.

Sweden
Kuczera, M., *et al.* (2008b)

Strengths

Sweden's upper secondary VET:

- Builds on strong compulsory school performance by international standards at age 15.
- Displays a modest rate of dropout.
- Has relatively high status.
- Allows room for local innovation.

Challenges

- Youth unemployment in Sweden is relatively high.
- The number of 15-19 year-olds is set to decline sharply.
- Upper secondary VET does not attempt to make students 'job ready' – leaving a potential mismatch with a labour market governed by collective agreements in which employers may be reluctant to take on such young people.
- More than half of VET trainers are over 50.
- The separation of school-based VET from a fast-changing and technology-driven workplace makes it hard to keep up with labour market needs.
- Currently, the social partners have limited influence over upper secondary VET.
- Data on labour market outcomes of VET are inadequately exploited – *e.g.* to provide better information to students choosing courses.

Recommendations

a. Maintain the current non-selective arrangements for upper secondary school programmes.

b. Establish a National Commission for VET composed of different government ministries and the social partners to provide a stronger

mechanism through which employers and employees' representatives can convey labour market requirements to VET providers.

c. Competition between schools needs to be fair and to be seen as fair: scrutinise the regulations to ensure that public and independent schools experience the same regulatory regime.

d. Publish information on the labour market outcomes of VET a school and programme basis. The National Register should be fully exploited, and possibly supplemented by regular surveys of recent leavers.

e. The 15-week work placement that is part of upper secondary VET should be subject to quality control and made mandatory for all upper secondary vocational programmes. Only vocational programmes capable of attracting work placements should be provided, linking the provision of VET skills to labour market requirements more closely.

f. Develop an apprenticeship system to complement school-based VET jointly between the government and the social partners and take full account of international experience.

Switzerland
Hoeckel, K., S. Field and W.N. Grubb (2009)

Strengths

Switzerland's highly developed VET/PET system has many strengths. In particular:

- The system is strongly employer and market driven.
- The partnership between Confederation, cantons and professional organisations works well.
- School and work-based learning are well integrated; workplace training (which Switzerland refers to as in-company training) is not too company-specific.
- Switzerland's VET/PET system is well-resourced and able to include up-to-date equipment.
- Switzerland's apprenticeship-based vocational programmes pay for themselves, in the sense that benefits to most employers outweigh the costs.
- Tertiary VET is strong; there is a broad spectrum of tertiary VET offerings.
- Flexible pathways have been introduced to allow for mobility and avoid the risk of dead-ends.
- Vocational teachers and trainers, examiners and directors are well prepared.
- Quality control is ensured and national assessment procedures are in place.
- Career guidance and counselling is systematic and professional.
- Evidence is well developed and routinely used to support policy arguments.

Challenges

- The global recession might have negative effects on VET, in particular the provision of apprenticeship places.

- Demographic changes with shrinking cohort numbers may sharpen competition between academic and vocational education; VET faces competition from academic tertiary education.
- Entry of international companies without a training tradition threatens the Swiss dual-track learning arrangements.
- Several equity concerns are confronting the VET system.

Recommendations

a. Switzerland should accompany its justified pride in a high quality VET system with practical measures to maintain its strengths. This requires, among other matters, high quality data and analysis. Review whether the current mix of VET and academic education for young people matches labour market needs.

b. Aim to reinforce equity throughout the VET system: ensure that dropout is minimised and that those who do dropout are supported adequately; ensure common funding principles to underpin the level of subsidy granted to VET and university forms of education; and use VET to build the skills and labour force participation of women. Monitor the system closely in support of these objectives.

c. Develop a contingency plan to cope with any sharp reduction in employer willingness to provide in-company training as a result of the economic crisis.

