Learning for Jobs

OECD Policy Review of Vocational Education and Training

INITIAL REPORT

Simon Field, Kathrin Hoeckel,
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October 2009

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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Foreword

As the global economy emerges from the shadow of the crisis, it is time to think of new sources of growth creating the conditions for sustainable and balanced economic development that will deliver the quality jobs we need. The OECD is committed to working closely with governments all over the world to achieve this goal.

Vocational education and training for young people has a big part to play in making this a reality. This report sets out some practical steps that countries can take in partnership with employers – for example to ensure that vocational teachers and trainers have a good understanding of modern industry, and to develop workplace training as an integral element of most vocational programmes. Several countries have made strides in expanding upper secondary and tertiary education, but many still report skill shortages in technical and professional fields.

For vocational training to live up to its potential, we need a modernised approach, with highly professional teachers and trainers, preparing young people for the demanding jobs of the future. We need to recognise that as economies evolve, new jobs will emerge, in the environmental industries, in health care and elsewhere. The training needs to deliver not just a first job, but the adaptability and capacity to learn other skills, to allow for an evolving career. Above all, we need 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 initial OECD report is linked to 17 individual country studies, some of them complete and published, others – like those on China, Germany and the United States – still to come. They illustrate the rich international diversity in vocational systems. It is a field in which countries have much to learn from each other. The aim of our work is to help with this task.

Angel Gurría
Secretary-General of the OECD

ACKNOWLEDGEMENTS

In the reviewed countries, we are extremely grateful to the national authorities for their help and advice in facilitating the country visits, and to all those who contributed, particularly the national co-ordinators – in Australia Oon Ying Chin, Lorelle Johnson and Astrida Upitis; in England and Wales Roger Cotes, Susan Edwards and Andrew Price; in Hungary Zsófia Lux; in Korea Eunsang Cho; in Mexico Deni Sanchez and Juan Manuel Martínez de la Calle; in Norway Cecilia Lyche; in Sweden Erik Henriks; and in Switzerland Adrian Wüest.

We are particularly grateful to the experts who were part of the individual country review teams. These were Giorgio Brunello, Mark Cully, Jim Davidson, Luisa Ferreira, Norton Grubb, Gábor Halász, Nancy Hoffman, Troy Justesen, Stefan Wolter and Thomas Zwick.

Within the OECD, the work is heavily indebted to a number of colleagues, including Susan Copeland, Mihály Fazekas, Deborah Fernandez, Jennifer Gouby, Moonhee Kim, Afonso Mendoza-Reis, Deborah Roseveare, Paulo Santiago and Greg Wurzburg.

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The message of Learning for Jobs

For many learners in vocational education and training (VET) and for many employers, the gulf between learning and work is large. Learning is often seen as abstract, classroom-based and academic. The world of work is seen as concrete, with bosses and customers, profits and machinery. These are stereotypes, but with a grain of truth. Institutions providing VET have a style and ethos quite different from the world of work with different goals, incentives and constraints. And yet, despite the separation, the task of VET remains that of meeting labour market needs – of providing *learning for jobs.*

Learning for Jobs: the OECD work programme

This exercise seeks to help countries increase the responsiveness of VET systems to labour market requirements. It aims to improve the evidence base, identify a set of policy options, and recommendations. It looks primarily at initial VET for young people in schools, workplaces, colleges and other providers.

A programme of analytical work draws on evidence from all OECD countries. It includes an international questionnaire on VET systems, literature reviews of previous OECD studies and the academic literature on topics such as costs and benefits of VET, and analysis of available VET indicators.

Country policy reviews are being 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 will also be conducted in Chile and the People's Republic of China. Canada, Denmark, Finland and the Netherlands have also contributed financially to the work.

The results of both the analytical work and the country reviews will feed into the comparative report. This initial version[1] is being made available on the OECD website. The final comparative report, drawing together all the conclusions of the study, will be published in late 2010.

This policy review of VET was conducted simultaneously with another OECD exercise on "systemic innovation in VET".[2] This exercise included a number of case studies in Australia, Denmark, Germany, Hungary, Mexico, and Switzerland.

For further documents and details of the work programme see: *www.oecd.org/edu/learningforjobs*

1. Field, S., Hoeckel, K., Kis, V. and Kuczera, M. (2009). *Learning for Jobs: OECD Policy Review of Vocational Education and Training. Initial Report.* OECD, Paris.
2. OECD (2009) *Working Out Change: Systemic Innovation in Vocational Education and Training*. OECD, Paris.

This report makes proposals to bridge this gulf, to connect vocational education and training to the world of work. The mix of provision therefore needs to balance the needs of employers with the preferences of students. Bridges are also needed for teachers and trainers, to bring teaching skills to trainers in workplaces, and to ensure that vocational teachers and trainers in schools and colleges are familiar with the needs of the modern workplace. The most direct bridge is to bring learning directly into workplaces, in apprenticeships and other forms of workplace training.

None of these bridges can be built without the right supports. The most central of these has to be 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. Good data are critical, so that the impact of learning on labour market outcomes can be identified. That same information, through strong career guidance, can inform young learners about vocational pathways into the world of work.

Potentially VET plays a key role in determining competitiveness. Since OECD countries cannot compete with less developed countries on labour costs, they will 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. Many of the unskilled jobs which existed in OECD countries a generation ago are fast disappearing. Although general education also has its claims, VET is frequently seen as the right vehicle for upskilling those who would otherwise be unskilled and ensuring a smooth transition into the labour market.

A global economic crisis developed while this report was in preparation, casting a new and sometimes sharply different light on the issues examined. The size and impact of the crisis varies from country to country, but potentially it could have large effects. Some apprentices are being made redundant midway through their training. 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 should government support initial vocational education and training?

Workplaces provide a strong learning environment. Why not then leave vocational training to employers and reserve basic state-supported education for numeracy, literacy and general subjects like the sciences, history and geography? One reason is that, in the absence of initial training, industry, left to its own devices, may not have incentives to provide sufficient training. A second reason is that public investment in initial VET can pay off in terms of labour market returns. More specifically:

- In perfectly competitive labour markets, while firms provide firm-specific training to their employees, they have no incentive to provide general training, since the benefits of general training will accrue to the employee, even when the investment in training would pay off handsomely in terms of productivity. Despite market imperfections, this remains a problem.

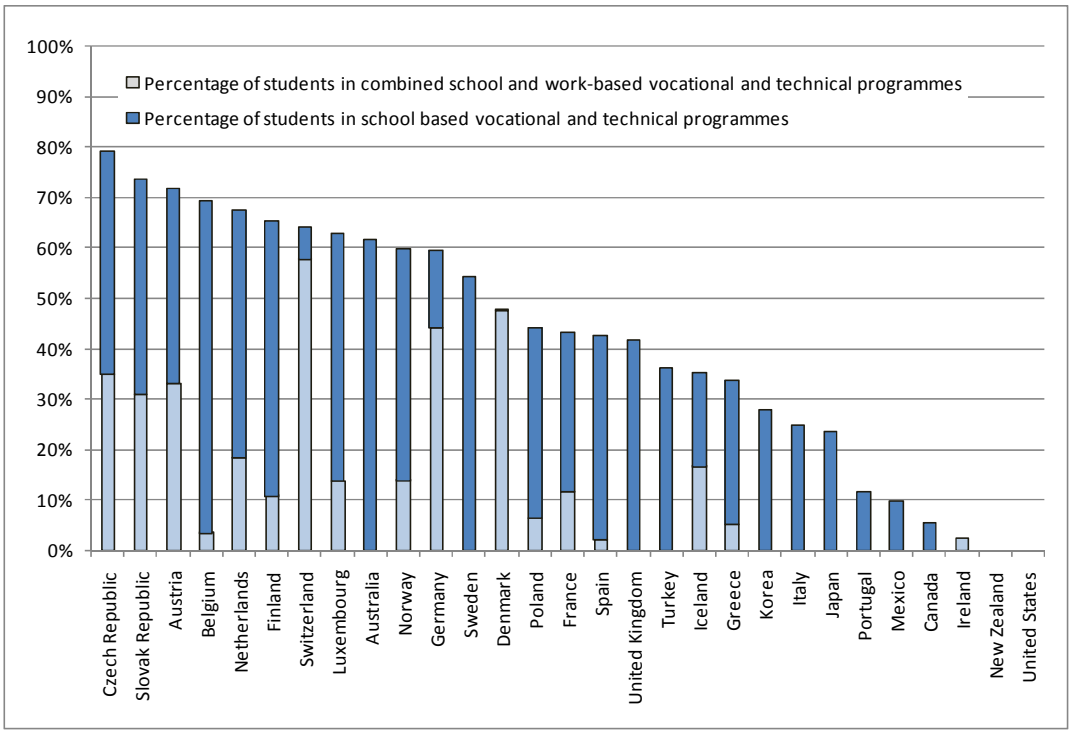
- In more regulated labour markets, where the initial hurdle required to enter employment is a high one, young people may need initial training to make themselves more "job ready" before entering the labour market. Legal wage minima, implicit minimum wages set by collective bargaining, and strong employment protection legislation all make new employees expensive and risky, and therefore make employers reluctant to take on untrained employees.
- Well-educated individuals participate more often in adult education and training. 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. On grounds of equity as well as efficiency, it may therefore be necessary to assist these individuals to develop job-relevant competencies before they enter the labour market.
- The key test is whether VET for young people pays off in the labour market. Under some circumstances it does so. In the very different circumstances of the United States and Switzerland, different studies show positive labour market returns from upper secondary VET.

Diverse ways of meeting human capital needs

The diversity of national VET systems is well-recognised, particularly the contrast between systems where VET plays a very central role in the initial education of young people – for example in Austria, where 70% of young people undertake VET at upper secondary level – and other systems, like the United States, where very few undertake a designated VET programme (see Figure 1). Less well-understood is the great variety within families of VET systems, for example the radically different approaches to upper secondary VET in Sweden (where upper secondary VET involves a limited amount of workplace training) and in Norway, where upper secondary VET is commonly linked to an apprenticeship. Another element of this diversity is the relative mix of initial and tertiary VET in the system as a whole. For example, in Australia much initial training of young people (primarily ISCED levels 3 and 4) occurs once they have left school and entered the workforce. While this diversity is a challenge to international comparison, requiring an acute sensitivity to national contexts, it remains possible to identify common problems and common solutions to those problems across countries.

Trends in the supply of, and demand for VET provision are also very diverse. At upper secondary level some countries have been expanding VET provision, while in others it is diminishing. At post-secondary and tertiary level the global patterns are even less clear, given the weak frameworks for identifying and measuring VET at these levels.

Figure 1. 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: In Hungary, the Ministry of Education assesses the share of students participating in vocational training schools/institutions as 23% in 2007/8.

Many things contribute to the flow of human capital to meet labour market needs These include not only education and training systems, but also enterprise training, informal learning, migration flows, and a wide range of factors affecting labour force participation at different ages – retirement and invalidity arrangements, childcare provision and maternity and paternity arrangements. This has two implications. First, in the face of any given labour market need, many policy instruments are 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, for any government to make these choices requires high quality co-ordination across the range of government departments responsible for these different policy areas. This is a major challenge.

Analytic work on VET has been conducted in universities, national institutes and in some international bodies including UNESCO, ILO, the European Commission and its agencies. But there remain many big gaps. One is comparative policy analysis, undertaken across a range of different countries to identify policy solutions that work. The second big gap is data. ISCED remains a weak instrument for identifying VET in secondary and tertiary education, so data on the percentage of the cohort that enters VET remains patchy.

Meeting the needs of the labour market

VET systems need mechanisms to make sure that the number of people trained in different occupations matches labour market needs. While student preferences on their own do not always adequately reflect labour market needs, it is very hard to plan provision to meet labour market needs. Forecasting the exact skills needed in a given labour market is hazardous. Ideally, VET 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. Overall provision needs to balance student preference and employer demand.

But the balance also depends in part on funding. If students pay the full costs of provision they may reasonably expect their preferences to play a dominant role. Conversely, where employers fund all 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. Efficiency requires these models to reflect the mix of benefit obtained from the training.

Within individual VET programmes, a good balance between generic and specific skills is important. VET graduates need the occupationally specific skills that will allow them to enter skilled jobs without lengthy additional training. They also need generic transferable skills to carry them through their working career, including the ability to adapt to fast-changing workplace requirements.

Meeting labour market needs: OECD recommendations

- Provide a mix of VET programmes that reflect both student preferences and employer needs. One effective way of doing so is through an apprenticeship system, where a market balances supply and demand.
- For VET beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
- 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 occupationally-specific skills that meet employers' immediate needs.

Effective teachers and trainers

Many countries are facing a shortage of teachers and trainers in VET institutions as the current workforce ages. Some teachers and trainers also lack recent workplace experience. In industry, a different problem emerges. Trainers (including the supervisors) of apprentices and trainees in companies often have no specific pedagogical training. Often, VET institutions need stronger links with industry, while workplace trainers need more pedagogical training.

One very important way of ensuring quality and consistency in VET as in other education programmes is to provide a high quality assessment of graduates. There are demonstrated advantages in evaluating student performance in VET through standardised

frameworks of national assessment. Such national arrangements can improve student performance, enhance the signalling value of qualifications, be more cost-effective than locally organised examinations, facilitate recognition of informal and non-formal learning, and promote flexibility and innovation in learning.

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 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. Allow those with industry skills to enter the workforce of VET institutions through effective preparation.
  - Take advantage of the current economic slowdown to encourage those leaving industry with good practical skills to enter the workforce of VET institutions.
- Provide appropriate pedagogical and other preparation for trainers (including the supervisors) of trainees and apprentices in workplaces.
- 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 and enhance their pedagogical skills.
- Adopt standardised national assessment frameworks to underpin quality and consistency in training provision.

Taking advantage of workplace training

Workplace training for young people has compelling advantages. It provides a strong learning environment for both soft and hard skills; it facilitates recruitment by allowing employers and potential employees to get to know each other; it contributes to the output of the training firm; and it links training provision to a direct expression of employer needs. Collectively, these arguments are so powerful that all VET systems should aim to make substantial use of workplace training.

Workplace training needs to be complemented by training off-the-job. Some knowledge needed for an occupation and some basic practical skills are better learnt in classroom settings and workshops. Practical training involving dangerous or expensive equipment is less risky in a simulated setting and the slower-pace of a classroom or workshop setting can give students the time to develop and refine their skills. When the economy turns downward, it is sometimes hard to convince an employer worried by the immediate survival of the enterprise to take an interest in training. In the context of the current economic crisis, special measures may be necessary to sustain workplace training and, where necessary, to support it with off the job training.

Apprenticeship – one common model of workplace training – can be an outstandingly effective form of vocational training. An ideal apprenticeship system will involve high quality training providing both transferable and occupation-specific skills, attractive to a wide range of employers, and relevant and appealing to apprentices. Countries use many

types of financial incentives to encourage firms to offer workplace training, including direct subsidies, special tax breaks and training levies.

Workplace training: 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 workplace training is of good quality, through the provision of a clear contractual framework for apprenticeships, and through an effective quality assurance system.
- Balance workplace training by other provision (*e.g.* training workshops in schools or other VET institutions) where other learning environments work better, or where workplace training is not available.
- Devise effective responses to the current economic crisis, to sustain workplace training, and cope with increased demand for full-time VET.

Tools to support policy

Good tools are needed to make effective policy. The development and implementation of policy depends on well-informed people, working with different stakeholders through strong institutions.

VET policy development and implementation also requires engagement with employers and unions. Their involvement helps to ensure that the content of VET – what is taught in VET schools and at the workplace and how exams are designed – is relevant to the labour market. Typically this means a set of interconnected institutions at national, regional and sectoral levels, with clear responsibilities for different elements in the VET system.

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.

There are various ways to improve data on labour market outcomes. 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.

One very important way of making learning respond to labour market needs is to provide information about outcomes to students. While informal sources such as family and friends may provide useful information, high quality career guidance, well-supported by labour market data, is indispensable.

Policy tools: OECD recommendations

- Engage employers and unions in VET policy and provision and construct effective mechanisms to that end.
- Collect good data on the labour market outcomes of VET, and provide the capacity to analyse and disseminate that data.
- Provide career guidance accessible to all, informed by knowledge of labour market outcomes.

Chapter 1

Introduction

In recent years, vocational education and training (VET) has become a policy priority in OECD countries. There are three main reasons. First, VET has an important economic function, providing trade, technical and professional skills for the workforce. Second, there are signs of emerging strains in VET systems, including a lack of workplace training places and a shortage of vocational trainers and teachers. Third, VET has been neglected in the past, certainly by analysts, but also to some extent in the policy arena. In the light of this strategic priority, the OECD launched the current policy review. It involves analytic work and 15 country reviews over the period 2007-10, leading in 2009 to this initial report and a final publication in 2010.

