OECD Reviews of Vocational Education and Training

Skills beyond School

SYNTHESIS REPORT

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Foreword

Skills are critical to economic growth and social well-being. Although initial vocational training at upper secondary level provides useful skills, in many jobs where demand is fast-growing – ranging from healthcare technicians to junior managers – such basic vocational training is no longer enough. Indeed, higher level professional, managerial and technical skills are increasingly required. In the United States, it is estimated that one third of all vacancies by 2018 will call for some post-secondary qualification, but not necessarily the completion of a four-year degree.

Based on a series of 20 country studies, this synthesis report of Skills beyond School *looks at how OECD countries are responding to this growing demand for skills, and the further steps they need to succeed. The report underlines many challenges: while some countries have thriving post-secondary vocational sectors, others have found it difficult to find a place for shorter (one-or two-year) programmes in competition with better known academic qualifications. The engagement of the social partners – employers and trade unions – is as vital as it is sometimes elusive. Vocational training qualifications are sometimes outdated or lack currency in the labour market.*

This study identifies good practices and puts the spotlight on those countries that are making progress. Still, it argues that countries now need to step up their efforts to deliver higher quality post-secondary vocational programmes. This means programmes that integrate an element of work-based learning and foundation skills of literacy and numeracy, teachers who are well-versed in the techniques of modern industry (as well as in teaching ability), and well-prepared school and college leaders. It also implies strong qualifications (prepared with the involvement of employers), guaranteeing possession of a relevant skillset upon completion, effective career guidance for students based on good data about the labour market outcomes, and clear pathways from the vocational programmes to higher and academic education.

This exercise is just one part of the wider OECD fast-developing programme of work on skills, marshalled under the Skills Strategy *and including the OECD's Survey of Adult Skills (PIAAC). This multi-stranded programme, drawing on the strengths of all the different component parts of the OECD, aims to help countries to build and use skills in the interests of all their citizens.*

Angel Gurría,
OECD Secretary-General

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Throughout this study, the OECD secretariat has received essential guidance and support from the Group of National Experts on Vocational Education and Training, with a particular debt to the chair Stefan Wolter and vice-chair Johan Uvin. The national authorities generously facilitated the country visits, and particular thanks is owed to national co-ordinators, those who commented on the draft review texts and those who prepared background reports. These included in Austria Reinhard Nöbauer, Arthur Schneeberger, Kurt Schmid and Alexander Petanovitsch; in Belgium-Flanders Naomi Wauterickx; in Canada Marie Lavallée and Noel Baldwin; in Denmark Anne Kristine Andersen; in Egypt Reem Derbalaa and Jean Thomas; in Germany Sonja Baron, Gerd Roser and Ute Hippach-Schneider; in Iceland, Arnór Guðmundsson and Stefan Stefansson and Skulina Kjartansdottir; in Israel Shmuel Pur, Rita Golstein-Galperin, Yotam Eyal and Judith King; in Kazakhstan Meruert Kenzhetayeva and Yerbol Moldakassimov; in Korea Hyung-Man Kim; in The Netherlands Marc Van der Meer and Hester Smulders; in Romania Gabriela Ciobanu and Dana Stoie; in South Africa Nolitha Vukuza-Linda, Gerda Magnus and Monica Koen; in Sweden Carina Linden and Stefan Skimutis; in Switzerland Laura Antonelli, Bernhard Beutler and Franziska Schwarz; in Spain Rosario Esteban; in the United Kingdom as a whole Katherine Chapman and Alison Morris, in England Jim Hillage and Andrew McCoshan; in Northern Ireland Victor Dukelow and Alan Ramsey, and in Scotland Stuart King; in the United States Johan Uvin, Mary Alice McCarthy, Lisa Hudson and Tom Weko in the federal government, Amy Albee and Kathleen Taylor in Florida, Lynn Gilli in Maryland, and Bryan Wilson in the state of Washington.

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Table of contents

Table

Figures

Summary and policy recommendations

The hidden world of professional education and training

Post-secondary vocational education and training plays an under-recognised role in country skill systems

School and university, and the well-trod path between them, play a dominant role in thinking about education policy. But outside these two institutions there exists a less well understood world of colleges, diplomas, certificates and professional examinations – the world of post-secondary vocational education and training. Many professional and technical jobs require no more than one or two years of career preparation beyond upper secondary level, and in some countries as much as one-quarter of the adult workforce have this type of qualification (see Figure 1). Nearly two-thirds of overall employment growth in the European Union (EU25) is forecast to be in the "technicians and associate professionals" category – the category most closely linked to this sector (CEDEFOP, 2012). A recent US projection is that nearly one-third of job vacancies by 2018 will require some post-secondary qualification but less than a four-year degree (Carnevale, Smith and Strohl, 2010). The aim of this OECD study (see Box 1) is to cast light on this world, as it is large, dynamic, and of key importance to country skill systems.