References

Hoeckel, K., *et al.* (2008), *Learning for Jobs. The OECD Review of Vocational Education and Training. Australia*, OECD, Paris. Available at: *www.oecd.org/dataoecd/27/11/41631383.pdf*

Hoeckel, K., *et al.* (2009), *Learning for Jobs. The OECD Review of Vocational Education and Training. England and Wales,* OECD, Paris. Available at: *www.oecd.org/dataoecd/32/8/43947857.pdf*

Hoeckel, K., S. Field and W.N. Grubb (2009*), Learning for Jobs. The OECD Review of Vocational Education and Training. Switzerland,* OECD, Paris. Available at: *www.oecd.org/dataoecd/12/5/42578681.pdf*

Hoeckel, K. (2010), *Learning for Jobs. The OECD Review of Vocational Education and Training. Austria,* OECD, Paris. Available at: *www.oecd.org/dataoecd/29/33/45407970.pdf*

Hoeckel, K., and R. Schwartz (2010), *Learning for Jobs: OECD Reviews of Vocational Education and Training: Germany,* OECD, Paris. Available at: *www.oecd.org/dataoecd/9/6/45668296.pdf*

Kis, V., *et al.,* (2008), *Learning for Jobs. The OECD Review of Vocational Education and Training. Hungary,* OECD, Paris, Available at*: www.oecd.org/dataoecd/24/27/41738329.pdf*

Kis, V., S. Field (2009), *Learning for Jobs. The OECD Review of Vocational Education and Training. Chile: A First Report,* OECD Paris. Available at: *www.oecd.org/dataoecd/33/13/44167258.pdf*

Kis, V., K. Hoeckel and P. Santiago (2009), *Learning for Jobs. The OECD Review of Vocational Education and Training. Mexico,* OECD, Paris. Available at: *www.oecd.org/dataoecd/28/37/43277304.pdf*

Kis, V. (2010a), *Learning for Jobs. The OECD Review of Vocational Education and Training, Belgium Flanders,* OECD, Paris.

Kis, V. (2010b), *Learning for Jobs. The OECD Review of Vocational Education and Training. Ireland,* OECD, Paris. Available at: *www.oecd.org/dataoecd/2/6/44592419.pdf*

Kuczera, M., *et al. (2008a), Learning for Jobs. The OECD Review of Vocational Education and Training. Norway,* OECD, Paris. Available at: *www.oecd.org/dataoecd/45/34/41506628.pdf*

Kuczera, M., *et al.* (2008b), *Learning for Jobs. The OECD Review of Vocational Education and Training. Sweden,* OECD, Paris. Available at: *www.oecd.org/dataoecd/26/55/40755122.pdf*

Kuczera, M., V. Kis and G. Wurzburg (2009), *Learning for Jobs. The OECD Review of Vocational Education and Training. Korea,* OECD, Paris. Available at*: www.oecd.org/dataoecd/53/49/42689417.pdf*

Kuczera, M. (2010), *Learning for Jobs. The OECD Review of Vocational Education and Training. Czech Republic*, OECD, Paris. Available at: *www.oecd.org/dataoecd/50/28/44496125.pdf*

Kuczera, M., S. Field (2010), *Learning for Jobs. The OECD Review of Vocational Education and Training. Options for China*, OECD, Paris. Available at: *www.oecd.org/dataoecd/36/36/45486493.pdf*

OECD (2007), *PISA 2006: Science Competencies for Tomorrow's World, Volume 1: Analysis*, OECD, Paris.

OECD (2009), *Education at a Glance 2009*, OECD Paris.

Glossary

Main concepts

Apprenticeship: We follow the definition given by Ryan, (2000) as "...a formal, structured programme of vocational preparation, sponsored by an employer, that juxtaposes part-time off-the-job instruction with on-the-job training and work experience, leads to a recognised vocational qualification at craft or higher levels, and takes at least two years to complete. In continental Europe, vocational and general education form part of the package and apprenticeship is treated as part of vocational education, usually at upper secondary level".

Benefits: The benefit*s* to employers of providing workplace training are of two main types. The *productive benefit* is the benefit obtained from the productive work of the trainee. The *recruitment benefit* is the value to the employer of reliable information about the capacities of the trainee – supporting efficient recruitment.