Many vocational skills, particularly practical skills, can in principle be learnt on the job by employees. But firms may be unwilling to invest in training for different reasons, because they fear poaching, or are too small and specialised to provide broad enough training to give a young person a good start in working life. High minimum wages and other labour market regulations may make it more attractive for an employer to hire trained workers than to train raw recruits. For these reasons and others, it often makes sense for governments to provide vocational training to young people. This report is primarily concerned with initial VET, meaning VET programmes designed primarily for young people – but including programmes at both secondary and post-secondary level. It touches less directly on training for employees. Its agreed focus is on how VET systems can respond better to labour market needs.

While countries can learn much from each other in designing their VET systems, lack of data and diversity of VET systems makes international comparison hard. This comparative review therefore aims to enlarge the evidence base on what works in VET. It is designed to help governments shape their policies so that they teach the right mix of skills to meet labour market needs, so that they prepare their teachers and trainers well, and that they make full and effective use of workplace training. In addition, countries need to fully engage employers and trade unions to support policy development and implementation.

1.1 How the OECD review came about

Learning for Jobs: bridging the gap between education and working life

For many learners in vocational education and training (VET, for a definition see Box 1.1) and for many employers, the gulf between learning and work is large. Learning is often seen as abstract, classroom-based and academic. The world of work is seen as concrete, with bosses and customers, profits and machinery.

Those are stereotypes of course, but with a grain of truth. Institutions providing VET have a style and ethos quite different from the world of work, with different institutional goals, different funding incentives and different constraints. And yet, despite the separation, the task in VET institutions remains that of meeting labour market needs – of providing *learning for jobs*. Countries are trying to do this in different ways. They are building partnerships with industry to ensure that VET provision is relevant to their needs. They are developing programmes for workplace experience and training. They are working with industry to identify new technical skills and build them into qualifications systems and VET provision. They are following up learners into the labour market to see if, in fact, the learning has led to relevant jobs.

Box 1.1 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 but is not normally described as 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. 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 but which rarely result in that outcome).

This is the *initial* report of the comparative study of Learning for Jobs. The *final* comparative report will be published in book form in late 2010 (see Box 1.2).

Box 1.2 Learning for Jobs: the OECD VET study

This study seeks to help countries increase the responsiveness of VET systems to labour market requirements. It aims to improve the evidence base, identify a set of policy options, and develop tools to appraise VET policy initiatives. It looks primarily at initial VET in schools, workplaces and colleges and other providers.

A programme of analytical work draws on evidence from all OECD countries. It includes an international questionnaire on VET systems, literature reviews of previous OECD studies and the academic literature on topics such as costs and benefits of VET, and analysis of available VET indicators.

Country policy reviews are being 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 will also be conducted in Chile and the People's Republic of China. Canada, Denmark, Finland and the Netherlands have also contributed financially to the work.

The results of both the analytical work and the country reviews will feed into the comparative report. This initial version is being made available on the OECD website. The final comparative report, drawing together all the conclusions of the study will be published in late 2010.

For further documents and details of the work programme see *www.oecd.org/edu/learningforjobs*.

This policy review was conducted simultaneously with another OECD exercise on 'systemic innovation in VET', undertaken by the OECD Centre for Educational Research and Innovation (OECD, 2009). This exercise included case studies in Australia, Denmark, Germany, Hungary, Mexico, and Switzerland.

The current global economic crisis developed while this report was in preparation. The size and impact of the crisis varies from country to country, but potentially it may have significant effects on VET systems. One of the most urgent challenges, faced by a number of countries is how to cope with apprentices made redundant midway through their training. Hard pressed employers concerned by their immediate survival may be less willing to offer workplace training. Fewer jobs will mean that potential learners are keener to undertake full-time education and training, but public expenditure pressures, sharpened by the crisis, may make it much harder to accommodate the increasing demand. Some opportunities may nevertheless emerge – for example to redeploy the practical skills of unemployed professionals as trainers. These immediate pressures on VET systems are currently under examination as part of this OECD review (Brunello, 2009). Some of the conclusions of this initial report are therefore tempered by the need to take full account of a changing economic and labour market environment.

Why OECD countries wanted the review: the Copenhagen meetings

In 2005 in Copenhagen the OECD brought together the chief civil servants of education ministries of OECD countries and asked them to identify their most important policy priorities. The answer they gave surprised many, for it was neither schools nor

universities, but, in fact, vocational education and training. But if in Copenhagen[1], the importance of VET was underlined, the reasons were diverse, as emerged in the subsequent informal OECD ministerial meeting on VET which also took place in Copenhagen in January 2007. Three factors stand out as reasons for the growing interest of policy makers: *economics*, *strains* in the system and *previous neglect*.

On *economics*, many OECD countries worry about ever-increasing global competition. Since OECD countries cannot compete with less developed countries on labour costs, they will 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, and the future is particularly bleak for the unskilled in rich countries, since they are so vulnerable to competition from low-wage countries. And, although general education also has its claims, VET is frequently seen as the right vehicle for upskilling those who would otherwise be unskilled and ensuring a smooth transition into the labour market.

And then there are *strains.* 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. In Korea for example, around three-quarters of those who undertake upper secondary VET subsequently enter tertiary education, challenging the rationale for these programmes as a direct means of entering the labour market. 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. This factor has led, in the United States, to a new terminology of "career and technical education" in preference to "vocational education and training".

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 been relatively un-analysed. Analysts sometimes find VET dull or incomprehensible, perhaps because they themselves have rarely received their education there. The perceived status of VET has been a barrier to people's engagement in the sector and how it has been viewed analytically. One objective of this review is to remedy this past neglect.

Clearly many vocational skills, particularly practical skills, are learnt in the workplace by employees either informally or through formal training. Chapter 4 argues that there are many advantages to workplace training. Some skills requirements are volatile and driven by rapid technological change – and such requirements are best met through continuous education and training. 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. There are a number of answers:

- First, the traditional economic argument is that, while firms provide firm-specific training to their employees, they have no incentive to provide general training, since the benefits of general training will accrue to the employee, even when the investment in training would pay off handsomely in terms of productivity

[1] Chair's Summary from the Meeting of the Education Chief Executives, Copenhagen, 22 to 23 September 2005, *www.oecd.org/dataoecd/56/34/35557211.pdf.*

(Becker, 1975). The more productive trained employees can demand a higher wage, since they can sell their productive skills to the highest bidder. While all kinds of market features mean that employers do provide general training, their incentives to do so are limited. There may also be structural problems, such as the limited training opportunities in smaller firms. One role of initial VET in schools and institutions is to compensate for these weaknesses by providing a strong initial base of vocational skills.

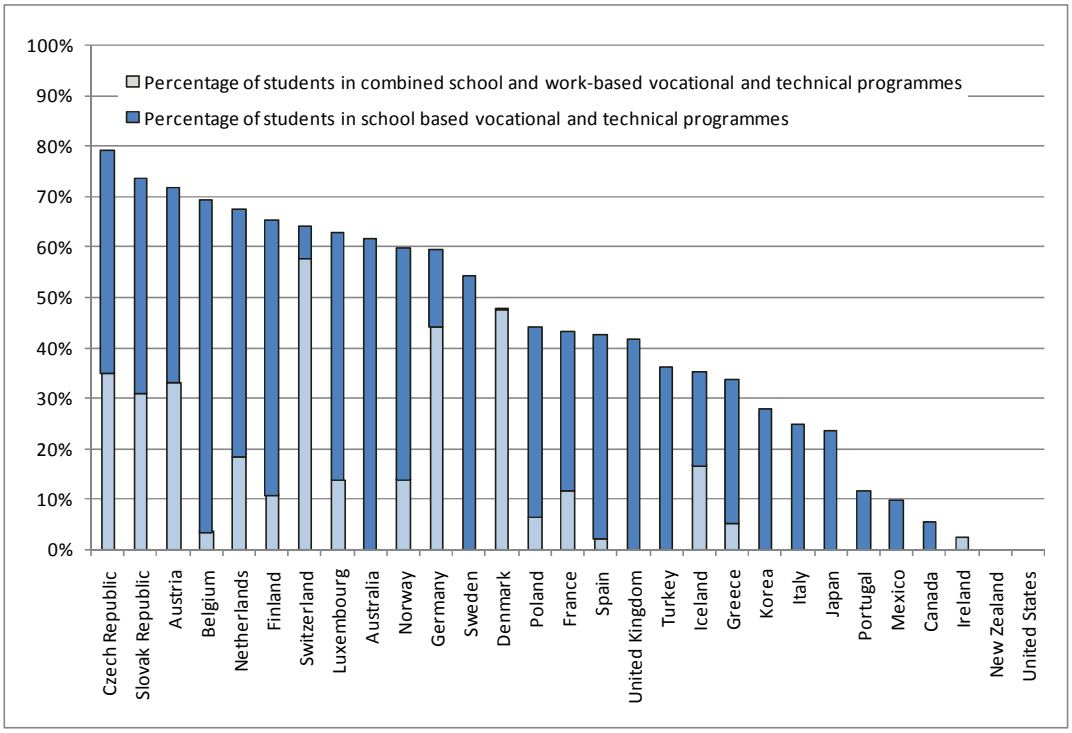
- Second, in some more regulated labour markets many employers may be unwilling to invest in training of the new recruits. In deregulated labour markets employers may be able to run, in effect, an informal apprenticeship system, by recruiting young people at low wages, training them, and retaining the most productive as long-term employees. Legal wage minima, implicit minimum wages set by collective bargaining, and strong employment protection legislation are all potential barriers to this approach. Where these barriers are high, in the more regulated labour markets, the transition of young people from school to work may be more difficult, unless they can present themselves to potential employers as "job ready". This implies that initial VET can meet this requirement.
- Third, well-educated individuals are much more likely to obtain further education and update their competencies and develop new skills over their lifetime. 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 competencies more effectively when they are still in full-time education, before they enter the labour market. The role of initial VET role would be to provide these skills.
- Finally, 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. At individual level, employee skills may promote the skills of workmates. Alongside the theoretical argument, some VET programmes pay off in the labour market. In the United States, where there is relatively little VET 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: "students on technical tracks are not likely to earn more had they chosen differently" (p. 572). 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 we approached the work

Taking account of diversity

It is a commonplace to note the heterogeneity of national VET systems, particularly the contrast between systems where VET plays a very central role in the initial education of young people – for example in Austria, where 70% of young people undertake a VET programme at upper secondary level – and other systems, like the United States, where very few undertake a designated VET programme (see Figure 1.1). In Ireland for example, there is little VET at upper secondary level, but an extensive system, including apprenticeships, above that level (see Figures 1.1 and 1.2). These data have been validated by OECD countries, but they should be used cautiously, given the difficulties attending some of the categorisations.

Figure 1.1 Vocational education and training as a share of the upper secondary sector (ISCED 3), 2006

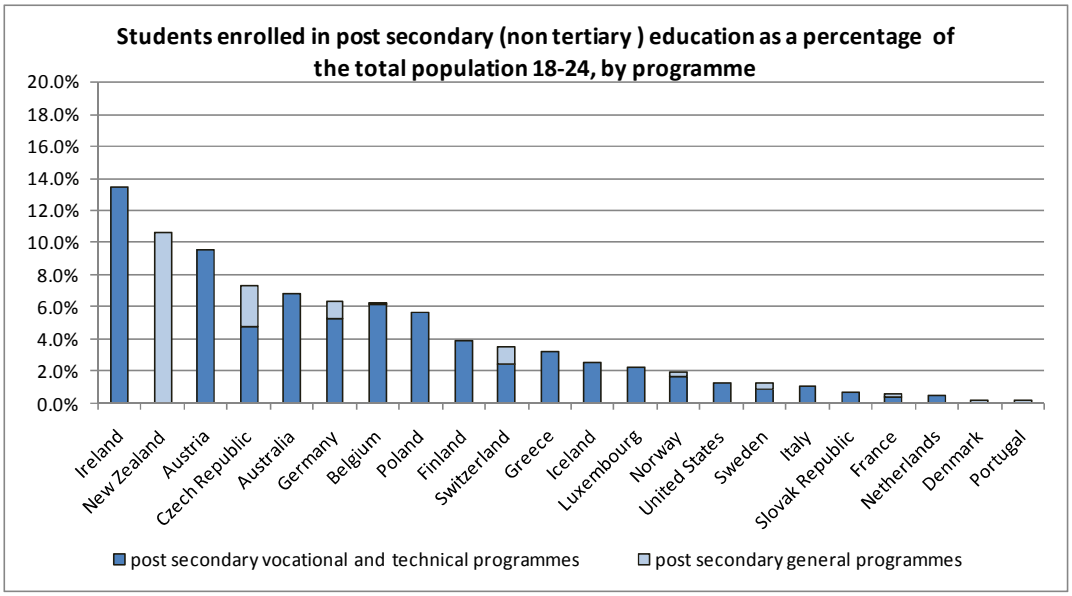


Source: OECD (2008), *Education at a Glance 2008: OECD Indicators*, Table C1.1, OECD, Paris.

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

Figure 1.2 Vocational education and training between school and university

Post-secondary students (non- tertiary) as a percentage of those aged 18-24

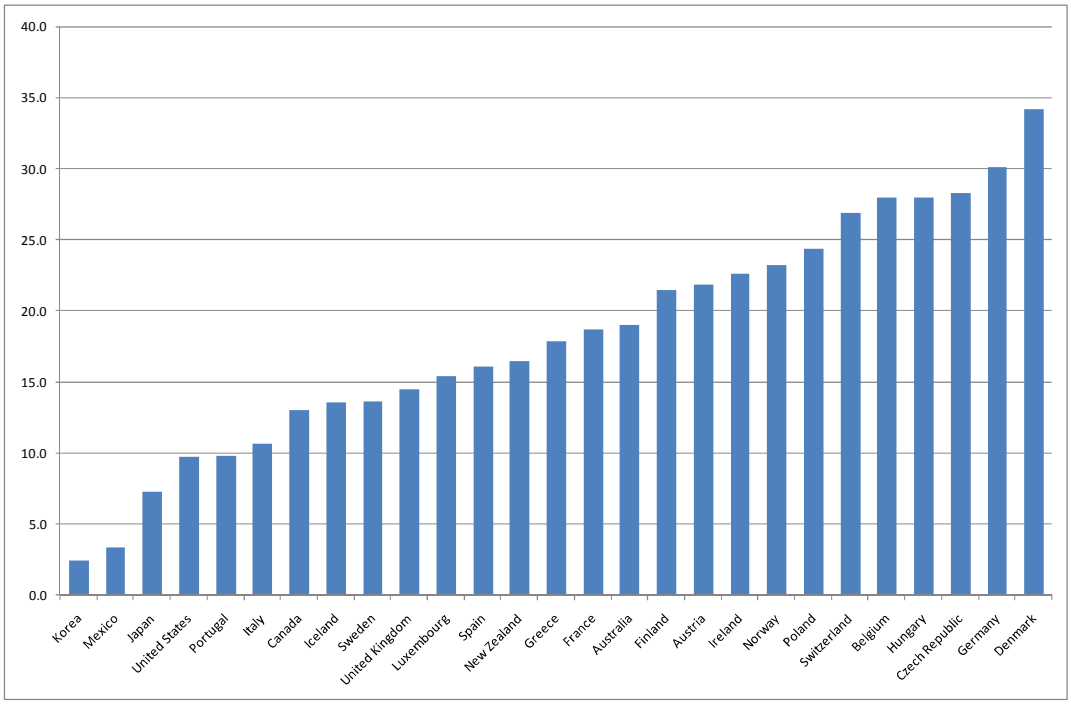


Source: OECD education database

Less well understood is the great variety within families of VET systems, for example the somewhat different approaches to apprenticeship in Germany and Switzerland (see Section 4.1) or the radically different approaches to upper secondary VET in Sweden (where upper secondary VET involves a limited amount of workplace training) and in Norway (where most upper secondary VET students pursue an apprenticeship). Many of these differences in education systems are strongly reflected both in labour market structures, and in attitudes, for example in occupational aspirations. 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 1.3). These high skilled blue-collar occupations include traditional trades like plumbing and electrical trades. At the same time most OECD countries are also seeking to develop VET in new technical white-collar occupations including healthcare and computing.

Figure 1.3 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.

Labour market contexts are equally diverse. In some countries, a combination of minimum wages, collective wage bargaining and strong employment protection legislation means that the costs and risks of recruiting a new employee are high, so employers will be reluctant to recruit untrained workers. Unless the initial VET system can compensate, by ensuring that young people emerge from initial VET "job-ready", there may be a difficult transition between school and work, and higher youth unemployment. 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. Launched in 2006, this review is examining 16 countries. (For more information, see *www.oecd.org/employment/youth.)*

There is a complementarity between enterprise training for adults, and the requirement on initial vocational training. A firm's motivation to invest in vocational training depends on characteristics such as its size, structure and methods of production. 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 they may therefore leave for a better job elsewhere (for the case of Korea, see Kuczera, Kis and Wurzburg, 2009). Low-technology firms that rely on intensive use of cheap unskilled labour on fixed-term contracts tend to invest less in skills than companies with highly skilled workers and new technologies (see for example Gashi, Pugh and Adnett, 2008). Under these circumstances initial VET may be proportionately more important because it compensates for market failures which undersupply training among adults.