Post-secondary vocational programmes requiring more than six months full-time education were examined

In this report, post-secondary vocational education and training includes the programmes and qualifications that prepare students for particular occupations or careers that are beyond upper secondary level, and that would normally require at least six months full-time preparation. Higher level vocational qualifications, including professional bachelor degrees, are included in this definition but are not the main focus. These programmes provide higher-level, job-specific training for young school leavers; upskilling for working adults in mid-career; second chances for working adults who dropped out of earlier education; and opportunities for career shifts or to support a return to the labour market. The Survey of Adult Skills, a product of the OECD Programme for the International Assessment of Adult Competencies (PIAAC), has been used to estimate numbers in this sector by excluding general academic qualifications from ISCED 4 and 5B (see Figure 1).

Box 1. **Skills beyond School: The OECD study of post-secondary vocational education and training**

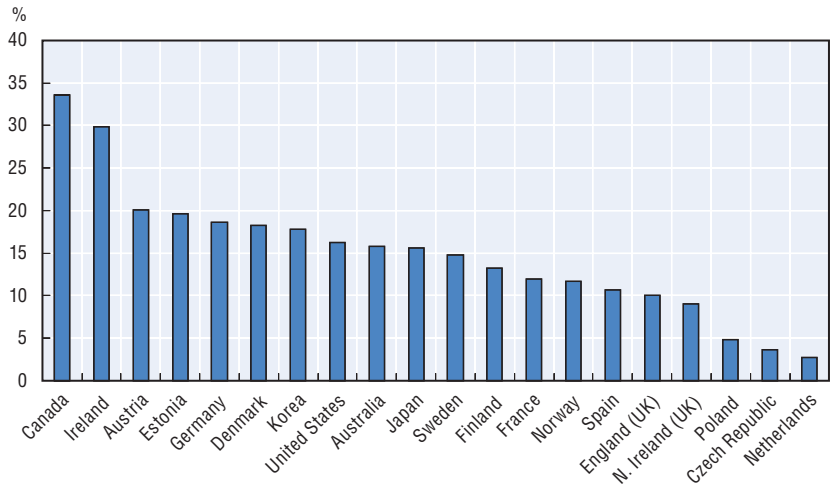
This study addresses the policy challenges arising from the increasing demand for higher level technical and professional skills. It builds on the success of the OECD's previous study, *Learning for Jobs,* which examined vocational education and training policy at upper secondary level through 17 country reviews and a comparative report.

For the purposes of *Skills beyond School,* 20 separate country studies, involving country visits, analyses and published reports, were pursued. Full country policy reviews were conducted in Austria, Denmark, Egypt, Germany, Israel, Kazakhstan, Korea, the Netherlands, South Africa, Switzerland, the United Kingdom (England), and the United States (with case studies of Florida, Maryland and Washington State). Shorter exercises leading to a country commentary were undertaken in Belgium (Flanders), Canada, Iceland, Romania, Spain, Sweden and in Northern Ireland and Scotland in the United Kingdom. Background reports describing post-secondary systems were prepared for these countries and, in addition, for France and Hungary. These country studies, alongside a wide range of other evidence, provide the foundation for the present synthesis report.

Source: OECD (2010), *Learning for Jobs*, *OECD Reviews of Vocational Education and Training*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264087460-en*. See also: *www.oecd.org/education/vet*.

Figure 1. **Professional education and training[1] qualifications in the labour force**

Percentage of adults aged 20-45 who have short-cycle professional education and training as their highest qualification



1. For a definition and explanation see Box 1.4.

Notes: These data identify vocational post-secondary programmes by excluding clearly general academic qualifications (according to field of study) in ISCED 4 and 5B.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink *http://dx.doi.org/10.1787/888933098440*

The guiding theme of this report is the need to work with social partners to ensure training provision matches the needs of the labour market

One of the main findings of the *Learning for Jobs* study was that nearly all countries face challenges in ensuring that vocational education and training systems respond effectively to the needs of the labour market. Much of the burden of policy reform falls on measures to engage industry stakeholders and develop and sustain vocational systems in close partnership with those stakeholders. At post-secondary as at upper secondary level, this requirement forms a guiding theme in response to some perennial challenges. Sometimes curricula and the mix of provision are determined by students and the limitations of the training system, and not sufficiently driven by fast-changing industry requirements. Sometimes the training workforce is insufficiently abreast of these requirements. Work-based learning is too often weak and unsystematic. Employers and trade unions are sometimes too remote from the development of qualifications, so that they end by having limited currency in the labour market.