Practical and theoretical vocational education and training: Typically VET involves both knowledge (theoretical understanding) and practical skills. For example a baker needs to understand how yeast works and an electrician needs to understand the physics of electricity. This corresponds to *vocational theory*. In addition VET involves learning *practical skills*: how to do things such as baking bread, or re-wiring a house. These *practical vocational skills* are supplemented by *practical generic skills* covering a range of soft and harder skills associated with a wide range of jobs. These would include skills like dealing with customers, and dealing with accounts and government regulations.

Standardised national assessment framework: A standardised national assessment framework aims to provide a consistent method to assess the learning outcomes for VET students and thereby to ensure that the same mix of competences have been acquired at the same level in different learning contexts.

Teachers and trainers: Vocational trainers are those, whether in VET institutions or workplaces, who are primarily responsible for imparting *practical vocational skills*, and *vocational teachers* are those who are primarily responsible for *vocational theory*. In addition, many VET institutions also contain *general teachers* who are responsible for general subjects such as mathematics, or second languages. In practice the divisions between different types of teacher and trainer will work very differently in different countries and the boundaries are often blurred.

Vocational education and training: includes education and training programmes designed for, and typically leading to, a particular job or type of job. It normally involves practical training as well as the learning of relevant theory. It is distinct from (academic) education – for example in mathematics, which is relevant to a very wide range of jobs. In the United States, the usual term for vocational education and training is *career and technical education* (CTE). Education and training for some high-level professions such as medicine and law meets the definition but is not normally described as VET.

VET may be divided into initial and continuing VET. *Initial VET* includes programmes mainly designed for and used by young people (we propose those under 30) at the beginning of their careers and commonly before entering the labour market. *Continuing VET* is all other sorts of VET, including enterprise training of employees, and training provided specifically for those who have lost their jobs.

These definitions and distinctions inevitably leave some blurred edges, since programmes can meet some of the relevant criteria but not all of them (for example programmes designed for direct labour market entry but which rarely result in that outcome).

VET institutions: These are providers of vocational education and training, including schools, training institutions, colleges and private providers but excluding workplace training provided by companies.

Glossary of terms used in the international survey of VET systems

Accreditation: A quality assurance procedure which monitors the quality of teaching and learning and results in a decision as to whether a VET provider or vocational programme meets a threshold standard.

Accreditation of enterprises providing practical training: Refers to official recognition concerning the contents and standards of practical training in the workplace.

Allowances for a training period: Funding channelled directly to individuals in training; cover part of the opportunity costs of participation in training.

Assessment: A quality assurance procedure which monitors the quality of teaching and learning and results in a graded judgment about the quality of a VET provider or programme. Assessment is also frequently called evaluation.

Audit: A quality assurance procedure that focuses more on the internal mechanisms adopted by a VET provider to monitor and improve its teaching and learning quality, rather than the direct monitoring of its quality. It also checks the extent to which the VET provider is achieving its own explicit or implicit objectives.

Block release basis: Practical vocational training/general academic VET provided without interruption during a few weeks or months.

Census: The process of obtaining information about every member of a population.

Collective agreement: A written agreement, made between the employer and the employees, which sets out terms and conditions of employment (such as wages, hours of work, working conditions and grievance-procedures).

Continuing education: Covers the learning activity of those returning to education after having left initial education. Continuing education activities include: the activities that involve studies with subject content similar to regular educational programme; or the underlying programmes which lead to similar potential qualifications as corresponding regular educational programmes and the full-time equivalent duration of the programme is at least one semester. (OECD, 2004)

Day release basis: Alternating a part of a week in practical training with general academic instruction (*e.g.* three days in practical training in an enterprise and two days in general academic VET in school).

Direct subsidy: A direct cash transfer from public sources to enterprises providing practical vocational training (*e.g.* state contribution to the training fund, grants).

Employers contribution to VET cost: Includes monetary costs directly channelled to VET (*e.g.* contribution to training levy fund) and resource costs linked to the provision of practical training.