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 1.3). This study addresses the difficult challenge of comparing the characteristics of VET systems in different countries. This means summing different VET programmes within countries into aggregate measures which can be compared internationally. This does mean that 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 1.3 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 is 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 to be aggregated. Many of the results are presented in terms of the percentage of national VET 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, M. (forthcoming).

Many things other than initial VET help to meet labour market needs. These include not only education and training systems, but also formal and informal enterprise training, informal learning, migration flows, and labour force participation, influenced as it is 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, for any government to make these choices requires high quality co-ordination across the range of government departments responsible for these different policy areas. This is a major challenge.

Taking account of previous and parallel work

Analytic work on VET has been conducted in universities, national institutes, in international bodies such as United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Labour Organisation (ILO) and the agencies of the European Commission in the European Centre for the Development of Vocational Training (CEDEFOP) and the European Training Organisation (ETF). 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 VET 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.

An initial scoping exercise for this review identified a very large range of potential issues for examination (Grubb, 2007). These include many issues on topics like governance that are 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. This sounds simple but disguises many ambiguities. We here propose to 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 competencies necessary to sustain a fulfilling career, in the context of rapid and sometimes unpredictable changes in occupational circumstances.

Defining the scope

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

This report is inevitably selective in its coverage. The guiding principle has been to include material when we believed we had something useful to say, leaving many important areas inevitably untouched. In the process we have also identified a number of areas which will be covered in further work and the final version of the comparative review. These include:

- General skills in VET: numeracy and literacy.
- Further analysis of career guidance issues.
- Dropout.
- Comparative costs of apprenticeships in different countries.
- The labour market context for workplace training.
- Tax incentives for employers to offer workplace training.
- The role of qualification frameworks.
- Helping VET systems to cope with the downturn.

In some aspects of VET there is a policy consensus, for example that employers should be engaged in VET, and that workplace training is very important. Often the real challenge here is implementation – making policy reform happen. Policy implementation

is important in all policy areas, but perhaps particularly in the area of VET, because of the need to engage with stakeholders with diverse interests, in particular employers. Countries are highly variable in their success – or failure – in engaging employers and the institutional preconditions of good employer engagement are discussed in Section 5.5. Increased attention will be given to issues of policy implementation as the work develops.

Structure of the report

In the chapters which follow, this report develops a simple policy message. It argues that in order to meet labour market needs, the gulf between VET and the world of work needs to be bridged. Chapter 2, *Meeting labour market needs*, discusses how VET systems can provide the right numbers of trained people, with the right mix of competencies. Chapter 3, *Effective teachers and trainers*, describes measures to sustain and develop the trainer labour force, and to use national assessment frameworks to enhance quality in VET provision. Chapter 4, *Taking advantage of workplace training*, explains the many advantages of workplace learning, suggests some ways of encouraging employers to offer workplace training and proposes some features of effective apprenticeships. Chapter 5, *Tools to support policy*, explores some structural preconditions of effective learning for jobs. These include better data on the labour market outcomes of VET, backed throughout by effective career guidance, a more systematic approach to evidence-based policy making and institutions to engage the social partners.

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Chapter 2

Meeting Labour Market Needs

Vocational education and training (VET) systems need to deliver the right mix of skills both to meet student needs and to match the requirements of the labour market. Determining the supply of VET programmes through central planning is fraught with information problems. Forecasting (by location and by occupational sectors) of the exact number of skills needed in a given labour market is often unreliable.

Beyond upper secondary level, the balance of provision between student preference and employer demand depends in part on funding. If students pay full or high fees, they may reasonably expect their preferences to play a dominant role. Ideally, VET programmes should include an element of workplace training because, apart from the learning benefit, employers' willingness to provide such workplace training reflects potential labour market demand for the skills acquired in the VET programme.

A good balance between generic and specific skills is also important. VET graduates need occupationally specific skills allowing for a smooth transition into the labour market without lengthy additional training. They also need generic transferable skills to carry them through their working career, including the ability to adapt to fast-changing workplace requirements.

2.1 Introduction: funding considerations

This section is concerned with the mix of provision in VET and how it should be determined. It argues that the mix of provision should be influenced by funding since those who benefit most should bear the main funding burden, and that in return they may reasonably expect influence over the mix of provision.

Economists advance a number of reasons why basic education in schools 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 their interests.
- *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 not depend too much on social background and family wealth.
- *Externalities:* The benefits of education fall to society as well as to the individual.
- *Efficiency:* Investing in the early stages of education is more cost-effective than later on, as learning begets learning.

Given the cumulative weight of these five points, OECD countries normally provide free or almost free basic education. Upper secondary education is now widely considered as an educational minimum, and in that sense part of "basic education". The implication is that qualifications delivered by upper secondary VET should also be available to individuals at little or no cost.

Sharing the benefit, sharing the costs

VET (regardless of the level) aims to provide skills that can be immediately applied on the labour market in the targeted occupation. These skills benefit employers directly. The precise distribution of benefits will depend on the mix of skills being learnt – for example skills specific to an industrial sector may yield proportionately higher benefits to the whole industrial sector and rather lower benefits to the employee themselves. The distribution of benefits should ideally be reflected in the distribution of funding responsibilities in order to ensure the optimal skills provision. This principle should be handled so that it does not undermine the principle of free access to basic education. In setting up funding arrangements the following should be kept in mind:

- A free market in VET, with students paying the full costs of their VET tuition, would yield *fewer* VET skills than would be optimal, since it would not take into account the returns to employers as well as students. (This does not hold in apprenticeship markets, given the role of employers in determining the supply of workplace training.) 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, given that employers will 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 only pays EUR 400 for the course. Alternatively, local employers could subsidise provision, perhaps by providing some of the training in the workplace.

- As the benefits to employers vary between VET programmes, unconstrained student choice of these programmes (even when partly or fully subsidised by government) would not 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 captured in the wages of engineers. This would mean that the incentives to pursue engineering qualifications would be limited and there would be fewer VET engineering students than would be socially desirable. Again, either government or local 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. Potentially, some measures of burden sharing, with employers contributing to the costs of VET provision might be desirable.

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. In practice of course the size of these elements is very important. For example, fees for VET programmes at upper secondary level in Australia are modest – a small fraction of the true cost of provision.

Table 2.1 Who pays for VET?

Percentage of upper secondary VET 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	■	■	-	■■■■
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, M. (forthcoming), *The OECD International Survey of VET Systems*, OECD, Paris.

As tertiary participation has increased, graduates from upper secondary VET programmes increasingly choose to enter tertiary education – sometimes into a related VET field, but sometimes also into a quite different field or into a more academic field of study. For example one-quarter of Dutch upper secondary VET students continue into tertiary VET, and around three-quarters of Korean upper secondary VET students do so. This means that upper secondary VET programmes must be designed not only to prepare students for the labour market, but also for entry into tertiary education. Sometimes strains emerge when programmes designed entirely for labour market entry are used extensively as a stepping stone to tertiary education.

In post-compulsory education and training, including VET, fee arrangements are highly variable between countries, and sometimes within countries, for different types of provision. Whatever the country arrangements, VET needs to fit consistently into the country framework, with common funding principles applying. 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 VET 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. (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). Common principles can imply different funding of VET and non-VET programmes, for example because employers benefited more from the VET programmes and therefore may be expected to contribute more.

2.2 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 have lasting consequences. They are also constrained: some options are not available or not funded by government. Policy makers for VET (as for other parts of education) have to decide on how far to give students the programmes they want, and how far they should simply provide the programmes that they believe will meet labour market needs.

Three main models, ideal types, can be identified as ways of determining the number of places on VET programmes (in practice most countries mix these models):

- *Student preference:* In this model, students choose their courses freely, and the VET authorities adjust provision to meet demand, regardless of whether those courses provide skills needed by the labour market.
- *Planned provision:* Provision is planned according to various criteria, including employer advice and forecasts of labour market needs alongside student preferences.
- *Market determination:* When workplace training is a necessary element in provision, students aim to choose their courses and programmes, but they are limited to those where employers are willing to offer workplace training. So the mix of provision is determined by the balance of supply and demand in a market.

Countries can only provide VET where they have the teachers, the trainers, the classrooms and other equipment necessary to the task. So in all three models, the supply of training in VET institutions is an important constraint. How constraining it is depends on the extent to which VET systems rely on school-based VET. Systems where most

practical training is provided in companies (*e.g.* apprenticeship training) are less affected by capacity in VET institutions[2], which together with their staff embody a historical commitment, limiting the capacity to adjust quickly to changing labour market requirements. 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 types of practical skills may be so much in demand that it is difficult to find someone with the relevant skills willing to work as a trainer.

Taking account of student preferences

Giving weight to the preferences of individual students in the courses they study is important for at least three reasons. First, students are normally good judges of their own skills and the characteristics that may make them better suited to one job than another – so following their preferences leads to higher productivity. Second, they also 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 may reflect welcome career development, but it may also reflect some job mismatch.

In principle one might imagine a world in which students make informed and economically rational choices with full knowledge of their labour market prospects in different programmes. They would also pay the full costs of their course so that these costs would be set against the expected benefits, all of which would be realised by the student. Under these and other highly restrictive conditions this arrangement might yield a good response to labour market needs. But these conditions are often lacking.

Student choice can only improve the match between VET and labour market needs within certain limits. First, students need high quality information on the content of VET programmes and their outcomes to make informed choices. Currently they often lack that information, and the guidance to interpret the information, as discussed in Section 5.3 (Borghans, Grip, and Heijke, 1996). Second, in practice student choices are not exclusively based on income and employment prospects, but are also subject to arbitrary influences from family and peer groups (Heckhausen and Tomasik, 2002; Fiority and Dauffenbach, 1982)[3].

Countries regulate student choice by different means. One possibility is to establish rules regarding those *entitled* to publicly funded VET 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 and by the time the person turns 24. Those to whom this right does not apply may

2 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.

3 Each of these factors can either increase or decrease the relevance of student's choice to labour market needs. For example, well educated and well informed parents can provide better advice to their children than parents with poor knowledge of available options.

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.

The criteria of entitlement may be more or less restrictive, for example excluding persons who already have VET qualifications, or who are over a certain age. At upper secondary level entitlement is sometimes automatic for all those without an existing upper secondary qualification, but it may be more restricted at higher levels. Entitlement can be used as a tool not only to influence who undertakes VET but also to shape the allocation of places in different VET programmes, for example when larger subsidies are made available to courses covering designated areas of skills shortage. Such restrictions allow student preference to be reconciled with some element of planning in provision.

This entitlement approach may be used as a vehicle not only for student choice of programme but choice of VET institution, potentially opening up a market or quasi-market in provision. This will typically apply in systems where students can freely choose the institution or company providing VET and where public funding of VET providers is defined on a *per capita* base 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. If the choice of a VET institution were akin to choice in the economist's perfect market, competition would drive improved quality by rewarding and expanding good institutions and squeezing out bad ones. In practice the market is very imperfect. If competition is to be constructive, it must be supported by good information for potential consumers about the outcomes of different programmes and VET institutions.

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, 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 institutions, or on public institutions alone, this needs to be properly recognised and recompensed. At the same time, a strong capital base in a public institution, combined with some economies of scale, should not preclude market entry by competitors.

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 continuing quality of provision.

Box 2.1 Does competition help to improve VET provision? (Cont.)

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 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.

Planning provision to meet employer needs

Planned provision implies some process of decision-making allowing a VET authority to plan the number of places in different VET courses targeted at different occupations. It therefore implies some constraint on student preference, for example if places are deliberately limited for popular courses because there are few jobs in that field. A number of criteria, alongside measures of student demand and VET institution physical capacity to provide programmes, are typically used to guide the allocation of students to different programmes. These include measures of labour market demand for skills in different areas – often employer and union views on skills needs, but also independent assessment of skills needs both currently and in the future. The weight of these elements in the final decision of planning authorities varies across countries. In Australia, Ireland and Finland, skills forecasts inform authorities responsible for the planning of VET provision (see Box 2.2).

Box 2.2 How planned provision works

Ireland

At national level, two mechanisms play a role in anticipating skills needs:

- The 'Expert Group on Future Skills Needs' includes representatives of social partners, government departments, industrial development organisations and education and training bodies. Its objectives include identifying skills needs, developing techniques that will assist skills forecasts and advising on decisions related to training policies. It produces long-term forecasts, as well as projections of future demand by occupational groups under different growth scenarios (EGFSN, 2007).
- The 'FÁS/ESRI Manpower Forecasting Programme' aims to provide information on the changing pattern of occupations and to identify skills needs in broad occupational fields. This information supports FÁS (the National Training and Employment Authority) in defining medium-term strategies and planning provision. The Skills and Labour Market Research Unit, located in FÁS maintains a database on the supply and demand of skills at national level with the aim of facilitating the analysis and forecasting of skills needs.

Qualitative approaches are also used. Much of the National Skills Strategy was based on interviews and consultations that pointed out possible future skills trends. At local level, the mix of VET provision is determined on the basis of local data, including demand from students, expected local employer needs, labour market outcomes of existing programmes and consultation with local social organisations and chambers of commerce. There is, however, increasing pressure on institutions from the National Qualifications Authority to align their courses to identified skills needs (CEDEFOP, 2008a).

Box 2.2 How planned provision works (Cont.)

Finland

Labour market forecasts have been used since the 1970s for policy planning. They are based on two models (Saijets *et al.*, 2006):

- *Long-Term Labour Force Model:* Under a baseline and a target scenario, projections are produced for labour force and employment by industry. Forecasts are prepared every three to five years by the Ministry of Labour.
- *Anticipating Educational Needs:* This is an exercise carried out by the National Board of Education. Using labour force projections, it aims to forecast demand for new recruits by occupational groups and the supply of new job-seekers. Based on these forecasts, the anticipated educational need is determined by occupational field and level of education (upper secondary VET, polytechnics, universities) (FNBE, 2005).

The results of these forecasts are fed into national policy planning and are used to inform local VET policy making (CEDEFOP, 2008b). The owners of VET institutions (joint municipal authority, local authority, state or private organisations) are free to determine the mix of VET provision according to local needs. They can decide on the form in which VET is provided and the educational institutions they maintain (FNBE).

Australia

Over recent years Australia has been moving from a strategic planning model to a student-demand driven system where each state and territory has adapted different skills forecasting methods to meet local needs. During the 1990s and early 2000s, under national arrangements the amount and mix of publicly funded VET provision was determined based on projections for each industry of future employment and training needs, taking account of training provided by privately funded institutions.

The MONASH model, operating since 1993, provided mid-term (5-15 years) forecasts covering 113 industries and 115 commodities (*www.monash.edu.au/policy/monod.htm).* National forecasts by industry were converted into regional forecasts, broken down into the 341 occupational unit groups of the Australian Standard Classification of Occupations. These were then used to determine the employment outlook for workers by age, sex, qualifications and hours worked per week (Boswell *et al.*, 2004). Broad direction and priority setting was informed by the Monash modelling.

Based on these forecasts, a national strategy was developed, which defined target groups (selected on the basis of skills shortages and equity considerations); delivery objectives (geared towards training participation); development objectives (based on broad strategic goals) and priority areas (short-time measures reflecting the current situation) (Gasskov, 2000; ANTA, 2004).

The national strategy was used as a basis in each state's and territory's planning procedure, which produced a state VET plan (DEST, 2006). In Victoria, for example, Skills Victoria created a plan for VET provision. At the state level, local factors (*e.g.* population change, trends in student demand for courses, social policy considerations) were taken into account to make revisions to centrally planned numbers (Gasskov, 2000).

Engaging employers and unions

One apparently simple way of assessing skills requirements in the labour market is to ask employers. Consultation may be organised at national level, regionally or by sector, and carried out either through bodies representing employers or through surveys. Sometimes employers are not only consulted, they decide on the mix of provision. For example in Hungary, since 1 January 2008 the Regional Development and Training Committees (more than half of whose members are drawn from the social partners) now have decision-making powers over the number of students admitted to different programmes and over the qualifications to be delivered in the region.

