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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