There are also challenges specific to the post-secondary sector

But there are also challenges which are more specific to the post-secondary level. Often the sector is highly fragmented, with programmes uncomfortably poised between schools and universities, with qualifications that may not be well understood within the country – and certainly not internationally. Nomenclature is variable, and the institutional basis for the sector sometimes uncertain. Qualification systems and frameworks do not always help transparency. The needs of adults for more flexible modes of study are sometimes unmet. Effective transitions and articulation with other sectors of education and training are often elusive. The potential benefits of competence-based approaches are not always fully realised. This report explores these challenges and proposes policy solutions, drawing on extensive country experience.

Enhancing the profile of professional education and training

Stronger nomenclature would enhance the profile and brand image of the sector

Post-secondary vocational programmes go by a host of different names in different countries, hampering their capacity to compete with clearer brands, such as academic degrees. A clearly recognised international nomenclature would improve their status and make comparison easier. The Swiss terminology of "professional education and training" has been road-tested and could be adopted internationally.

Recommendation: "Professional education and training" should become the internationally accepted description of substantial post-secondary vocational programmes (more than six months full-time).

Institutional and funding barriers need to be overcome

Short-cycle (less than bachelors' level) professional education and training programmes have been most successful in institutions separate from conventional universities and with a separate funding stream. In many countries new initiatives have successfully established higher education institutions, such as the universities of applied science, with the mission of providing bachelor programmes in technical and professional areas. Some countries have realised synergies and economies of scale through careful orchestration of institutional mergers. Often, public funding for post-secondary vocational programmes involves a mix of funding streams, and these need to be consistent with public support for tertiary education.

Recommendations: Professional education and training needs an institutional base that: a) offers short-cycle professional programmes in a tier of institutions separate from universities; b) makes use where relevant of the successful model of universities of applied science; c) consolidates training providers into institutions of adequate size; and d) provides a consistent framework of public funding for professional education and training, avoiding distortions, and backed by quality assurance.

In many countries the governance of post-secondary professional training involves a complex fabric of agencies, reflecting a division of responsibilities between different ministries, the relative autonomy of post-secondary institutions and the separate roles of private training providers, employers and trade unions. Such decentralised governance has advantages in terms of diversity and innovation, but it may confuse students and employers, involve some duplication of tasks such as curriculum design, and complicate transitions.

Recommendation: Ensure that there is an institutional framework to co-ordinate professional education and training, engaging employers and organised labour, so that programmes and qualifications are comprehensible and accessible to key stakeholders.

ISCED 2011 should improve international statistical comparisons of professional education and training

In place of the current ISCED 1997 categories which do not adequately separate out vocational programmes at post-secondary level, ISCED 2011, to be implemented from 2014, should, at least in principle, do a better job of identifying professional education and training. In some countries professional qualifications awarded by industry associations are not included in national education statistics, distorting both national and international comparisons.

Recommendation: Ensure that implementation of ISCED 2011 delivers a consistent and accurate classification of vocational programmes. Develop new indicators to evaluate the effectiveness of professional education and training. Improve the collection of data on industry-led professional examinations.

Three key elements of quality

The great benefits of work-based learning need to be realised systematically in post-secondary programmes

The workplace provides a strong learning environment, and facilitates recruitment; while trainees contribute to output. Work-based learning opportunities are also a direct expression of employer needs. At post-secondary level, only some countries systematically integrate work-based learning into their programmes as a quality assured and credit-bearing element. Where work-based learning is mandatory, public funding is limited to training institutions willing to develop the partnerships with employers that support work placements, giving employers valuable influence over training provision.

Recommendation: All professional education and training programmes should involve some work-based learning as a condition of receiving government funding. The work-based learning should be systematic, quality assured and credit-bearing.