Consultation with employers faces two main problems:

- *It may be hard to find out what employers really want and need.* Employers are a diverse group with equally diverse views, and variable in their capacity and willingness to put energy into articulating their future skills needs. Any measure of "employer views" linked to selected samples of employers therefore risks either being uninformed, or failing to capture variations in the demand for skills over time, place and occupational and industrial sector. Fast-developing parts of the economy, almost by definition, may resist packaging into qualifications, and employers in these areas may be too new and volatile to form effective lobby groups – creating a conservative bias in the employer voice.
- *Employer interests may not be the same as student interests*. Employers may want very narrow skills in occupational niches, skills for declining industries and for jobs which are unpleasant and badly paid, or an oversupply of skills to drive down wages in the associated occupations. These employer demands need to be kept in balance with the interests of society at large, including the interests of the student. "Skills shortages" as perceived by employers might also be perceived as "low wage" or "unpleasant job" areas by potential employees or trainees. Employer demand for certain skills is not just 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.

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 supplied to ensure that their members have the skills to move to other related occupations and partly because 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, to artificially 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 industry and education system structures, 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).

Seeing into the future: time lags and skills forecasts

All education presupposes some vision of the future in which the learning will yield desired outcomes. Initial VET shares this quality. Its rationale, from the point of view of all the stakeholders, is that it 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 some years into the future, and what cannot.

One way of planning a response to future labour market needs is through skills forecasts. In many countries they are used as a very broad guide to governments and public agencies in policy making. Some countries (*e.g.* Australia) have also used them to plan VET provision. They are also used to inform students and social partners (Neugart and Schömann, 2002). Many OECD countries forecast trends in employment mainly by occupational categories, often on a time horizon of five to ten years (Neugart and Schömann, 2002). For instance, Canada has developed occupational forecasting models at national and provincial levels to diagnose future skill shortages (OECD, 2004). A recently published report about the future skill needs for 27 European countries presents medium-term forecasts for skills in the European economic bloc as a whole and in each individual country within the bloc for 2015 (CEDEFOP, 2008a).

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. Where forecasting models have been evaluated, results show that forecasts can provide useful indications on overall labour market trends, but at the level of specific occupations projections are often unreliable (Neugart and Schömann, 2002; Sexton, 2002; Barnow, 2002; Richardson and Tan, 2007).

In some specific areas, such as health care and training, forecasts may play a more central role. In these areas forecasts of demand are linked to relatively stable demographic trends, and the state tends to be the dominant employer. Even in these areas, increasingly, international migration interrupts the relation between national training and labour supply – for example the international migration of nurses and teachers.

VET programmes often take some years to complete so there is a time lag between the decision on the number of students starting each programme and when VET graduates enter the labour market. In Denmark, for example, students are accepted into a VET programme two years before they start their apprenticeship and four years before they are ready to enter the labour market. Many employers find it hard to predict their future requirement for recruits. Empirical evidence shows that 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).

Balancing student preference and employer needs: potential market solutions

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 optimal balance depends on factors including:

- *Who pays:* If students pay most or all of the cost of VET courses – for example at levels beyond upper secondary – then the mix should be equivalently dominated by 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 preference should be balanced by factors like employability, particularly bearing in mind the fact that provision is typically free of charge to the student.

One way of achieving the balance between employer demand and student preference is through planned provision to reflect employer needs, but allowing weight to student preferences. The main difficulty with such an arrangement is the information and administrative challenge. The information challenge is to anticipate future skills requirements, both regionally, and by occupational sector. Planning needs to factor in, again by occupational sector and by region, the relative contribution to the pool of workforce skills of initial VET, taking into account migration, retirements and retraining. Moreover it would need to arbitrate between student preferences and these skills requirements of the labour market, taking into account the varying returns to the two parties of different types of skill. This is a truly Herculean task, similar to the challenges of planning production in a centrally planned economy.

These difficulties provide strong arguments for building some kind of local market into provision, as a means of utilising the capacity of markets to convey complex information signals flexibly and rapidly. One such market mechanism might be a system driven by student preference. This would respond, locally and flexibly to different student preferences. But this may still not fully address the needs of employers.

Employers can influence the number and mix of places in VET through their willingness to offer workplace training, in particular in systems where the offer of places in VET is tied to the availability of apprenticeship places. In some countries, supply and demand are brought into balance through a market in apprenticeship training, automatically adjusting provision to the needs of the labour market, while also taking into account student preferences and variations across regions and sectors. Forecasts about future needs for different skills are superfluous in an apprentice framework. Sometimes the State plays a more active role: in Denmark, students participating in VET courses are expected to find an employer who will accept them for training. The number of available training periods in firms has been decreasing and trainees unable to find workplace training have been able to enter a compensatory practical training scheme in a school (*skolepraktik*). However, since 2005, the number of trainees admitted to programmes with poor employment prospects has been limited. The Ministry of Education can also limit access to programmes in which students are unable to find a training place in a firm owing to the overall employment situation in the sector (Danish Ministry of Education, 2005).

In conclusion therefore, VET systems do need to balance student preference and employer need. Realising that goal is hard, but one way of doing so is through workplace training and the associated market mechanisms.

2.3 Getting the right mix of skills for each job

The previous section looked at how to get the right number of training places for different types of job. But the "right skills" means not only making sure that we get, for example, the right number of persons trained as bakers, but also that they have the skills needed to bake well. There are different approaches, ranging from programmes which concentrate on the academic underpinning to others which are much more practical. Table 2.2 indicates the amount of practical training in different VET programmes in OECD countries.

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

Estimated percentage of upper secondary VET 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	■■	■	■■	■	-
Czech Republic	-	■	■■■■	-	-
Denmark	-	■■■■	-	-	-
Finland	■■■■	-	-	-	-
France	■	■■■■	-	-	-
Germany	-	■■■■	■	-	-
Hungary	-	■	■■■	■	-
Netherlands	■	■■	■■■	■	■■■■
Norway	-	■■■■	-	-	■
Sweden	-	-	■■■	-	-
Switzerland	■	■■■■	-	-	■
Turkey	-	■■■■	-	■	-
United States	-	-	■■■■	-	-

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

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

* For definitions see glossary.

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

Those learning the baking trade need to acquire a diverse range of competencies to enable them to practice the trade. They need a good theoretical understanding of the baking process as well as all the hands-on skills. They may also need entrepreneurial skills, knowing how to run, or assist in, a small retail business – and so have some understanding of accounts, as well as soft skills, such as dealing with customers. One way of classifying these competencies is set out in Table 2.3.

Table 2.3 How we classify vocational skills: the skills of a baker

	Vocational: Specific to occupation	Vocational: Generic to a range of occupations	General skills
Practical – manual, physical, oral	Kneading bread	Dealing with customer complaints	Oral communication
Theoretical – intellectual, cognitive	Biochemistry of yeast	Managing accounts	Reading skills, mathematics

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 should include occupation- and 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.

Most upper secondary VET programmes contain a proportion of general skills dealing with literacy, numeracy and some other elements such as second languages. These very important skills underpin much other learning including the learning of practical vocational skills. They also build into an individual's skillset the capacity to adapt to changing circumstances and skill requirements.

Various studies highlight the risks of including too much specific content in the curriculum (*e.g.* Munich, 2004; Kézdi, 2006). 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. Although skills requirements inevitably vary among industrial sectors, virtually all workers will need to acquire new skills during their career. In sectors facing rapid technological change, the ability to learn is crucial and generic skills are highly valued by employers (Smits, 2007; Ghost, 2002). Labour markets change rapidly and often unpredictably, so skills like literacy that assist the acquisition of new skills are particularly valuable in the long run (Kézdi, 2006). In low-technology industries and at lower skill levels, generic competencies may be less valued by employers, but 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).

Clearly employers are in a strong position to judge what mix of skills is optimal for particular occupations (like baking) and it therefore makes sense for employers to play a key role in establishing the curriculum (see Table 2.4). However, if employers have too dominant an influence, programmes may overestimate the importance of occupation-specific skills and give insufficient attention to 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 apprentices to have strong transferable skills, collectively employers have an interest in a flexible and adaptable labour force in their sector.

Table 2.4 How the social partners (employers and trade unions) influence the mix of VET skills

	Curricula		Practical training content		Acquired competencies		Delivered Qualifications	
	Decision	Advice	Decision	Advice	Decision	Advice	Decision	Advice
Australia[1]	-	-	■■■	■■■	■■■	-	■■■	-
Austria	■■	■■■	■■	■■■	■■	■■■	■	■■■
Czech Republic	-	■■	-	■■	-	■■■■	-	-
Denmark	■■■■	■■■■	■■■■	■■■■	■■■■	■■■■	■■■■	■■■■
Finland	■■■	■■■	-	■■■	■■■	■■■	■■	-
France	-	-	-	■■■■	-	■■■■	-	■■■■
Germany	-	■■	■■■	■■■■	-	■■	■■■	■■■■
Hungary[2]	-	■■■■	-	■■■■	-	■■■■	*	■■■■
Netherlands	-	■■■■	-	-	-	■■■■	-	■■■■
Norway	-	■■■■	■■■■	-	-	■■■■	■■■■	-
Sweden	-	■■■■	-	■■■■	-	■■■■	-	■■■■
Switzerland	■■■■	-	■■■■	-	■■■■	-	■■■■	-
Turkey	■■■■	-	■■■■	-	■■■■	-	-	-
United States	-	■■■■	■	-	■■■■	-	■■■■	-

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

Total score in each category might be bigger than 100% . This is because social partners involved at different levels may have a say over the same aspects of VET. For example, in Denmark, the Advisory Council for Vocational training (REU) has advisory status towards the Minister of Education (national level). The Council advises on the overall structure of the system. At local and sectoral levels Sectoral Trade Committees and Local Trade Committees can decide on many elements of VET within the overall structure.

1.Most upper secondary VET programmes are outside the school sector. Employers through Industry Skills Councils provide decision and advice about the curricula.

2. In Hungary, since 1 January 2008 the Regional Development and training Committees (more than half of whose members are drawn from the social partners) have powers to decide on the qualifications to be delivered.

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

2.4 Meeting labour market needs: conclusion

Arguments and evidence

- VET yields returns to individuals, employers and society. The funding of provision needs to reflect where the benefits fall.
- Student preference should be an important driver of provision, since students know their own capacities and interests.
- Student preference in isolation will not yield an optimal mix of publicly funded places, since employer needs are not taken into account.
- When full fees are paid, or when students are older, student preference should determine provision, since students are bearing the costs.
- There is a daunting information challenge in systematically planning the mix of needs for occupational skills and the equivalent mix of provision.

- Forecasting skills requirements into the future, locally and by occupational sectors, tends to be unreliable as a means of planning provision.
- Where workplace training is an essential feature of provision, the mix of provision is driven by employer willingness to provider workplace training places.
- VET graduates need a good mix of occupationally specific skills and more generic transferable skills.

Meeting labour market needs: OECD recommendations

- Provide a mix of VET programmes that reflect both student preferences and employer needs. One effective way of doing so is through an apprenticeship system, where a market balances supply and demand.
- For VET beyond secondary level, share the costs between government, employers and individual students according to the benefits obtained.
- 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 occupationally-specific skills that meet employers' immediate needs.

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Chapter 3

Effective Teachers and Trainers

Many countries face a shortage of teachers and trainers in vocational education and training (VET) institutions as the current workforce approaches retirement age. Some teachers and trainers are also poorly equipped to teach because they lack recent workplace experience. By contrast, trainers of apprentices and trainees in companies often have no specific pedagogical preparation.

Many countries need measures to encourage the recruitment of trainers in VET institutions, taking into account the opportunities presented by the current economic crisis. Part-time working, with trainers spending some of their time in workplaces, might be further encouraged to improve the understanding of workplaces in VET institutions. Trainers 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, so that VET personnel spend time in industry to update their knowledge, and supervisors of apprentices in firms have the opportunity and incentive to enhance their pedagogical skills.

Assessment of the skills acquired by students and apprentices during their training provides a basic test of quality in teaching and VET provision. There are demonstrated advantages in evaluating student performance in VET through standardised national assessments. Such national arrangements can improve student performance, improve the signalling value of qualifications, be more cost-effective than locally organised examinations, facilitate recognition of informal and non-formal learning, and promote flexibility and innovation in learning.

3.1 Enhancing the VET workforce

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 *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, theoretical and practical vocational skills are increasingly taught combined, while in Switzerland general subjects (*e.g.* sciences) are often adapted to the relevant vocational field (*e.g.* for electricians).

Sustaining the trainers in VET institutions

The problem: ageing workforces and limited workplace experience

The quality of the teacher and trainer workforce is one of the key elements in overall quality control in VET institutions (see Table 3.1 for the factors against which quality control is measured in VET institutions). 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 VET schools are over 50 (Skolverket, 2007). The ageing VET workforce is also a challenge in Australia (NCVER, 2004).

Table 3.1 Factors examined in quality assurance in VET institutions*

	Curric-ulum	Training content	Programme duration	Physical resources	Number of training places	Qualific-ations acquired	Educ-ational perform-ance	Labour market perform-ance
Austria	yes	yes	yes	yes	yes	yes	yes	no
Czech Republic	no	no	no	no	no	yes	no	no
Denmark	no	no	no	no	no	yes	yes	no
Finland	yes	yes	no	no	no	yes	yes	yes
France	no	no	no	no	no	yes	no	no
Germany	yes	yes	no	no	no	yes	yes	no[1]
Netherlands	no	yes	no	no	no	no	yes	no
Sweden[2]	yes	no	no	no	no	no	yes	no
Switzerland	yes	yes	yes	yes	yes	yes	yes	no
United States	yes	yes	yes	yes	yes	yes	yes	no

1. This criterion is used in one programme catering to 11% of all secondary VET students.

2. In Sweden, the principal organiser/the governing board also have the primary responsibility to make sure that provision is of good quality. This will include ensuring that the students get the prescribed amount of workplace training and that the training content is in line with the curriculum.

* For definitions see glossary.

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

Many countries have found it difficult to compensate for the growing wave of retirements. In addition, 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. Currently, this situation is changing fast. The global economic crisis and fast-increasing unemployment in many countries mean that the relative attraction of working as a VET teacher and trainer has increased dramatically. 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. 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).

In addition, the knowledge and skills of teachers and trainers in VET institutions needs to remain up-to-date. For example, 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 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. Participation in training in practical skills should be encouraged through formal arrangements. Vocational trainers' and teachers' participation in training will always tend to be low if there is no relevant framework. Dalton and Smith (2004) observe that vocational teachers think they are too busy to update their skills and knowledge if in-service training is not part of their workload. The development and updating of work-related knowledge may be encouraged through incentives, particularly wage incentives.

Solution 1: Improving recruitment

Where trainers in VET institutions lack workplace experience, one strategic objective should be to encourage people equipped with practical workplace skills to become trainers in VET institutions. This will both increase recruitment, and help to ensure familiarity with workplaces on the part of trainers. Flexible pathways of entry into the vocational teacher/trainer profession may help with this. Requirements to practice 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 CEDEFOP report on the qualification requirements of vocational teachers and trainers casts further light on this (Parsons *et al.*, 2008).

Vocational trainers in VET institutions are often required to complete a pedagogical course. While such courses help prepare trainers for their work, more onerous requirements may discourage people in mid-career from becoming a vocational teacher or trainer. Allowing skilled workers to acquire their pedagogical competencies in a flexible way (*e.g.* distance learning, recognition of prior learning) would help encourage skilled workers to practice as vocational teachers/trainers. Flexible requirements would also facilitate the hiring of skilled workers from companies on short-term contracts to fulfil

vacancies. Such arrangements exist in Norway, where VET institutions and local employers cooperate to ensure an adequate supply of vocational trainers.

General teachers, for example those teaching physics for 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 existing holders of a selective school teacher's certificate at upper secondary level this will involve 300 learning hours.[4] 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 3.1).

Box 3.1 The Swiss Federal Institute for Vocational Education and Training

The Swiss Federal Institute for Vocational Education and Training (SFIVET) is the national competency centre for teaching and research in vocational and professional education and training (VET/PET). SFIVET has regional campuses in three of Switzerland's linguistic regions. Its activities encompass basic and continuing training of vocational teachers and trainers as well as research and development for the government and professional associations.

SFIVET's **Basic Training Division** provides training to full-time and part-time teachers working at vocational schools and professional colleges as well as to other VET/PET professionals. The Master of Science (MSc) degree programme in Vocational Education and Training provides university graduates with the opportunity to gain academic qualifications in the VET/PET field.

SFIVET's **Continuing Training Division** offers continuing education and training courses designed to upgrade the skills of VET/PET professionals; enable VET organisations to develop their activities; provide VET/PET managers with advanced training; and promote quality and innovation within the Swiss VET/PET system.

SFIVET's **Research and Development Division** explores and lays the foundations for basic and continuing training in the VET/PET field. In particular, it carries out evaluations and impact assessments or develops competency measurement concepts that serve as the basis for further VET/PET developments.

SFIVET mainly pursues applied research questions in the VET/PET field. It works closely with universities and other research institutes in Switzerland and abroad. The Research and Development Division is also responsible for assessing and monitoring the quality of the training programmes and courses as well as the quality of consulting and development services provided by SFIVET.

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.

[4] Other requirements apply to vocational college teachers of professional studies in Switzerland.