External evaluation: Teacher/trainer work evaluated by an external body.

Financial incentives to firms to train: Refers to financial support to firms that invest in training of their employees, including both direct and indirect subsidies from public and non-public sources.

Full practical training: Practical training component representing 90% or more of the total study over the whole length of the programme.

Full-time/Part-time: Students should be classified as full or part-time on the basis of study load of the student. Study load should be measured in terms of: a) *the academic value or progress* which the study represents (A full-time student is one whose study represents an academic value that would typically be achieved with a full-time commitment of time by the student and if they would normally be expected to be in the programme for the entire school year. A full-time commitment of time equates to 75% or more of the typical school week. Otherwise the student should be recorded as a part-time.), and/or b) in terms of *student' time commitment* (A full-time student is one whose commitment of study time, both institution and non-institution based, represents 75% or more of the school week and if the student would normally be expected to be in the programme for the entire school year.) (OECD, 2004)

Funding formulas: Refers to a formally defined procedure (a formula) used by government authorities to determine the level of public funds allocated to VET education institutions based on a set of predetermined criteria, which in most cases are input-, output- or performance-oriented.

Funding on a historic basis: Refers to budgeting determined according to spending in previous years and estimates of the cost of activities planned for the future.

General academic VET: Part of a vocational programme providing students with general education that usually takes place in educational institutions *(e.g.* general and technical courses such as physics, chemistry, chemistry for nurses, mathematics, language courses).

General academic VET and practical training take place alongside: General academic VET courses and practical training courses are provided on the same day.

*Grant: R*efers to financial support awarded to a student that does not have to be repaid. Tuition allowances and tuition waivers should be considered as grants. Only publicly-funded grant schemes provided to VET students attending public or private institutions should be considered. Grant schemes funded from private sources (such as grants awarded by foundations) are excluded.

Grants based on central budgets: Governments use general budgets to finance training activities. (OECD, 2005)

Grants from levy training funds: Governments and sectoral bodies collect training levies from firms which are then disbursed to eligible firms that have requested training grants. (OECD, 2005)

Income tax deduction: Training expenditures that are deducted from an individual's taxable income. (OECD, 2005)

Indirect subsidy: The term would cover any form of subsidy that does not involve a direct transfer, such as for example a tax deduction and exemption.

Individual learning accounts: A bank account to be used only for adult learning purposes. Normally, multiple stakeholders including the government, adults, firms, and sectoral bodies invest in the account. (OECD, 2005)

Individual loans: Bank loans for adult learning purposes. Government usually guarantees the loans in case of defaults. (OECD, 2005)

Initial education: Initial education typically takes place in organised, structured settings and is usually provided in the formal systems of schools, colleges and universities within a country. It includes early childhood education and care programmes, through compulsory schooling and beyond to post-compulsory education. Initial education typically follows a continuous path or paths of progression prior to initial entry into full-time employment. Programmes offered as part of initial education can also be regarded as regular educational programmes. (OECD, 2004)

Internal evaluation: Teacher/trainer work is evaluated by a VET provider (*e.g.* by school principal, by enterprises providing training).

Labour force survey: A survey used to collect quantitative information in a given population about labour market.

Leaver survey: A survey of VET graduates at some point of time after graduation.

Levy-based-train-or-pay scheme: A system under which only firms that do not reach the threshold of training expenditure are obliged to pay. (OECD, 2005)

Loan: Refers to financial support awarded to a student that has to be repaid (including loans that may be converted into grants). Only publicly-funded and/or publicly-guaranteed loan schemes provided to VET participants should be considered. Loans funded from private sources (such

as loans provided by commercial banks without public subsidy or guarantee) should be excluded.

Local level: At the level of municipality, district, commune.

Longitudinal survey: The study of a group of individuals at regular intervals over a relatively long period of time.

Mandatory basis for social partners' involvement: Refers to a legal obligation to involve social partners in the process affecting VET, regardless whether this right is exercised or not.