Vocational teachers need both teaching skills and up-to-date industry knowledge and experience

Often there are challenges in recruiting and retaining vocational teachers who meet the demanding twin requirements of pedagogical skills and practical professional expertise. Keeping practical knowledge of the workplace up-to-date is also a major challenge. Directly recruiting practitioners from industry in mid-career can be allied with part-time working arrangements that allow teacher-practitioners to continue to work in their field. These strategies require a flexible framework of pedagogical preparation and strong leadership in professional training institutions to make the best use of a mixed teaching team.

Recommendation: Ensure that the workforce in professional training institutions benefit from a strong blend of pedagogical skills, industry experience and academic knowledge. Adapt qualification requirements to that end.

Basic skills are critical both for labour market success and to support further learning

Basic skills of literacy and numeracy are of increasing importance, both as a support for further learning and because of growing technical requirements in the workplace. But results from the OECD Survey of Adult Skills show that some adults – even some with post-secondary qualifications – have weak basic skills. Teaching basic skills within vocational programmes presents many challenges, particularly when students have not pursued academic styles of classroom learning for some years, or when they have a negative past experience of such learning. One promising approach is to integrate basic skills with vocational training so that these skills are acquired in meaningful practical contexts.

Recommendation: Professional education and training programmes should ensure adequate literacy and numeracy skills among their students alongside occupation-specific competencies. This means assessing basic skills at the outset of programmes, addressing weaknesses, and integrating basic skills development into professional programmes.

Transparency in learning outcomes

Strong qualifications need employer engagement, limitations on their number, and effective assessment

Good qualifications signal the skills needed for the job, letting employers recruit the right people and place them well. But sometimes qualifications lack value, because they fail to signal the right skillset, because employers have not been involved in their design, or find an over-complex set of qualifications too confusing. National consistency in qualifications can be balanced by local flexibility in part of the curriculum, allowing employers to engage in qualification development both collectively, at the national level, and individually and locally to ensure relevance to local employers.

Recommendation: Build qualifications that are meaningful to employers and useful to students by fully involving labour market actors in their design, updating and delivery; ensure the qualification system delivers a manageable number of qualifications, avoiding proliferation and overlaps; the content of qualifications should be, so far as possible, nationally consistent while allowing an element of local flexibility.

A focus on learning outcomes, supported by strong assessments, can yield efficiencies

A traditional qualification is obtained through a set programme of study within a defined institution. Relaxing those requirements in favour of an emphasis on learning outcomes (regardless of how they are realised) could yield multiple efficiencies. This depends on good assessments of learning outcomes. Credit can be given for pre-existing skills and knowledge through "recognition of prior learning", but educational institutions and employers sometimes have inadequate incentives to take advantage of this approach. Some industry-based qualifications employ direct tests of competence with limited programmatic requirements.

Recommendation: Flexible ways of recognising skills should be encouraged, including both recognition of prior learning and competence-based examinations, supported by strong assessments.

Effective assessment is the rock on which strong qualifications rest, confirming that qualified persons have the intended competences

It is difficult, and potentially costly, to conduct an effective assessment of the complex package of soft and hard skills making up an occupational skillset.

While good assessments are demanding, the incentives to pursue them can be weak. Qualification providers sometimes have incentives to lower standards and increase pass rates to make their qualification more appealing to students. This is a challenge to qualifications generally, but can be a fatal blow to competence-based qualifications.

Recommendation: Assessments need to be reliable, consistent and demanding so that the qualifications they support are credible proofs of competence.

Clearer pathways for learners

Upper secondary vocational tracks are reinforced by post-secondary options for their graduates

The strongest vocational systems offer a wide range of opportunities to qualified apprentices and other upper secondary vocational graduates. These help the architecture of the skills system by establishing a career structure for graduates of the initial system, supporting the training of apprentice trainers, and playing a key role in developing management skills.

Recommendation: To meet labour market needs and the aspirations of students, ensure that graduates from upper secondary vocational programmes have the opportunity to pursue higher-level vocational and academic qualifications.

Adult learners need flexible modes of study

Alongside school-leavers, entrants to post-secondary programmes include many older students, such as those seeking to deepen their professional skills, make a sideways career move, or return to work after a period of absence because of domestic responsibilities (see Figure 2 for an indication of the varying extent to which post-secondary vocational systems serve an adult student population). Such adults often have to balance their pursuit of further qualifications with the demands of work and home. Often they will only be able to study part-time, and pursue the components of a programme at their own pace. Distance learning may play a larger role. They may already have relevant skills and experience, covering some parts of the programme, which it would be wasteful to repeat. These requirements are very different from those of most school-leavers.