Solution 2: Using part-timers and flexible working arrangements

In many countries, including Mexico and the Netherlands, some trainers in VET institutions already work part-time as trainers and part-time in industry. Part-time working arrangements should certainly not be seen to diminish the status of the staff involved. In fact such arrangements offer particular benefits because these trainers remain in close touch with the needs of the modern workplace, and this pattern of working may appeal to those who wish to develop a career as a trainer but retain a job in industry. 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 industry 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 industry is crucial. This point is argued further below. In addition, professional qualifications for vocational trainers may improve the overall image and status of VET in the eyes of employers (Spark, 1999 in Dalton and Smith, 2004).

Solution 3: Improving 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, p. 37; Harris *et al.*, 2001). Consistent data are needed on the key characteristics of the teacher and trainer workforce, including previous careers, attrition and turnover rates, and, ideally, information on why people leave the teaching profession and where they go. Longitudinal data, at least on a sample basis, would help to understand 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.

Training 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 with the necessary pedagogical skills. Supervisors play a key role, they pass on practical skills, but also transmit theoretical knowledge, help apprentices get used to the social codes of the workplace, and more broadly, are responsible for the management of apprentices (Gérard *et al.*, 1998).

The capacity to convey a practical skill involves more than the ability to exercise it. Teaching requires special competencies. A study from Australia found that apprentices

highly value the social skills of supervisors such as communication skills and the capacity to deal with conflicts, but many supervisors felt they lacked the skills to respond to these expectations (Harris, Simons and Bone, 2000). Country evidence suggests that when apprentice supervisors receive specific training, they do a better job of developing the skills of apprentices. In Australia, workplace trainers felt that targeted training courses were helpful in developing supervising competencies (Harris, Simons and Bone, 2000). According to a study conducted in the UK, supervisors without relevant training tend to focus on specific occupational skills and neglect key social competencies such as communication and team-working. They also perceive their role of supervisors as additional to their main job (Evans, Dovaston and Holland, 1990). Training for workplace trainers may also have spill-over benefits, since the competencies acquired 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. Such informal training is an important part of workplace learning, especially in SMEs (Robertson *et al.*, 2000). It is therefore important that all workers involved in students' training, including those who support learning in informal ways, have the required skills (Harris, Simons and Bone, 2000).

Ensuring minimum standards of trainer preparation

Formal entry and in-service training requirements for trainers in companies vary among OECD countries. In most countries relevant work experience is necessary to become a trainer, but, trainers are less often expected to have pedagogical training or develop management competencies. 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 3.2 shows a Swiss approach to trainers' training.

Box 3.2 Preparation of vocational trainers in Swiss companies

In Switzerland, firms need to meet quality standards supervised by the canton to take apprentices. For those supervising apprentices, there is a required course of 100 learning hours. The learning hours cover pedagogy, the law, the VET system, and problems with young people, including drugs and alcohol. Apprentice supervisors have to show a certain level of education. The training is backed by inspection and quality assurance. Cantonal inspectors speak with the apprentice and the people in the company and check that the apprentices are learning something useful. If there is a problem the cantonal staff provide some "coaching" to the company. The companies see that this is to their advantage, in that if they look after the apprentices better they get more out of them.

Kirpal and Tutschner (2008) report that trainers in companies often do not perceive themselves as a distinct category, nor are they recognised as such in their work environment. They are instead seen as workers providing training on the margin of tasks carried out in the company. The study argues that trainers who are not aware of their role are less likely to develop skills related to training. Similarly, companies that do not distinguish trainer responsibilities from other tasks performed by the worker tend to provide fewer opportunities for their training staff to develop relevant training skills. Given this evidence, in formal apprenticeship schemes, some training of apprentice trainers should be obligatory. In Germany, the suspension of compulsory training for workplace trainers seems to have had a negative impact on the overall quality of apprenticeship training (BIBB, 2008). In the past, employees who wanted to work with

apprentices had to pass a national exam with an optional preparatory course. This requirement has been suspended for five years, as firms complained that it was a barrier to them offering apprenticeships. The first evaluations of this initiative show that it has adversely affected the quality and overall success of initial VET. In companies without qualified training staff, apprentice dropout rates were higher and the same companies complained about the poor performance of their apprentices. A survey of sectoral organisations of social partners revealed that social partners associated the suspension of formal qualifications for trainers with a deterioration in the image of VET and its overall quality. Both training and non-training companies considered formal requirements for workplace trainers as a guarantee of minimum standards (BIBB, 2008).

Clearly obligatory training implies additional costs for firms. This may be burdensome, for SMEs in particular, and might become an obstacle to the supply of workplace training. At the same time, it should also provide benefits to companies. Better supervision is likely to increase the productive contribution of apprentices during the training period, improve learning outcomes and create a better pool of potential recruits for the company. In Switzerland, for example, companies can reap net benefits out of apprenticeship despite obligatory training for trainers and no subsidies from the State (Mühlemann *et al.*, 2007). A survey among French trainers who received training shows that 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 balance the need for quality in apprenticeship training with the need to encourage employers to offer workplace training. Requirements therefore need to be set appropriate to the national context.

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). Again, the cost-sharing arrangements need to reflect national circumstances, so that the costs and benefits of apprenticeship training are shared sensibly between employer, trainee and the government.

Strengthening the links between VET institutions and industry

Collaboration and exchange between VET institutions and industry might advantageously be linked to enhancing the VET workforce. They can be used to improve 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 and help to solve the recruitment challenge.

In some European countries, there is a trend for trainers in VET institutions to work in companies for a one-off period of two to three months in order to update their vocational competencies (Cort, Härkönen and Volmari, 2004, see also Box 3.3). In Australia links between VET colleges (TAFEs) and companies have fostered mutual understanding and exchange of knowledge (Harris, Simons and Moore, 2005). In many countries, the quality of partnerships depends heavily on personal relationships. While these are important, they need to be systematically supported, perhaps through a small

fund promoting innovative local initiatives. Best practice examples might then be shared at the national level.

Box 3.3 Teacher-worker pairing: co-operation between VET institutions and industry in Finland

The *Telkkä* programme in Finland is based on close co-operation between teachers and workplace trainers. It aims 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, a synthesis of experiences 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 by the Economic Information Office in Finland as one of the best ways of developing teachers' professionalism.

Source: Cort, Härkönen and Volmari (2004)

3.2 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 therefore 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 some apprenticeship arrangements involve an emphasis on "time served" as a proof in itself of competency. This section looks at ways of strengthening assessment in VET.

A *standardised national assessment framework* needs some explanation. Its purpose is to provide a consistent method to assess the learning outcomes for VET students and thereby to ensure that all those with a qualification have the same mix of competencies and 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 periodical inspections of VET institutions, inspection of examination bodies, random evaluation of student performance, self-evaluation of providers and peer reviews. Regardless of the choice of the tool, countries should make sure that national standards are met by all institutions and companies providing VET.

A standardised national assessment framework can be organised in different ways. 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 3.4 describes an assessment arrangement used in Saskatchewan, Canada (see also Table 4.5).

Box 3.4 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 competencies 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 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 competency is made by a trainer but in line with the guidelines of the Cook National Occupational Analysis (NOA).

National Occupational Analysis (NOA), set up at the federal level, 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:

- *Secure the quality of training:* In a system without national assessment, students may learn according to standards that are decided locally, by VET institutions or companies. As a result the level of work competencies among students may differ depending on the local and institutional ability to set up the right objectives for training. Furthermore, training received might be too narrow and firm-specific if its content is defined by individual companies. 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 apprenticeship and VET in general.
- *Improve the signalling value of the qualification:* Standardised national assessment ensures that the skills acquired during an apprenticeship are not too firm-specific and have a clear identity in the labour market. This would make 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*: A standardised national assessment should also be more cost-effective than a decentralised assessment system. Decentralised systems will require different assessment procedures to be developed all round the country, duplicating efforts.
- *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 apprenticeships and other forms of practical training, 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 apprenticeships more flexibly to the needs of specific occupations and give students an incentive to acquire the necessary competencies swiftly rather than to "serve time" to obtain the qualification.

Balancing national assessment and local autonomy

Wößmann *et al.* (2007)[5] argue that more responsibility over curricular content at local level is advantageous as it injects local knowledge into the learning process. On the other hand local actors may favour their own interest at the expense of the students' outcomes. The study concludes that external assessment neutralises this negative effect by imposing control mechanisms on local players.

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. Standardised national assessment is thus an important complement of a decentralised system. Examples of how such arrangements can combine local and national elements are provided below:

[5] 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.

- In **Germany,** an apprentice obtains three certificates: The "employer certificate" is a work reference provided by the employer based on workplace performance measured against occupational and training standards. The "school certificate" reflects continuous assessment of the student by the local education institution. Each state (*Land*) includes local elements in this school certificate. The "final certificate" is based on a uniform national examination (the "journeyman test"), administered to all apprentices, and aims to assess minimum competencies (CEDEFOP, 2008).
- In **Canada,** centralised final exams were introduced to increase the mobility of skilled workers between provinces. 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).

3.3 Effective teachers and trainers: conclusion

Arguments and evidence

- In VET institutions, many countries are facing a shortage of teachers and trainers as the current workforce approaches retirement age.
- Some of the trainers in VET institutions may have limited recent workplace experience.
- Some trainers responsible for the supervision of apprentices and trainees in companies have insufficient training in how to teach.
- Research evidence shows that trainers who have *both* pedagogical skills and workplace experience are more effective.
- Data on the teacher and training workforce are sometimes inadequate.
- A standardised assessment for VET qualifications:
  - Ensures consistency in the *mix* of competencies acquired and in the *level* of competencies necessary to pass the test.
  - Allows competencies 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.

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 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. Allow those with industry skills to enter the workforce of VET institutions through effective preparation.
  - Take advantage of the current economic slowdown to encourage those leaving industry with good practical skills to enter the workforce of VET institutions.
- Provide appropriate pedagogical and other preparation for trainers (including the supervisors) of trainees and apprentices in workplaces.
- 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.
- Adopt standardised national assessment frameworks to underpin quality and consistency in training provision.

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Chapter 4

Taking Advantage of Workplace Training

In all countries, employers make extensive use of their workplaces to train their existing employees, but countries differ greatly in the extent to which they use workplace training to develop the vocational skills of young people. Workplace training has many advantages. It provides a strong learning environment, it can improve transition from school to work by allowing employers and potential employees to get to know each other, it contributes to the output of the training firm, and it links training provision to a direct expression of employer needs.

To take full advantage of workplace training, the training needs to be of high quality and employers need to be willing to provide it. This means good quality assurance mechanisms, balanced by effective incentives for employers.

Apprenticeship, one main model of workplace training, faces two main challenges: encouraging employers to offer a sufficient number of training places, and ensuring that the training provided is of good quality. Meeting both challenges at the same time is hard since quality requirements can be burdensome for employers; so the design of the apprenticeship system needs to be in balance. An ideal apprenticeship system will involve high quality training providing transferable as well as occupation-specific skills. It will be attractive to a wide range of employers, be relevant and appealing to apprentices, have a low dropout rate and offer adequate wages. Countries use many types of financial incentives to encourage workplace training, including direct subsidies, special tax breaks and training levies.

Workplace training includes first, formal apprenticeships typically involving a contract, lasting for a period of two to four years and leading to a formal qualification, second, other shorter and often less formal training and work experience for young people and, third, training for employees. Our interests lie mainly with the first and second elements, the apprenticeships and other less formal training which form part of initial vocational education and training (VET).

For a would-be electrician, vocational training includes theory (the physics of electricity), practical hands-on skills (how to wire a house) and practical generic skills (dealing with clients). In countries with strongly developed apprenticeship systems, like Australia, Austria, Denmark, Germany, Norway and Switzerland, work placements typically form a large part of the programme of study (see Table 4.1 and Figure 4.1).

Table 4.1 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	■■	-	-	■■■
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 and Switzerland the amount of workplace training depends on the institution and programme.

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

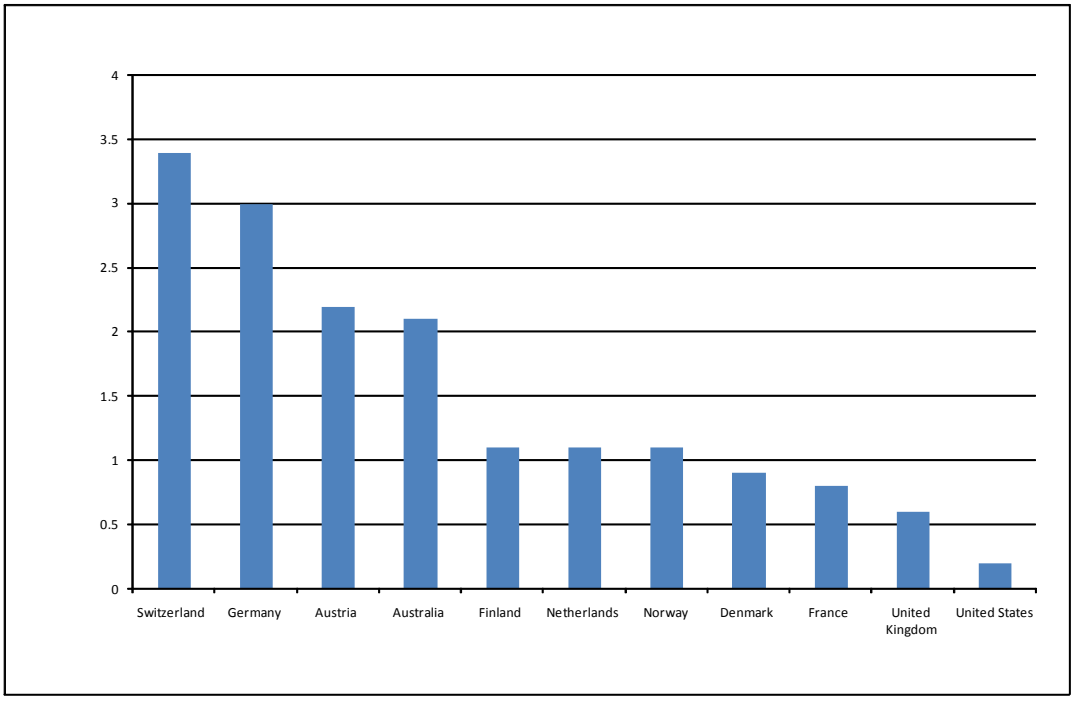
* For definitions see glossary.

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

Apprenticeships are one of the oldest established institutions in education and training. They often involve some form of blended on- and off-the-job training but the design is highly variable, ranging from the alternance arrangements in the dual system with apprentices attending school one or two days a week to the Norwegian arrangement with two years of school followed by two years of workplace training. For many countries apprenticeship represents a core element of initial VET, although this is highly variable between countries (see Figure 4.1). Apprenticeships are found in the traditional trades as well 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.

Figure 4.1 How common are apprenticeships?

Apprentices as a percentage of those aged 15 to 64: 2001 estimate



Source: NCVER *www.ncver.edu.au/research/proj2/mk0008/internat.htm;* NCVER, using data from CIA; CEDEFOP; US Department of Labor.

4.1 The advantages of workplace training

There are four major advantages of training in workplaces rather than in VET institutions. First, workplace training can offer a very 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 normally make a productive contribution. The four points are developed below.

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, so that 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.

While an apprentice electrician can learn how to wire a house in a VET institution with the relevant electrical equipment, that electrician will normally need a work placement to find out how to deal with a complaining client, or work effectively alongside a builder and a heating engineer. Soft skills like these are hard to develop away from the concrete demands of a real workplace. A study of sales assistants in Denmark (Aarkrog, 2005) found that soft skills were best acquired on the job. Simulating practice at school (*e.g.* through role play) was perceived by students as artificial and useless. 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 transferring into practice the theoretical knowledge learned at school (Aarkrog, 2005; Woerkom, Nijhof and Nieuwenhuis, 2002).

Information flow to improve recruitment

In the workplace, employers and trainees and apprentices get to see each other for what they are, on Monday mornings, when under pressure, and when there is conflict. There is abundant research to show that the characteristics on display in these contexts are critical to job performance. Employers learn about the performance of trainees and apprentices as potential recruits and equip them with skills suited to the job (Autor, 2001; Clark, 2001). Since other potential employers cannot readily observe these characteristics, an employer taking apprentices is in a position to recruit the best from among them. Companies can use this information advantage to pay salaries below the individual's post-training productivity (Acemoglu and Pischke, 1998; 1999a; Leuven, 2005). This is the *recruitment benefit* to employers of workplace training (see glossary).

These benefits to employers depend on labour market characteristics and regulations, including the extent of asymmetry of information in the labour market, the degree of recognition of qualifications, search costs, and wage-bargaining mechanisms (Acemoglu and Pischke, 1999b).