Mechanisms for involvement of social partners in VET: A set of rules and organisations shaping and regulating collaboration of social partners in the field of VET at national, regional, local and sectoral level, regardless if the involvement is on a mandatory or voluntary basis. For example, participation of industry, employees' representatives in councils, committees, boards that advise/are consulted by relevant authorities on issues related to VET.

Modular programme: A programme divided into separated learning modules/units, each associated with a certain amount of learning and leading to some kind of qualifications (credits, part of qualifications). Modularised courses allow people to choose between different course options, and can provide some freedom in the sequencing and speed at which the modules required for a qualification can be completed. Within the framework defined for each qualification, young people can compose their own profiles rather than complete a fully prescribed set of courses according to a prescribed schedule. (OECD, 2000)

Payback clauses: Firms and individuals establish a contract that specifies a period during which trained person is obliged to pay back training costs after voluntary quit. (OECD, 2005)

Payroll tax deduction/exemption: Deduction/exemption on an amount that an employer withholds and/or pays on behalf of their employees based on the wage or salary of the employee.

Payroll tax-based training grants: Grants from a levy training fund to individuals who request training activities. (OECD, 2005)

Policy framework: Refers to national or regional laws or regulations regarding a given issue.

Practical vocational training: The part of a vocational programme (in initial/continuing VET) that provides students practical experience related to their field of study. May take place in educational institutions *e.g.* upper secondary schools, and other non educational entities such as enterprise-

based training centres or enterprises (OECD, 2004, p.56 – definition of educational institution). For example, *practical vocational training* will refer to courses of cooking in school classes adapted to this end. It will also refer to training in cooking in the real work environment such as in a restaurant (some countries use the term "apprenticeship" to designate practical vocational training in enterprises).

Practical vocational training in the workplace: Practical vocational training in enterprises.

Practical vocational training provided by educational institutions: Practical training provided by educational institutions (*e.g.* upper secondary schools, training centres). Responses will depend on how countries define the educational institution. For example employer education centres in most countries are not classified as an educational institution, although a few countries do regard them in this way.

Pre-service requirements: Conditions necessary to become a teacher/trainer in VET.

Profit tax deduction: Allows firms to deduct the cost of training or more than that from their taxable profits. (OECD, 2005)

Profit tax deduction: Deduction/exemption on a taxable earning of an enterprise.

Programme at higher ISCED level: If a programme is at ISCED 3 level (usually corresponds to upper secondary education), "higher education level" according to ISCED classification would be ISCED 4 and ISCED 5.

Public and private VET institutions: VET institutions are classified as either public or private according to whether a public authority or a private entity (church, trade unions, business enterprises) has the ultimate power to make decisions concerning the VET institution's affairs. The extent to which an institution receives its funding from public or private sources does not determine the classification status of the institution as either public or private, and some institutions may be classified as private even though they are mainly funded by central/regional government authorities.

Public funding: Spending of public authorities on VET (all levels), including expenditures of ministries of education and of other ministries or equivalent institutions.

Qualification: A qualification is achieved when a competent body determines that an individual has learned knowledge, skills and/or wider competences to specific standards. A qualification confers an official recognition of skills value in the labour market and in further education and training. (OECD, 2007)

Quality assurance: Refers to systematic, structured and continuous attention to quality.

Quality control: A formal external procedure used to assure quality of teaching, learning and training in private and public institutions providing VET.

Share of costs of practical vocational training by employers: An arrangement whereby costs of practical training provision are shared among firms through monetary contribution directly channelled to practical vocational training. This excludes for example the public funding on VET via general taxation including profit taxes paid by enterprises.

Social partners: Organisations of employers and employees representing specific or sectoral interests.

Successful completion of a programme: The student has fulfilled requirements (*e.g.* as regards attendance, grades, number of credits, etc.) necessary to complete the programme that may be formally recognised with qualifications (awarding diplomas, credentials, certificates).