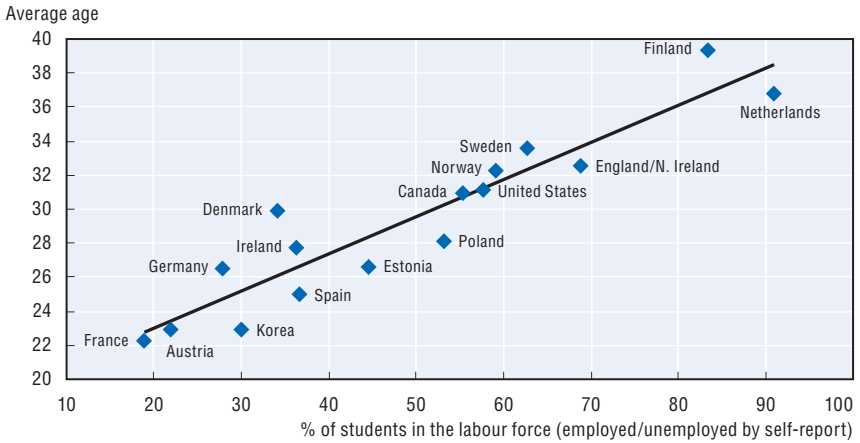
Recommendation: To meet the needs of adult learners, ensure flexible modes of study, including part-time and modular arrangements, distance learning and competence-based approaches.

Transition from professional education and training to academic programmes can be difficult

Graduates of short-cycle professional education and training often wish to continue into connected professional bachelor and other higher education programmes. While, ideally, their existing knowledge and skills will be recognised through access to the higher level and course exemptions, obstacles

Figure 2. **Older students tend to be in the labour force**

Average age of students aged 16-65 in professional training[1]



1. For a definition and explanation see Box 1.4.
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098459

are commonly reported. Sometimes there is unclarity about how different programmes relate to one another, and inadequate incentives for higher level institutions to offer course exemptions. The potential solutions are, first, measures to improve transparency in course content so that overlaps can be addressed through course exemptions and, second, co-ordination mechanisms to facilitate articulation arrangements. For graduates of professional education and training to progress successfully, their programmes need to ensure sufficient academic preparation, including basic skills, underpinned by quality assurance.

Recommendation: Build articulation frameworks to support transition from professional programmes to academic tertiary education. Underpin those frameworks with measures to ensure transparency and quality in the learning outcomes from professional education and training.

Effective career guidance is needed to help students navigate these pathways

Many countries have sought to widen access to post-secondary education in response to both rising student aspirations and labour market demand. But students can become disengaged because they find they have made a wrong career choice, or because they are not receiving sufficient support. While growth in post-secondary programmes is expanding opportunities, it is also increasing the complexity of the choices that young people need to make. With good career guidance and information, students' enrolment decisions and choices of subjects can reflect their needs, expectations and abilities.

Recommendation: Underpin pathways of progression with good-quality career guidance and information both before entering and during professional programmes.

Key characteristics of effective vocational systems

The OECD's two studies, Learning for Jobs *and* Skills beyond School, *suggest key qualities of strong vocational systems*

The findings of the OECD's recent work on post-secondary vocational education and training add to, and resonate with, results from earlier work on vocational programmes at the upper secondary level reported in *Learning for Jobs* (2010). The findings and recommendations of both cycles of country reviews have here been integrated to propose a set of key desirable characteristics of effective vocational systems. These include:

Deciding on provision and meeting needs: How the mix and content of vocational programmes are determined

- Mechanisms to ensure that the mix of vocational provision corresponds to the needs of the labour market.
- Adequate core academic skills, particularly literacy and numeracy built into vocational programmes.
- A range of programmes that offer opportunities for all and minimise dropout.
- Flexible modes of study suitable to adults with working and home commitments.
- Higher-level vocational qualifications, and avenues of progression from initial vocational programmes to both higher-level vocational and academic programmes.

Delivering quality: How vocational skills are imparted to learners

- High-quality apprenticeship systems, covering a wide range of professional domains and including higher-level apprenticeships.
- Work-based learning systematically integrated into all vocational programmes.
- A vocational teaching workforce that offers a balance of teaching skills and up-to-date industry knowledge and experience.

Using learning outcomes: How skills are assessed, certified and exploited

- Qualifications developed with labour market actors.
- Qualifications reflecting labour market needs that are nationally consistent but flexible enough to allow for a locally negotiated element.
- Qualifications systems and frameworks that keep qualification numbers manageable.