- Where labour turnover is high, so that apprentices often move to other jobs, or only stay briefly following recruitment, the risk of "poaching" is increased, and the recruitment benefit is consequently reduced.
- Where wages are very flexible and job security limited, it is possible for employers to take on recruits at low wages and then, once employee performance becomes clearer, reward the most productive and lay off weaker ones. This means that it is not vital to establish productivity in advance of recruitment, and the recruitment benefit of formal apprenticeships 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.

- Factors like national service requirements – for example in Switzerland and South Korea – 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.

Workplace training also provides critical information to students about the line of work they might or might not wish to pursue and about at least one potential employer. This helps to facilitate a smooth transition from school to work.

Productive contribution

Apprentices and trainees undertake useful work generating a *productive benefit* for the employer (see Box 4.1, and evidence from Switzerland and Germany in Schweri *et al.*, 2003, Mühlemann *et al.*, 2007). 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 Swiss apprentices spend more time doing productive work at the host company than German 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.

Box 4.1 The costs and benefits of apprenticeships in Switzerland

In 2000 and 2004, around 2 500 host companies took part in a survey to determine the costs and benefits of apprenticeship training. Another survey is planned for 2009.

The *gross costs* of apprenticeship training are the resources which would be released by not taking apprentices. They include apprentice salaries, vocational trainer fees, labour costs for administrative tasks and recruitment, installation costs, cost of materials, and some other costs.

The *benefit* to host companies derives first from the *productive benefit* that apprentices generate over the course of the VET programme. The productive output of apprentices is therefore calculated in terms of the costs of employing someone else to generate this productive output.

By comparing the host company's gross costs and apprentices' productive output together, we obtain the host company's *net loss* (*i.e.* if gross costs exceed productive output) or the host company's *net benefit* (*i.e.* if productive output exceeds gross costs).

In 2004, Swiss companies invested a total of CHF 4.7 billion in apprenticeship training. At the same time, the productive output generated by apprentices stood at CHF 5.2 billion. Overall, apprenticeship training was therefore a good investment for Swiss companies. Around two-thirds of host companies obtained a net benefit from their apprenticeship training activities. In most cases, the one-third that generated a net loss were able to recover their loss in the short- and medium-term by hiring the VET graduates that they themselves had trained during the VET programme by reaping the recruitment benefit.

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 VET 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 (both the production and the recruitment benefits will be high). Unlike school-based VET, workplace training is 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.

Even where short work placements are all that is involved, as in some VET programmes, the placements can serve to signal the skills needs of employers. In Sweden, the OECD review (Kuczera *et al.*, 2008a) recommended that in upper secondary school-based VET programmes, the currently nominal 15-week period of workplace experience should become mandatory. Apart from its intrinsic benefits as a learning experience, this proposal is explicitly designed to grant employers leverage over the mix of VET programmes offered by VET institutions, since a programme would only run if an employer is prepared to offer workplace experience.

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, since:

- 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 first initiate their skills (Robertson *et al.*, 2000).
  - Economies of scale may mean that it is best to teach some skills collectively in training workshops, (whether in a public VET institution, or in a training centre funded by a whole 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.
- General skills, including numeracy and literacy skills, are extremely important in nearly all jobs directly, and critical to adaptability and the learning of new skills. Although such skills can be embedded in other forms of learning, including workplace learning, classroom environments are the traditional context for acquiring these skills.

4.2 Ensuring quality in apprenticeships

Quality standards

A good quality apprenticeship involves adequately prepared workplace trainers guiding the development of the apprentice, providing a good range of vocational skills – including both hard and soft workplace skills – and offering an effective route into the relevant job. More specifically:

- VET institutions and work-based training should complement each other. 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 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).
- As argued in Section 3.1, well-prepared workplace trainers play a crucial role. The quality of the relationship between apprentices and their colleagues is also important to informal skills development particularly in SMEs (Robertson *et al.*, 2000; Harris, Simons and Bone, 2000).

Firms are always interested in the immediate productive contributions of apprentices, 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. In analysing firms' motives for training, some authors distinguish between substitution motives (*i.e.* substituting apprentices for workers) and investment motives (*i.e.* training to meet a future need of qualified labour) (Franz and Soskice, 1995; Neubäumer and Bellmann, 1999 in Mohrenweiser and Backes-Gellner, 2006; Smits, 2006). Research from Norway (Askilden and Øivind, 2005) and the Netherlands (Smits, 2006) suggests that firms training for substitution motives 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 investment rather than substitution motives.

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 apprentices 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 (wages of apprentices and trainers, equipment), 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 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 if a firm has an interest in providing good training, there may still be a difference between the firm's interest and those of students: firms tend to have a preference 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 also 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. This argues for quality standards and clear learning objectives for workplace training. 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.

These considerations argue for quality control carefully applied to apprentice training to ensure that the employers involved deliver on their training responsibilities. At the same time, the quality requirements should not be so demanding as to inhibit employer participation.

Quality standards are a binding 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 avoid the allocation of students to unskilled tasks and prevent training 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, while in Germany and Denmark there is stronger quality control and permission for training is withdrawn for companies that provide substandard training. Similarly, in Switzerland firms need to meet quality standards to be licensed to take on apprentices and the quality of practical training is monitored.

Table 4.2 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
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	m	m	m	m	m	m	m	m
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, 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 locally, education/governing boards are responsible for workplace training.

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

Table 4.2 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 4.2) provides an example of a tool that supports employers in improving their training.

Box 4.2 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 licenses, which host companies must obtain to provide workplace training to VET students. To acquire a license, 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

Special contracts for apprentices or trainees exist in many countries. Table 4.3 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 then the contract is signed between the firm and the apprentice under the supervision of the regionally competent chamber of commerce. Some countries (*e.g.* Australia and Norway) involve third partners in the apprenticeship under the supervision of the regionally competent chamber of commerce. Box 4.3 provides examples of the terms of apprenticeship contracts in three countries.

Table 4.3 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[1]	Employer	Trainee	VET institution	Employ ment	Training	Combining training and employ-ment
Australia	■■	■■■		■■■■	■■■■	■■	-	-	■■
Austria	■■■■	■		■■■■	■■■■	■■■	■■	■■■■	■
Denmark	■■■■	-		■■■■	■■■■	■■■■	-	-	■■■■
Finland	■	■■■■		■■■■	■	■■■■	-	■■■■	■
France	■■	-		■■	■■	-	-	-	■■
Germany	■■■	-		■■■	■■■		-	■■■	-
Hungary	-	■■		■■	■■	■■	-	-	■■
Netherlands	■■■■	-		■■	■■■■	■■■■	■■	-	-
Norway[2]	■■■■	-		■■■■	■■■■	-	-	-	■■■■
Switzerland	■■■■	-		■■■■	■■■■	-	-	-	■■■■

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

1. Varies depending on institutions, programmes and fields; m : missing; na : response does not apply.

2. Local government is also part of the contract.

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

Box 4.3 Contracts for workplace training

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

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

In **Switzerland**, an apprenticeship contract is signed by the VET student, the student's legal guardian and the host company. Legally binding, these contracts must remain in effect for the entire duration of the VET programme. In almost every respect, apprenticeship contracts are equivalent to work contracts (based on Articles 344 to 364a of the Swiss Code of Obligations). The only difference is that apprenticeship contracts include a clause whereby the host company agrees to provide the student with practical training. The apprenticeship contract also sets out the salary conditions for the entire period of training.

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.

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

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

A study of five European countries (Germany, Austria, Denmark, Ireland and the United Kingdom [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 tool to control 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. As a result the OECD review of Mexico recommends the establishment of a trainee contract (Kis, Hoeckel and Santiago, 2009).

Continuous vs. sequential training: need to allow for flexibility

Classic continuous 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 three or 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, or consider whether training organised by a group of companies could be more cost-effective.
- 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 ensure that apprentices reach their training objectives and that the costs and benefits of the training to employers will be in balance.

4.3 Making workplace learning reality: incentives for employers and trainees

Incentives for employers

The incentives on employers to provide apprenticeship places depend on the benefits and costs they expect from training. As discussed, employers gain both a production and a recruitment benefit from apprenticeships. In addition, employers sometimes say that training apprentices is a social responsibility, and, more subtly, that trainees ask questions, encouraging a reflective approach to the work. In many OECD countries governments offer additional incentives for employers to take apprentices (see Table 4.4).

The costs of apprenticeships to employers are of two main types: apprentice wages, and the resource costs of training the apprentices:

- 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*., 2008b).
- The resource costs of training apprentices include the time of experienced employees, mistakes by inexperienced apprentices and wasted resources (Richardson, 2005), remunerations of training staff, teaching materials and administrative costs (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[6]. But many firms lack such mechanisms and rely instead on perceptions of the utility of training (Davidson *et al.*, 1997; Schweri *et al.*, 2003)

Systematic studies have been undertaken in Germany and Switzerland into the costs and benefits to employers of taking apprentices (see Box 4.1).

Government-provided incentives for employers

As argued in Section 4.1, there are important spillover benefits from many forms of VET, including workplace training, since there are benefits not only to the employer offering training, but also to the student, as well as to other employers and society at large. This common interest in workplace training provides an argument in principle for governments to encourage and support workplace training. Governments use a mix of direct subsidies, tax breaks, levy arrangements and in-kind arrangements (see Table 4.4).

Table 4.4 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	Travel expenses of a trainee
Australia	Yes	Yes	No	Yes	Yes	Yes
Austria	Yes	Yes	In some sectors	Yes	Yes	Yes
Denmark	No	No	Yes	Yes	Yes	No
Finland	Yes	No	No	-	-	-
France	No	Yes	Yes	Yes	Yes	No
Hungary	Yes	No	Yes	Yes	Yes	Yes
Norway	Yes	No	No	Yes	Yes	Yes
Netherlands	No	Yes	-	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 apprenticeship place offered has two potential weaknesses. First, many of the apprenticeship 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, subsidised firms may reduce other types of training that are less generously subsidised.[7] Evidence suggests that the effectiveness of a subsidy, as an incentive for a firm to train, is mixed. Brunello (2009) discusses evidence from a Danish study by Westergaard-Nielsen and Rasmussen (1999), arguing that although the effects of a subsidy on the willingness to provide an apprenticeship place is modest

6 Information provided by OPET Switzerland.

7 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' chance of obtaining apprenticeships.

(demand for apprentices would have been 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. In Switzerland a simulation exercise suggested that subsidies would have an impact only on firms that are not involved in apprenticeship but have no effect on the supply of apprenticeship training in firms that train already (Mühlemann *et al.*, 2007). In Austria, subsidies had very little impact (Wacker, 2007).

The design of apprenticeship systems is characterised by trade-offs between different factors, which all need to be in balance for the system to be effective. The required quality of training needs to be sufficiently high to deliver for the student and for 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 the apprentice skills develop – also need to be balanced. It 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.

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.

Some countries employ training levies to boost the amount of training offered by companies – typically using them to support the training of existing employees, but also sometimes trainees and apprentices. For example in Hungary, employers are required to contribute 1.5% of their payroll, representing almost one-third of total national expenditure on school-based VET (Hungarian Ministry of Labour and Social Affairs, 2008). Enterprises can either contribute this sum to the Labour Market Fund, or alternatively offset some or all of their contribution against provision of practical training for VET students, direct support to VET institutions for development purposes or training for their own employees. Economic growth fuelled a fivefold expansion in the Labour Market Fund between 1998 and 2004.[8] Box 4.4 summarises the rather mixed evidence on the effectiveness of levies.

[8] *Source*: Hungarian Ministry of Education, Hungarian Ministry of Employment and Labour, cited in Köpeczi Bócz and Bükki (2006a, p. 65).

Box 4.4 Do training levies work?

Training levies may be used to raise revenues for public policy initiatives, increase training levels beyond what is provided by firms and promote a more equitable distribution of training opportunities among employees and between industry sectors (Billett and Smith, 2005). They may promote firm-based training and give employers more freedom to manage their training activities (Gasskov, 2003), while allowing public authorities to influence training by defining conditions for eligibility for funds from the levy (Dar, Canagarajah and Murphy, 2003). However, they also sometimes subsidise training that would have been provided anyway (Dar, Canagarajah and Murphy, 2003). In this case, they are simply a windfall for the firms concerned (Gasskov, 2003).

Evidence also suggests that **universal training levies** are ineffective in ensuring an equitable distribution of training opportunities: firm size and employee characteristics typically shape access to training (Billett and Smith, 2005). The administrative procedures associated with claiming reimbursement or setting expenses against the levy contribution are often complicated and may discourage smaller firms from filing claims (Edwards, 1997). Large firms with well-established training programmes and administration tend to benefit disproportionately from the levy (Gasskov, 1998). Empirical evidence on the French levy scheme indicates that training opportunities are skewed in favour of large firms and more highly skilled employees, while small firms and employees with lower skills are less likely to benefit (Goux and Maurin, 1997). Similarly, the Korean training levy encouraged skills development, but large companies benefitted more than SMEs, even though the system included a special incentive for SMEs (Lee, 2006).

Training levies require careful supervision; otherwise it is hard to ensure that the training funded through the levy is of sufficient quality. Unfortunately, the supervision of training quality is sometimes carried out by tax auditors or departments that may lack the relevant expertise. Conversely, effective quality control inevitably implies substantial costs both for regulating authorities and the firms being regulated (Dar, Canagarajah and Murphy, 2003).

Sectoral training funds have been established in the Netherlands and also in the UK in the field of construction. Smith and Billet (2005) argue that sectoral levies work in some industry sectors and may be more attractive to firms than universal levies: they are negotiated through collective agreements and give employers control over the arrangements for the fund. However, they also share the main weaknesses of training levies (CEDEFOP, Briefing Note, 2008).

In theory, sectoral levies can be effective tools that support strategic objectives of the sector and, if firms perceive significant returns to training in industry-specific skills, they can help increase training expenditure by firms (Smith and Billett, 2005) but an empirical study on the sectoral levy in the Netherlands (Van den Berg, Meijers and Sprengers, 2006) failed to find evidence that the levy encourages either initial or continuing training.

Smith and Billet (2005) suggest that sectoral levies are ineffective in promoting equity in the distribution of training expenditure within firms. This contrasts with a study by CEDEFOP which suggests that sectoral training funds usually contribute to a more equal distribution of training opportunities among under-represented groups, (CEDEFOP, 2008 Briefing Note).

Other non-financial measures

In some countries there are special bodies that aim to facilitate employer engagement in apprenticeships. They typically serve to improve the match between the needs of employers and students looking for workplace training. They also take care of the administrative duties involved in apprenticeship training and thereby remove a

considerable burden from employers. (This is particularly important for SMEs). They may also employ apprentices and hire them out to host employers (see Box 4.5).

Box 4.5 External bodies involved in apprenticeship training

Australia: In Australia, group training organisations (GTOs) are not-for-profit organisations supported by public authorities, with some charges to host employers. The role of GTOs is to employ apprentices and hire them out to host employers. They sometimes focus on a particular industry or region. The tasks performed by GTOs include: selecting apprentices to suit the needs of employers; arranging and monitoring training both on and off the job; taking care of the administrative duties involved; 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: In Norway training offices (TO) *(opplæringskontor)* are owned by companies and usually relate to specific trades. TOs work actively to identify possible new training companies and establish new apprenticeship places, supervise companies with apprentices, and 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 (Norwegian Directorate for Education and Training, 2008).

Switzerland: Under the 2004 VET Act, the Swiss government established vocational training associations (*Lehrbetriebsverbünde*). These are groups of firms that share apprentices. The aim is to allow firms that do not have the capacity and resources to provide full training of an apprentice to become engaged and to decrease the financial and administrative burden on each individual firm. One of the firms of the association has the overall responsibility for the training of the apprentices, signs the apprenticeship contract and represents the association externally. The Confederation subsidises the *Lehrbetriebsverbünde* with initial funding (*Anschubfinanzierung*) during the first three years for marketing, administrative and other costs necessary to set up the joint training programme. After this initial support, the training associations are supposed to be financially independent. An evaluation (OPET, 2008) has revealed positive results in that a majority of firms in training associations would not have engaged in training otherwise.

Occupational licensing

Firms may be encouraged to train their staff if their occupations are licensed and therefore have to be certified against particular standards. However, Billett and Smith (2005) warn that using licensing as a means of encouraging training carries the risk of fostering superficial training and certification and potentially weakening licensing arrangements that exist for other reasons (*e.g.* health and safety).

Sustaining incentives for employers during the economic crisis

Economic pressures can limit the active participation of employers. Employers face a myriad of competing pressures and demands, and as indicated in the introduction, they tend to be 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 late 2008, the global economy entered a downswing and the length and depth of this downswing remains uncertain. In a recent review of the evidence of the effects of downturns on apprentices and initial workplace training, Brunello (2009) notes the limited evidence, but suggests that normally apprentice numbers drop even faster during recessions than do the numbers in employment, although incumbent employees may experience an intensification of training effort. During downswings employers tend to shed labour and become more reluctant to take trainees and apprentices. 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.