Tax deduction includes:

- *Payroll tax deduction/exemption*: Deduction/exemption on an amount that an employer withholds and/or pays on behalf of their employees based on the wage or salary of the employee. Governments use revenues from payroll taxes to fund such programs as social security, health care, unemployment compensation, worker's compensation

- *Profit tax deduction:* Amounts deducted from a taxable income

Teachers and trainers in VET: Personnel providing VET instruction, *i.e.* teachers/trainers involved in practical vocational training (in educational institutions and in the workplace).

Theoretical ages: Ages established by law and regulation for entry and ending of a programme. (OECD, 2004)

Theoretical duration of the programme: The standard number of years (or days, weeks or months) set out by law or regulations in which a student can complete the education programme. Theoretical duration may differ from the *typical or average duration* of the programme which reflects the time that students take in practice to complete the programme. (OECD, 2004)

Transition to a programme at the same ISCED level: Transition to a programme at higher ISCED level is not possible (*e.g.* from some ISCED 3C programmes) but a student can enter a programme at the same ISCED level (*e.g.* ISCED 3A, B) that gives an access to higher levels of education.

Tuition fees in VET: Fees paid by a student for instruction and training (including fees for training materials) in public and private VET institutions. Payments for entrance examination, special contribution for additional services such as insurance coverage should not be included.

vocational programme: A collection of educational and training activities which are organised to accomplish a pre-determined objective or the completion of a specific set of educational tasks, one of which is to equip people with skills and competences required in particular occupations or trades. vocational programmes, in addition to professional preparation, may also provide with general education and prepare for further education. For a programme to be considered as a vocational programme it should comprise at least 25% of the vocational and technical content. In comprehensive systems when students choose among general and vocational courses, vocational programmes would be these ones that enable students to choose vocational courses making at least 25% of the content of the programmes. (OECD, 2004)

VET provider: Refers to an entity which provides vocational education and/or training programmes. This may encompass a broad range of public and private institutions, from secondary schools to adult education institutions, and enterprises providing training.

VET training entirely or partly financed by enterprises: VET training financed in total or partly be enterprises, whether direct or indirect. Part financing could include the use of work-time for the training activity as well as the financing of training equipment (books, computers, CD-ROMs, etc)". (EUROSTAT, 2002)

Voucher funding: Funding that follows the student. It channels education funding directly to individuals. It gives an individual the opportunity to select the VET institution of his choice and have all or part of the tuition paid. Vouchers can be funded and administered by the government, by private organisations, or by some combination of both. The actual payments to VET providers may be calculated on the basis of input/output criteria.

Work placement: Any kind of placement with employers in the framework of the study programme, regardless of its duration and content. The term refers both to short placements in which students get a "flavour" of real work and to longer-term training with employers during which students carry out tasks similar to those of employees.

References

EUROSTAT (2002), *European Social Statistics, Continuing Vocational Training Survey* (CVTS2), Luxembourg.

OECD (2000), *From Initial Education to Working Life: Making Transitions Work*, OECD, Paris.

OECD (2004), *Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications*, OECD, Paris.

OECD (2005), *Promoting Adult Learning*, OECD, Paris.

OECD (2007), *Qualifications Systems: Bridges to Lifelong Learning*, OECD, Paris.

Ryan, P. (2000), "The Institutional Requirements of Apprenticeship: Evidence from Smaller EU Countries", *International Journal of Training and Development*. Vol. 4, No. 1, pp 42-65.

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Learning for Jobs

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

OECD is conducting country VET policy reviews in Australia, Austria, Belgium (Flanders), the Czech Republic, Germany, Hungary, Ireland, Korea, Mexico, Norway, Sweden, Switzerland, the United Kingdom (England and Wales) and the United States (South Carolina and Texas). A first report on Chile and a short report on the People's Republic of China have also been prepared.

The initial report of Learning for Jobs is available on the OECD website: ***www.oecd.org/edu/learningforjobs***.

The full text of this book is available on line via this link:
www.sourceoecd.org/education/9789264082236

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