- High-quality assessments of vocational skills built into qualifications.
- Effective competence-based approaches, including both professional examinations and recognition of prior learning.

Supporting conditions: The policies, practices and institutions that underpin vocational education and training

- Vocational programmes developed in partnership and involving government, employers and trade unions.
- Effective, accessible, independent, proactive career guidance, backed by solid career information.
- Strong data on vocational programmes, including information on vocational programmes in international categorisations and labour market outcomes.
- Consistent funding arrangements so that choices are not distorted by the availability of funds.

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Chapter 1

The hidden world of professional education and training

School and university, and the well-trod path between them, play a dominant role in thinking about education policy. But separately from these two institutions there exists a less well understood world of colleges, diplomas, certificates and professional examinations – the world of post-secondary vocational education and training – which in this report will also be called "professional education and training". Many professional, technical and managerial jobs require no more than one or two years of career preparation beyond upper secondary level, and some countries have as much as one-quarter of the adult workforce with this type of short-cycle qualification. This chapter describes the role of programmes of this type and underlines their importance in country skills systems.

Post-secondary vocational education and training plays a much larger role in skill systems than is commonly realised, with, in some countries, up to one-quarter of the adult workforce having this type of qualification (see Figure 1.1). Although inadequately understood, this world is of key importance to the skills systems of OECD countries. This section defines this sector and describes its role.

The hidden world beyond and between school and university

The offer from university systems might encourage us to think that labour market demands for higher level skills grow neatly in chunks requiring three or four years of university education. But many professional, technical and managerial jobs require only one or two years of post-secondary career preparation, and employment growth in this sector is rapid. Nearly two-thirds of employment growth in the 27 EU countries over 2010-20 is forecast to fall in the "technicians and associate professionals" category – the category (one of nine) most closely linked to post-secondary vocational education and training (CEDEFOP, 2012). In the United States, in the decade to 2018, nearly one-third of job vacancies are projected to require a post-secondary qualification but less than a four-year degree (Carnevale, Smith and Strohl, 2010). This study explores how countries are responding, and should respond, to meet this demand (see Box 1.1).

Defining terms

In this report, "post-secondary vocational education and training" includes the programmes and qualifications that prepare students for specific occupations or careers, that are beyond upper secondary level, and that would normally require at least six months full-time or equivalent preparation. This definition recognises that many such programmes will involve flexible and modular components. For reasons to be explained in Chapter 2, it will be called professional education and training in this report. It includes three types of qualification:

- Post-secondary qualifications, requiring more than six months and less than three years of full-time study (or the part-time equivalent) – for example, the qualifications arising from professional academy programmes in Denmark, practical engineering programmes in Israel, and junior college programmes in Korea. Such "short-cycle" post-secondary vocational programmes will normally be at ISCED level 5 (under ISCED 2011), and at EQF level 5.

Box 1.1. **Skills beyond School: The OECD study of post-secondary vocational education and training**

This study addresses the policy challenges arising from the increasing demand for higher level technical and professional skills. It builds on the success of the OECD's previous study, *Learning for Jobs*, which examined vocational education and training policy, at upper secondary level through 17 country reviews and a comparative report.

For the purposes of *Skills beyond School*, 20 separate country studies, involving country visits, analysis and published reports, were pursued. Full country policy reviews were conducted in Austria, Denmark, Egypt, Germany, Israel, Kazakhstan, Korea, the Netherlands, South Africa, Switzerland, the United Kingdom (England), and the United States (with case studies of Florida, Maryland and Washington State). Shorter exercises leading to a country commentary were undertaken in Belgium (Flanders), Canada, Iceland, Romania, Spain, Sweden and in Northern Ireland and Scotland in the United Kingdom. Background reports describing post-secondary systems were prepared for these countries and, in addition, for France and Hungary. These country studies, alongside a wide range of other evidence, provide the foundation for the present synthesis report.

Source: OECD (2010), *Learning for Jobs*, *OECD Reviews of Vocational Education and Training*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264087460-en*. See also: *www.oecd.org/education/vet*.