In Australia, during the early 1990s recession, apprentice numbers fell from 161 000 to 120 000 over the period 1990-93 (NCVER, *www.ncver.edu.au/research/proj2/mk0008/growth.htm*). 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).

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 during a period of intense uncertainty about the immediate economic future.

Potential policy responses to the 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 job-specific training shifted to later stages in the education and training systems.

Brunello (2009) argues for policy that encourages 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 comparative, depending on what else is on offer. Typically this will depend on the relative attractions of an academic track in tertiary education, or alternatively direct entry into the labour market.

Apprenticeships and other forms of workplace training may also smooth the transition to the labour market. Practical training in a company as part of initial VET may facilitate the transition from education and training to the labour market and reduce the cost of training graduate recruits, although the empirical evidence on the labour market outcomes of VET with workplace training is admittedly somewhat mixed. In Germany, economic activity was higher among apprentice graduates (who have received workplace training) than among university graduates and graduates from school-based VET (who typically lack workplace experience) although the duration of unemployment was longer for apprentice graduates than for other groups[9] (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 upper secondary graduates.[10]

Box 4.6 Workplace training in Korea

In Korea, many companies complain that young people entering employment directly after school require considerable training before they start a job (Grubb et al., 2006; Jung et al., 2004). According to a survey carried out by the Korea Employers Federation (KEF, 2005 in Park, 2007) among 536 companies (100 workers and over), new university graduates typically need more than 20 months of training before they are placed in a real work situation at a total cost of approximately KRW 107 million in large companies and KRW 39 million in SMEs (Park, 2007). Jung et al. (2004) argue that the low availability of workplace training in Korea forces students to seek costly additional training from private providers.

The Youth Job Experience programmes involve practical training in firms for students and unemployed 15-to-29-year-olds, with tertiary students accounting for 83% of all participants. Evaluation of the programme shows that student participants needed less time to find a job after graduation and stayed longer in their first jobs than those without work experience during their studies (OECD, 2007). However the programme reached relatively few students and participation has been decreasing (MEHRD and KEDI, 2005; OECD, 2007).

In the light of these circumstances, the OECD review of VET in Korea recommends improvement in the provision and quality of initial workplace training (Kuczera, Kis and Wurzburg, 2009).

9 Based on data for the 1984-90 sample.

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

Dropout is one indicator of weakness in apprenticeship systems as well as perhaps 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 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[11], 50-60% in Scotland, and suggest, that on a comparable basis, the rate in Germany is around 75%, around 70% in Denmark, around 65-70% in the Netherlands, and around 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 drop-outs – less than 5% of those who start apprenticeships.

4.4 Taking advantage of workplace training: conclusion

Arguments and evidence

- Good quality workplace training:
  - Provides a strong learning environment for both hard and soft skills.
  - 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.
- The ideal apprenticeship training will be:
  - High quality, with well-structured training in the workplace.
  - Attractive to a wide range of employers in terms of the costs relative to immediate and potential benefits.
  - Relevant and attractive to apprentices with a low dropout rate, and an adequate wage.
  - Cost-effective, relative to alternative ways of delivering publicly supported VET.

11 Completion rates in England have risen substantially in recent years, rising from 38% in 2004/5 to 64% in 2007/08. Data Service (2008) Statistical First Release DS/SFR1 v2 22 December 2008, the Data Service, London.

Workplace training: 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 workplace training is of good quality, through the provision of a clear contractual framework for apprenticeships, and through an effective quality assurance system.
- Balance workplace training by other provision (*e.g.* training workshops in schools) where other learning environments work better, or where workplace training is not available.
- Devise effective responses to the current economic crisis, to sustain workplace training, and cope with increased demand for full-time VET.

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Chapter 5

Tools to Support Policy

Good tools are needed to make effective policy. The development and implementation of policy depends on well-informed people, working with different stakeholders through strong institutions.

Information tools make the system more transparent, and the choices better-informed. Information allows students to see their way through a vocational education and training (VET) programme into the labour market, employers to understand what potential recruits have learnt in a VET programme, and policy makers and VET institutions to see whether VET programmes and institutions are getting their graduates into relevant work.

There are various ways to improve data on labour market outcomes. 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. (In addition, good qualifications frameworks can help to make the level and type of competencies acquired in VET programmes more transparent to students and employers alike.) Information on labour market outcomes is complicated and needs interpretation to make sense to a young person choosing a career pathway. While informal sources such as family and friends may provide useful information, high quality professional career guidance, well-supported by labour market data, is indispensable.

VET policy development also requires engagement with employers and unions. Their involvement helps 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. Their involvement is also necessary to gain their support for policy implementation.

5.1 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 have a useful outcome in the labour market. But in the VET institutions where learning takes place, sometimes little is known about what happens to students once they complete their training, *i.e.* whether the learning leads to relevant jobs. The lack of information is partly a practical difficulty as graduating students are mobile and hard to trace. Yet labour market outcomes are a fundamental measure of the extent to which VET programmes are meeting labour market needs, helping VET institutions to adjust provision to labour market needs and public authorities to support the most relevant programmes and institutions.

Data also help students to choose career paths. In countries where students have good information about the labour market outcomes of prospective VET programmes, they are in a better position to make informed career choices, in their choice of VET programme, target occupation and VET institution. Under-informed students may choose occupations that are not in demand on the labour market (Grubb, 2002). All these effects are more important in VET systems in which student preference plays a large role in determining the mix of provision. By contrast, within an apprenticeship framework, there is much less scope for students to pursue vocational training which will not lead to a job, since employers will be unlikely to offer apprenticeships in those fields.

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 VET programmes around one year after completion, establishes whether graduates are working and in what occupation, whether they are pursuing further study, or whether they are unemployed or otherwise not in the labour market. This allows the success or failure of different VET programmes and sometimes different VET institutions to be assessed. A survey can also ask graduates about what they thought of their VET programme – whether it was well taught and provided them with relevant skills for example. In this way such surveys become a tool to monitor quality in VET 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.* Northern Ireland, the Netherlands, Scotland and Ireland).

Box 5.1 Destinations surveys

In **Ireland**, the School Leavers Survey is based on a national sample of school leavers, who are contacted one year 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, their names entered in a draw for one of eleven prizes. After a few weeks those who had not completed the questionnaire received reminder postcards and received paper copies of the questionnaire a few weeks later. 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 Council, 11 April 2008).

The fieldwork is carried out by trained interviewers who contact and interview the selected school leavers throughout the country. Given the variation in response rates between leavers from different programmes, the results were re-weighted to give unbiased estimates (McCoy, Kelly, and Watson, 2007).

In **England** the "Framework for Excellence" programme includes a learners' destinations survey and an employers' survey. A pilot exercise has been conducted (LSC, 2008).

In **Australia**, a student destination survey, the *Student Outcomes Survey* run by the Australian National Centre for Vocational Education and research (NCVER),[12] covers student satisfaction with VET.

Through other surveys

Other types of survey also provide information. Censuses are normally a 100% sample and contain information on qualifications, or highest qualification, as well as a lot of 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 are not usually 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 labour market outcomes, but sample sizes are commonly quite small and therefore a substantial limitation when looking at smaller VET programmes.

12 *www.ncver.edu.au/statistic/21065.html*

Table 5.1 Types of survey allowing information on labour market outcomes to be collected

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

	Regular labour force survey	Longitudinal survey	Leaver survey	Census
Australia	■■■■	-	■■■■	■■■■
Austria	■■■■	-	-	■■■■
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. For example:

- In **Sweden**, a central population register includes a unique personal identifier and some basic personal information (sex, age, etc.). 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 tackles them actively (United Nations Economic Commission for Europe, 2007).
- A number of countries outside the Nordic region have plans to introduce similar systems. In **Switzerland**, for example, 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.
- While such unified data sets raise privacy concerns, they can be a very efficient way of organising relevant data. Better data costs 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.

Improving the evidence base

Good policy making requires a strong evidence base, to identify key challenges, and assess the effectiveness, costs and feasibility of different policy 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 responsibilities typically including the co-ordination of data collection, the analysis of data and research evidence and the provision of policy advice to government (see Box 5.2 for various examples of 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.

Box 5.2 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, mainly aims to facilitate a better understanding of VET in Austria and promote interdisciplinary research in the field. Its research activity centres around: (1) initial and continuing VET, including at tertiary level; (2) career guidance; (3) evaluation of individual programmes and institutions; (4) labour market analysis; (5) new teaching and learning methods; and (6) economics of VET.

Czech Republic: The **National Institute 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 (NITVE, 2008). A similar institutional setting exists in the Slovak Republic with the State Institute of Vocational Education.

Box 5.2 National VET centres in OECD countries (Cont.)

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: (1) developing international; and (2) regional VET research networks; (3) researching and analysing the French VET system according to the ministries requests; (4) producing regular employment and qualifications forecasts; and (5) managing a VET documentation centre.

Germany: The **Federal Institute for Vocational Education and Training** (*Bundesinstitut für Berufsbildung, BIBB*) founded in 1970, is a state owned company financed directly from the federal budget and controlled by 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: (1) analysing labour market trends, particularly identifying future skills needs; (2) compiling general statistics and conducting research on the German VET system; (3) managing several VET research databases; (4) supporting training enterprises and VET training centres through targeted training programmes (*e.g.* JOBSTARTER, STARegio); (5) contributing to the development of qualification frameworks; and (6) 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: (1) developing examination and teaching materials; (2) managing the Labour Market Fund's Training Subfund raised through training levies and other smaller VET development funds; (3) evaluating vocational training institutes; (4) disseminating best practices; (5) collecting VET data and managing the resulting database; (6) organising training for vocational teachers; and (7) 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: (1) analysing national VET policies; (2) supporting the network of VET stakeholders; (3) developing and propagating VET programs; (4) conducting research on qualifications systems; (5) evaluating vocational training institutes; (6) carrying out regular labour market analysis and managing the resulting database; (7) providing career guidance; and (8) promoting international co-operation.

Box 5.2 National VET centres in OECD countries (Cont.)

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. 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.

United States: The US has a **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.

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 also 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 at 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.

Box 5.3 Leading Houses in Switzerland and the UK Centre for the Economics of Education

The **Swiss Leading Houses** (LHs) are VET competency 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: (1) Quality of Vocational Education and Training; (2) Learning Strategies; (3) Economics of Education: Firm Behaviour and Training Policies; (4) Economics of Education: Transitions, Skills and Labour; (5) New Media and Technologies; and (6) Social Competencies (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).

The UK **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.

5.2 Reinforcing career guidance to focus on labour market outcomes

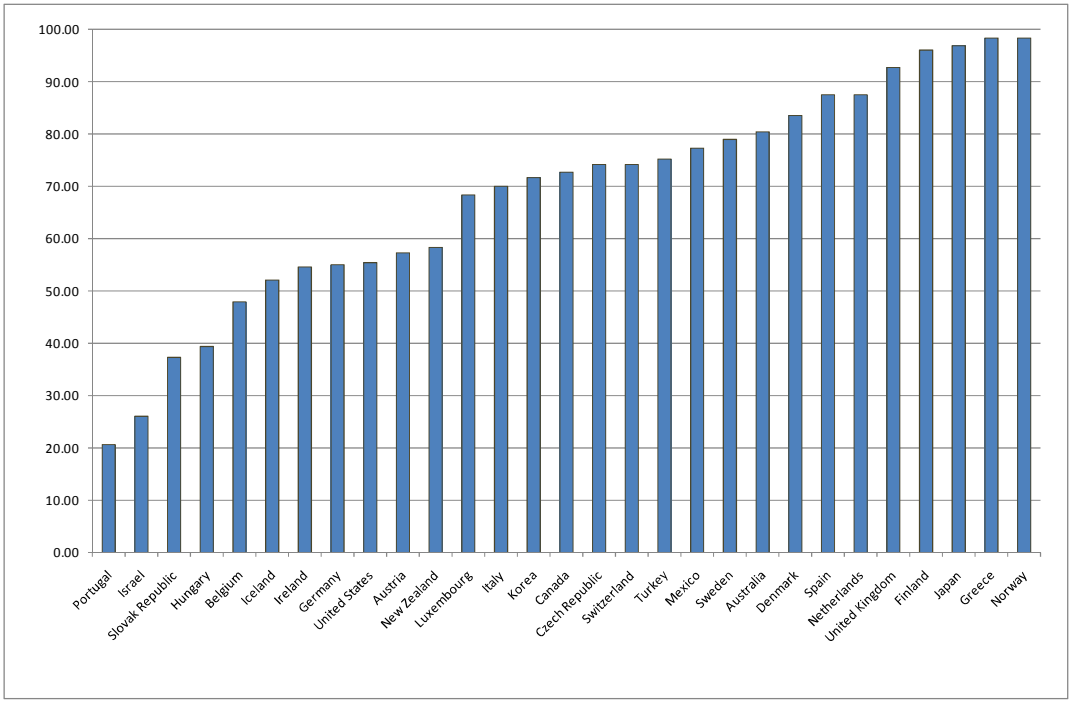
Availability of quality career guidance varies across countries

Information on labour market outcomes is complicated. It needs interpretation if it is to make sense to a young person choosing a career pathway. That is the task of career guidance. To be meaningful, counselling should be available to pupils before they make a choice between academic and VET tracks, and before they choose a particular occupation.

While it is desirable that such guidance is readily available to all for reasons of both efficiency and equity (OECD, 2004), the amount of career guidance formally scheduled into students' time at secondary school varies across countries (see Figure 5.1). If formal sources of career guidance are not available, students will rely on informal sources, such as family and friends. While such sources have their strengths, they may lack reliability and impartiality or confine choices to the known and familiar rather than opening up new horizons (OECD, 2004). If young people choose the wrong career early on the costs of later changes are high, both for the individual, and for the education system, although these costs may be reduced by flexible pathways to other occupations or educational tracks, allowing careers to evolve over time. Moreover, insufficient information at the critical moment may undermine motivation and cause students to drop out.

Figure 5.1 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 : PISA 2006 database: school principals' responses.

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."

Some countries have come up with successful models of information provision

Several countries have come up with successful models for the provision of information and career guidance.

Box 5.4 Using a USB stick to provide career guidance information in Mexico

The Mexican Ministry for Education has developed "Career guidance in my memory" (Orientación vocacional en mi memoria), a USB stick distributed to students and also available through the Internet. It includes tools that help students to identify their strengths and interests, information on institutions offering particular programmes, and data on the labour market outcomes. Thanks to data on outcomes collected by the Mexican Labour Market Observatory (*Observatorio Laboral Mexicano*), 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. Although currently it does not cover all occupations and levels, it is an interesting example of user-friendly, interactive guidance tool, which takes advantage of new technology.

Source: www.orientacionvocacional.sems.gob.mx

In many countries VET institutions themselves provide information and career guidance to potential students. But these institutions have incentives to direct students towards programmes offered at their own institution even if 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, as in several OECD countries. One solution, as in Germany, is to link the advice given by schools to the labour market expertise of employment offices.

Box 5.5 Joint career advice by schools and employment offices in Germany

In Germany, a co-operation treaty between the Federal Employment Office and the Permanent Conference of the Education Ministers of the German States (a co-ordination body between the states [*Länder*], which meets regularly and sets rules that apply to all states which in Germany have large autonomy in terms of their education policy) sets out the joint obligation of schools and employment offices to provide impartial, up-to-date and professional career advice.

Schools are expected to provide students with basic information on the functioning of the economy and the labour market, on different occupations and on the principles of career choice. They also co-operate with local employers to offer students insights into the world of work and arrange contacts for practical training. Employment offices inform students about the requirements of different occupations and provide students with up-to-date information on the state of the labour market, on apprenticeship and higher education opportunities, as well as options for direct labour market entry after school.

Joint career counselling starts at least two years before the end of any school programme. It takes into account the individual interests and skills of students and future labour market needs. Counselling takes place in schools during class hours or during special events on the premises of local employment offices, either on an individual basis or in groups. Schools and local employment offices co-operate in various ways. They form local and regional networks involving various stakeholders, such as employers and higher education institutions. Schools are involved in developing the information provided by employment offices and joint training courses are held for teachers and employment office staff. Schools and employment offices also harmonise their planned measures and projects every year.

Source: Bundesargentur für Arbeit and KMK (2004).

Career counsellors should receive VET-specific preparation

A frequent problem of career guidance in OECD countries is that career counsellors lack familiarity with VET systems, having received their education in tertiary academic institutions, and often are qualified in psychology rather than something which might have informed them about labour markets. As a consequence, attention to the educational and vocational guidance needs of students tends to get squeezed by attention to the personal and social guidance needs of (few) students with particular difficulties.