- Vocational bachelor degrees, designed to prepare graduates for occupations or careers, and sometimes described as professional bachelor degrees. These degrees are often pursued in a dedicated tier of institutions akin to universities but separate from them – some *Fachhochschulen*[1] or universities of applied science, university colleges in Scandinavia, *Hogescholen* in the Netherlands, and polytechnics in Finland. In other cases they are undertaken in universities. Sometimes there is no strict dividing line between professional and academic bachelor degrees.
- Professional examinations (sometimes also described as industry certifications) – often free of requirements for fixed programmes of study. Examples include examinations for accountants, for master builders and proprietary software certifications. Found in many different countries, they typically involve a test or examination, organised by the relevant profession or industry linked to a particular occupation or competence within a profession. In some cases they are linked to "licensed" professions – where the qualification is a legal requirement. Here again the focus is on examinations commonly requiring at least six months or equivalent learning.

While this definition includes bachelor and higher degrees, the main focus of this study is on the shorter programmes, since this sector is important, fast-growing and insufficiently examined.

The role of post-secondary vocational programmes

This report looks at programmes that serve diverse purposes. Some provide higher level job-specific training for young upper secondary graduates (such as in teacher training and nursing programmes in university colleges in Denmark); some offer higher level skills for working adults in mid-career (for example industrial master examinations in Germany, which prepare skilled workers to be foremen); some offer second chances for working adults who dropped out of earlier education or training programmes (as often in the US community colleges).

In some countries with strong upper secondary vocational systems, including apprenticeships, a major role of the post-secondary system is to offer avenues of progression for graduates of initial vocational training (see Box 1.2 for the example of Germany, similar arrangements are in place in Austria

Box 1.2. **Professional education and training in Germany**

About 60% of young people in Germany pursue upper secondary vocational programmes, and about 13% of this group continue into professional education and training. In 2010, approximately 8% of Germany's adult population (over 15) were holders of mainly vocational (tertiary B) qualifications compared to 13% with mainly academic (tertiary A) attainment. Short-cycle professional education and training involves two main subsystems – advanced vocational examinations, representing roughly two-thirds of annual graduates, with *Fachschulen* qualifications, representing the other third.

Advanced vocational examinations are typically pursued after the completion of upper secondary vocational training (such as apprenticeship) and some years of relevant work experience, and reflect the classical progression from apprentice to *Meister*. *Meister* examinees have to show that they can pursue their profession independently, run their own business, and can train apprentices. These qualifications are now available, not only in technical professions but also in agricultural, commercial, manufacturing, and service-related sectors. The certified senior clerk (*Fachwirt/in*) rose in popularity by 45% between 2003 and 2010 to become the most common advanced vocational examination, followed by the certified industrial supervisor (*Industriemeister*) and the master of skilled trade (*Handwerkmeister*). In 2010, there were 212 federally regulated advanced vocational examinations and 3 112 examinations regulated by individual *Länder* chambers. The federal and the chamber regulations define admission requirements, examination arrangements and pass criteria. Boards of experienced examiners include equal numbers from the employers' and the employees' side and at least one vocational school teacher. Preparatory courses for examinations are not mandatory, but candidates almost always attend either part- or full-time courses offered by the chambers or private providers (of which there are over 15 000).

Box 1.2. **Professional education and training in Germany** *(cont.)*

***Fachschulen* (trade and technical school)** programmes offer management training, and require two years full-time or three to four years in part-time education. About one-third of the students are part-time, and their numbers have grown significantly. Entry to *Fachschule* requires a qualification in a field relevant to the intended specialisation and at least one year of work experience. Almost one-third of *Fachschulen* are privately run. At public *Fachschulen,* there are no tuition fees. Nearly two-thirds of the students are enrolled in courses in the fields of business and social care, while most of the remainder attended technical courses. *Fachschulen* are often co-located with upper secondary vocational schools and most *Fachschule* teachers also teach there. *Fachschule* curricula are developed by each *Land* but 20% of the syllabus may reflect local needs. *Länder* governments in consultation with local authorities and the *Länder* committees for vocational training (*Landesausschüsse für Berufsbildung*) determine the number of training programmes and available places.

Source: Fazekas, M. and S. Field (2013a), *A Skills beyond School Review of Germany*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202146-en*; Hippach-Schneider, U., et al. (2012) (eds.), *Getting Ahead though Advanced Vocational Training. German Background Report on the OECD study "Skills beyond School"*, BMBF, Bonn, *www.bmbf.de/pub/getting_ahead_through_advanced_vocational_training.pdf*.

and Switzerland). Conversely, in countries such as the United States, with limited systematic career training at the upper secondary level, post-secondary vocational programmes often represent the first and principal source of career training. These issues are further discussed in Chapter 5.