Switzerland has established a strong system of vocational career guidance and counselling. Attending career guidance and information sessions is mandatory for students in compulsory secondary education. In years 7, 8, and 9 of lower secondary school, students learn in their own schools about their career options; all teachers receive some training in labour market opportunities so that they are knowledgeable about the labour market. Then students in those years are introduced to the main institutions for guidance and counselling, the centres for occupational information (*Berufsinformationszentren, BIZ*). These are free-standing institutions providing unbiased information and counselling for all levels of the VET system.

In these centres individuals can see generalist counsellors, and may then be directed to specialists with more knowledge of specific institutions. They work closely with schools, and indeed may provide some services at the school rather than at the BIZ site. The Swiss system therefore conforms well to the recommendations of the OECD review of career guidance.[13]

5.3 Using the evidence for policy making: appraisal and evaluation

Given that the evidence base on VET is sometimes weak, it is necessary to use it carefully. This means undertaking a careful appraisal of policies in advance of their implementation, and linking this to evaluation of their impact. Policy appraisal is a systematic way of bringing evidence to bear on alternative policy options, 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:

- Awareness of labour market requirements by students, VET institutions and policy makers.
- Employer satisfaction and profitability and increased use of the specific competencies acquired in VET programmes in work.

13 This thematic review recommended "specialised external career guidance agencies that visit the school", see OECD (2004), Ch. 3.

- Employment rates and earnings among VET graduates.
- Indicators of costs and efficiency in delivering these benefits would include cost of the programme to different parties and dropout rates.
- Equity outcome indicators would include evidence on the distribution of net benefits to different parties.

Identify a set of alternative methods of realising those objectives (including doing nothing). The policy options might include:

- More workplace training.
- Better information on the labour market.
- More effective involvement of the social partners.
- 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 competencies (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), 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, 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.

5.4 Involving the stakeholders

Why involve employers?

The objective of this study is to help VET systems respond better to labour market needs. The involvement of employers in the VET system is crucial to achieve this for three main reasons. First, employers are in the best position to see if the content of VET – curricula and qualifications – meets current labour market needs, and employers can guide their adaptation to new emerging requirements.

Second, employers need to be involved in policy development not only because that ensures that policy reflects labour market needs, but also because employer engagement is essential at the outset, if the policy is to be successfully implemented. In Norway for instance, the establishment of apprenticeship training required the full support of employers and trade unions. In the UK by contrast, persistently weak employer engagement in VET has been pointed out as a factor undermining many initiatives launched in the VET field (see Keep, 2005; Ryan, 2000; Soskice, 1993). Typically, engagement in VET policy making and provision of apprenticeship places go together: employer engagement and apprenticeship provision are very high in countries like Germany, Switzerland or Austria and conversely in countries like Sweden both engagement and provision are weak.

Third, active involvement in the design of VET policy makes employers understand the system better. If employers do not understand the policy context and the institutional settings, they are likely to disengage. In the UK for instance, where employer engagement is not particularly strong, a report on employers' views on improving skills for employment prepared by the National Audit Office (2005) stressed that some employers are confused by the range of information, bodies and training promotional material available.

Forms and scope of employer engagement

Stable and effective institutional frameworks for employer engagement are crucial. Instead of depending on individuals, formalised schemes ensure common quality standards and can therefore provide more effective communication channels. In some countries the role of employers (and trade unions) in VET design and delivery is clearly institutionalised and even stipulated by law (Switzerland for example). By contrast, reliance on local *ad hoc* initiatives and co-operation between individual schools and employers can lead to a proliferation of different practices in VET. Different local arrangements make the system more complicated for both students and employers, increasing the risk that students will follow inappropriate tracks, and employers will disengage because they do not understand the system.

Employer engagement in VET is very variable across OECD countries both in terms of the institutional arrangements and the tasks and actions carried out by employers. It can also vary in scope and involve merely an advisory or consultative role – of varying weight – or may be an actual decision-making role (see Tables 5.2 and 5.3).

Table 5.2 Forms of employer engagement in VET

	Tasks and actions	Institutional setting	Country examples
Agenda setting	Analysing evidence Recognising problems Determining issues for reform	Collectively through employer organisations, associations, chambers Individually, using employer surveys and opinion polls	Advisory Council for Initial vocational Education and Training, Denmark (*Rådet for de Grundlæggende Erhvervsrettede Uddannelser*) Employers' surveys, *e.g.* in the United Kingdom and Australia
Policy formulation	Reforming the regulation, structure and funding of the VET system Developing curricula, content and duration of VET courses and practical training Determining number of VET places Developing/updating the qualifications framework, determining examination requirements and acquired competencies	Collectively through employer organisations, associations, chambers School governing bodies which include employers Regional or sectoral bodies	Advisory Council for Initial vocational Education and Training, Denmark Sectoral employer organisations in Australia and the United Kingdom Regional VET centres in the Netherlands, Regional development and training committees in Hungary VET partnership (federal government, cantons and social partners) in Switzerland
Policy implementation	Promoting VET *e.g.* by hosting interns Delivering on-site training Sponsoring training for employees Examining student performance	Individual employers offering workplace training (including sector-wide basic practical training), apprenticeships, or releasing staff to supply vocational teachers to institutions Individual or collective financing, under voluntary or mandatory arrangements	Apprenticeships in dual-system countries Industry courses in Switzerland Training levies in Hungary Final examination in the workplace, *e.g.* in Germany
Policy evaluation	Assessing the quality of VET outputs Assessing student outcomes	National VET institutions Collective employer bodies Individual employers (*e.g.* through surveys)	KRIVET, BIBB, NCVER, etc. Surveys of employer satisfaction in Australia and the United Kingdom

Table 5.3 Social partners' impact on VET

Estimated percentage of VET upper secondary programmes in which social partners have advisory or decision-making role, by different aspects of VET

	Curricula		Practical training content		Duration of practical training		Number of students in VET		Number of places in practical training	
	D	A	D	A	D	A	D	A	D	A
Australia	-	-	■■■	■■■	■■■ [1]	-	-	■■■ [1]	-	■■■ [1]
Austria	■■	■■■	■■	■■■	■■	■■■	-	-	-	-
Belgium (Flanders)	■	■■■■	■■	■■■■	■	■■■■	-	-	■	-
Czech Republic	-	■■	-	■■	-	-	-	-	-	-
Denmark	■■■ ■	■■■■	■■■■	■■■■	■■■■	■■■■	-	-	-	-
Finland	■■■	■■■	-	■■■	-	-	-	-	-	-
France	-	-	-	■■■■	-	-	-	■■■■	-	-
Germany	-	■■	■■■	■■■■	-	-	-	-	■■■	■■■
Hungary	-	■■■■	-	■■■■	-	■■■■	■■■■ [2]	-	■■	-
Ireland	■■	■■	■■	■■■	■■	■■	-	■	-	■
Netherlands	-	■■■■	-	-	-	■■■■	-	-	-	-
Norway	-	■■■■	■■■■ [3]	-	-	■■■■	-	■■■■	■■■■ [3]	-
Sweden	-	■■■■	-	■■■■	-	■■■■	-	-	-	-
Switzerland	■■■ ■	-	■■■■	-	■■■■	-	■■■■ [4]	-	■■■■ [4]	-
Turkey	■■■ ■	-	■■■■	-	■■■■	-	■■■■	■■■■	■■■■	■■■■

	Acquired competencies		Examination requirements		Delivered Qualifications		Accreditation delivered to enterprises providing practical vocational training		Sectors/occupations in which practical vocational training is available	
	D	A	D	A	D	A	D	A	D	A
Australia	■■■	-	-	-	■■■	-	-	-	-	■■■
Austria	■■	■■■	■■	■■■	■	■■■	■■	■■■	■■	■■■
Belgium (Flanders)	■	■■■■	■	■■■■	-	■■■■	■	-	-	-
Czech Republic	-	■■■■	-	■■■■	-	-	-	-	-	-
Denmark	■■■■	■■■■	■■■■	■■■■	■■■■	■■■■	-	■■■■	-	■■■■
Finland	■■■	■■■	■■■	■■■■	■■	-	-	-	-	-
France	-	■■■■	-	-	-	■■■■	-	-	-	■■■■
Germany	-	■■	■■■	■■■■	■■■	■■■■	-	-	-	-
Hungary	-	■■■■	-	■■■■	-	■■■■	■■	-	■■	-
Ireland	■■	■■	■■	■■	-	■	-	■	■■	■■
Netherlands	-	■■■■	-	■■■■	-	■■■■	-	■■■■	-	■■■■
Norway	-	■■■■	-	■■■■	■■■■	-	-	■■■■	-	■■■■
Sweden	-	■■■■	-	■■■■	-	■■■■	-	-	-	-
Switzerland	■■■■	-	■■■■	-	■■■■	-	-	-	■■■■	-
Turkey	■■■■	-	■■■	-	-	-	-	-	-	-

Note: D – decision making; A – advisory role

0%; ■ 1-25%; ■■ 26-50%; ■■■ 51-75%; ■■■■ 76-100%

Total score in each category might be bigger than 100% .This is because social partners involved at different levels may have a say over the same aspects of VET. For example, in Denmark, the Advisory Council for Vocational training (REU) has advisory status towards the Minister of Education (national level). The Council advises on the overall structure of the system. At local and sectoral levels Sectorial Trade Committees and Local Trade Committees can decide on many elements of VET within the overall structure.

1. The role, ranging from advisory to none depends on industry, occupation, etc.

2. Since January 2008.

3. The apprenticeship model (2+2) for IVET consists of two years at school and two years as apprentice in a company. Figure refers to apprenticeship component of the programme.

4. Students taking part in VET programmes are free to choose the programme. But it is the business that provides apprenticeship places. Therefore students can only enter the programmes if there are enough available places in the apprenticeship.

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

Which models of institutional frameworks for employer engagement work?

Bodies for employer engagement and representation can be established at various levels, depending on how policy making is structured in a given country (see Box 5.6 for country examples). They can be created at national level, according to industrial sectors, regionally structured or at the level of the individual institution (*e.g.* employer representation in school boards). While involvement at national level allows for the steering of VET policies more generally, employer engagement at school level can help to improve the concrete links between the workplace and schools, and encourage the exchange of teaching and training personnel as discussed in Section 3.1. Bodies organised by sector (for example in the construction sector) are particularly helpful in developing skills standards associated with qualifications.

Box 5.6 Examples of institutional frameworks for employer involvement

National level:

The **UK Commission for Employment and Skills, UKCES** is an employer-led body that has the task to advise ministers on strategy, targets and policies, monitor the VET system, and observe the performance of the Sector Skills Councils which are licensed by it. Launched in April 2008 following recommendations on a major report assessing UK's skills needs (the 2006 Leitch Review of Skills), UKCES is commissioned to assess the UK's overall progress towards fulfilling the skills targets set it the report. It is primarily composed of business leaders, and also has members drawn from the trade unions and local government.

The **Danish Advisory Council for Initial Vocational Education and Training** (*Rådet for de Grundlæggende Erhvervsrettede Uddannelser, REU*) comprises 25 members from the social partners, but also school leader and teacher associations as well as a number of members appointed by the Ministry of Education. It advises the Ministry of Education on all matters concerning the VET system, monitors existing programmes and labour market trends and on this basis recommends the establishment of new VET qualifications, the adaptation of existing ones or discontinuation.

The **Swiss partnership arrangements** between the Confederation, the cantons and the social partners are established by law. This co-operation is a fundamental principle of the VET system and is set forth in Article 1 of the Vocational and Professional Education and Training Act. In this arrangement, employers and trade unions have a direct role in VET policy making. Each of the partners has their own area of responsibility (the Confederation is responsible for strategic planning and development, the cantons for implementation and supervision and the social partners to determine course content and provision of apprenticeships in host companies) all major decision are discussed and taken jointly and all three partners are represented at national, cantonal and local level.

Sectoral level:

The **Australian Industry Skills Councils, (ISCs)** are privately registered companies run by industry-based boards of directors, but whose funding is provided substantially by the Australian Government. There are currently 11 national ISCs covering the skills needs of most of the Australian industry. Their tasks include provision of industry intelligence and advice to Skills Australia (an independent body providing advice to the government on current and future skills needs), government and enterprises on workforce development and skills needs; actively supporting the development of training products and services, including training packages; provision of independent skills and training advice to enterprises, including matching identified training needs with appropriate training solutions; and working with enterprises, employment service providers, training providers and government to allocate training places.

The **UK Sector Skills Councils, SSCs** are employer-led bodies that set training strategies for particular sectors of the economy. There are currently 25 licensed SSCs grouped in the Alliance of Sector Skills Councils and covering roughly 85% of the UK's workforce, representing the interests of small and large business. SSCs are charged with determining the skills offer for their vocational area. They 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 (*Regionaal Opleidingscentrum, ROC*), have representatives of (regional level) social partners in their supervisory board. ROCs supply all the vocational training schemes financed by the government at secondary level and provide adult education for a region. There are currently 46 ROCs in the Netherlands.

It is very difficult to design institutions for employer engagement if employers are not already organised into representative bodies. Relying on individual companies rather than employer associations has the disadvantage that the system may give undue influence to a few random (mostly big) companies instead of a representative body that can act on behalf of the rest. However, if employer organisations (rather than individual employers) are represented in government bodies, it is important that these organisations are truly representative and recognised as such by the great majority of individual employers. In the UK for instance, the quality of sectoral industry bodies (Sector Skills Councils) has been evaluated (SSDA, 2006). Since they have been found to vary substantially in terms of employer awareness and confidence in them, the UK Commission for Employment and Skills (see Box 5.6) has been commissioned to relicense them to ensure that they meet relevant criteria.

Trade unions balance employer influence

Trade unions also have a role to play in the process of VET policy making. As representatives of the work-force, they take part in negotiations about the design of VET policy. In Norway for instance, only the tripartite co-operation between the state, the employers and the unions creates sufficient legitimacy for the VET system to be established and operated effectively.

As argued in Section 2.2, trade unions can usefully balance the influence of employers. 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.

5.5 Tools to support policy: conclusion

Arguments and evidence

- Good data on the labour market outcomes of VET programmes are crucial to evaluate if programmes meet labour market needs, to inform student career choice, to adjust provision in VET institutions and government funding priorities.
- Currently, the quality and comprehensiveness of the collection and presentation of such data varies 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.

- Currently career guidance for VET students is patchy and sometimes uninformed by information about labour markets. Career councillors often lack VET specific preparation.
- Evidence is sometimes used inadequately for policy formulation, appraisal and evaluation.
- 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.

Policy tools: OECD recommendations

- Engage employers and unions in VET policy and provision and construct effective mechanisms to that end.
- Collect good data on the labour market outcomes of VET, and provide the capacity to analyse and disseminate that data.
- Provide career guidance accessible to all, informed by knowledge of labour market outcomes.

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Glossary

Main concepts

Apprenticeship: We follow the definition given by Ryan, (2000)[14] 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 recognized 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 benefits 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 competencies 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.

14 Ryan P, (2000), The Institutional Requirements of Apprenticeship: Evidence from Smaller EU Countries, *International Journal of Training and Development*, 4, 1, p. 44.

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 VET 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 VET 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 VET 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 competencies 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, 2007)

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.

VET 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 competencies required in particular occupations or trades. VET 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 VET programme it should comprise at least 25% of the vocational and technical content. In comprehensive systems when students choose among general and vocational courses, VET 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 organizations, 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.

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Learning for Jobs

OECD POLICY REVIEW OF VOCATIONAL EDUCATION AND TRAINING: INITIAL REPORT

Strong workplace skills support economic growth, and vocational education and training systems worldwide are under intense pressure to deliver the skills required.

Learning for Jobs is based on an OECD study designed to help countries make their vocational education and training systems more responsive to labour market needs. The report sets out a set of key policy recommendations.

To meet labour market needs: Offer a mix of vocational programmes reflecting student preferences and employers' needs. In addition to training on specific skills to meet employers' immediate needs, provide transferable skills to support occupational mobility. Beyond secondary level, share costs among government, employers and students based on benefits obtained.

To sustain the workforce of teachers and trainers: In vocational institutions, promote partnerships with industry, encourage part-time work, and promote flexible pathways of recruitment. In the workplace, provide appropriate pedagogical preparation to those responsible for trainees and apprentices. Nationally, adopt a standardised assessment framework.

To promote workplace training: Offer sufficient incentives for both employers and students to participate in workplace training. Ensure that training is of good quality, with effective quality assurance and contractual frameworks for apprentices.

To respond to the economic crisis: Sustain workplace training and meet the increased demand for full-time vocational education and training.

To develop tools for policy: Engage employers and unions in vocational policy and provision. Collect and analyse data on the labour market outcomes. Provide career guidance accessible to all, informed by knowledge of labour market outcomes.

For the *Learning for Jobs* project, OECD is reviewing vocational education and training policy 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). Short reports on Chile and the People's Republic of China are also being prepared. This initial report is being made available on the OECD website. The final report will be published by the OECD in late 2010.

OECD

www.oecd.org/edu/learningforjobs