A statistical picture of professional education and training

While we know that the size of the post-secondary vocational sector varies greatly across countries, precise measures are not easy. International Standard Classification of Education (ISCED) categories do not yet offer internationally comparative data on the sector. Chapter 2 will discuss how recent reforms to ISCED (not yet fully implemented) should help to address this challenge in the future. This section offers some special tabulations from the Survey of Adult Skills (PIAAC) which seek to describe the sector, alongside some national statistics.

National measures

In some countries, one-quarter of the cohort pursues professional programmes

Post-secondary vocational programmes often play a large role. In the United States, around 12% of the labour force have a post-secondary certificate as their highest qualification, and certificate graduation rates are burgeoning – tripling in recent years; a further 10% have associate degrees (Kuczera and Field, 2013). In Austria, around 20% of the cohort graduate with

a post-secondary qualification from a vocational college (Musset et al., 2013). In France, in 2010-11 almost 360 000 students were enrolled in two-year professional programmes (*Brevet de technicien supérieur* and *Diplôme universitaire de technologie*), representing one-third of the students entering post-secondary education (Ministère de l'Éducation Nationale/Ministère de l'Enseignement Supérieur et de la Recherche, 2013). In Korea, roughly one-third of the youth cohort enters junior college or polytechnic programmes, dominated by two-year professional programmes (Kis and Park, 2012). In 2008/09 nearly 17 000 persons graduated with higher national certificates and diploma qualifications in Scotland, compared with 32 000 with bachelor degrees (Scottish Government, 2010). In Switzerland, around 15% of the entire cohort graduate through the professional education and training system, through professional college qualifications and industry-led federal exams (Fazekas and Field, 2013b).

In some other countries, while professional education and training is smaller in scale, it is rapidly growing. In Sweden, the numbers enrolled in higher VET programmes trebled between 2001 and 2011, while in Romania enrolments in "post-high school" grew from 44 000 in 2005/06 to 70 000 in 2010/11 (Ministry of Education and Research Sweden, 2013; NCDTVET Romania, 2013). All of the programmes mentioned here are substantial one-two-year post-secondary vocational programmes.

These developments are not universal. Among the countries examined in this review, Egypt, England, Iceland, Israel the Netherlands and Northern Ireland stand out as having more limited short-cycle professional participation, with university sectors and bachelor's degrees appearing to dominate provision. But these countries appear to be the exceptions to the rule.

Apprenticeship can also play a significant post-secondary role

In Ireland all apprenticeships are post-secondary, with a school-leaving certificate a pre-requisite (Kis, 2010). In Canada, a substantial proportion of apprentices have high school diplomas. Even in Germany, where apprenticeship is nominally at upper secondary level, the average age of a starting apprentice is nearly 20, while around 20% of starting apprentices already have the German upper secondary certificate (*Abitur*), which also grants entry to university (BIBB, 2013). In France, there were more than 110 000 apprentices at the post-secondary level in 2010-11, about 60% of them in two-year apprenticeships in the service sectors (see Box 1.3).

International measures: The Survey of Adult Skills (PIAAC)

A special PIAAC analysis allows international comparison of professional programmes

Professional education and training may be compared across countries with the help of new data from the Survey of Adult Skills (PIAAC). Given underlying weaknesses in the current ISCED definitions, a definition has been constructed

Box 1.3. **Higher apprenticeships in France**

Students in France can begin an apprenticeship at a variety of levels, including two-year post-secondary, bachelor and masters level qualifications. A contract is signed by the employer, the apprentice and the training institution. Apprentices – who have to be aged between 16 and 25 years old or unemployed, earn a percentage of the minimum wage for their work, based on their previous qualification and their age. Depending on the programme, apprentices alternate between academic and vocational courses and work-based training. Enterprises offering apprenticeships receive tax credits and social security exemptions (Ministère de l'Éducation Nationale/Ministère de l'Enseignement Supérieur et de la Recherche, 2013).

Although originally at upper secondary level only, higher level post-secondary apprenticeships were developed in France in the 1980s. Post-secondary apprenticeships have grown in popularity: in 2011-12, one-third of all apprentices were at the post-secondary level – more than 120 000 students, whereas that level represented less than 5% of apprentices in 1995-96 (RERS, 2013).

More than one out of two post-secondary apprentices were in services – notably in trade and administration in 2011-12. (By contrast, three out of four apprentices at the upper secondary level were in technical and industrial fields.) 82% of two-year and professional bachelors post-secondary apprentices were employed seven months after graduation in 2012. Some evidence shows that employment rates are higher for graduate apprentices than for students with equivalent school-based qualifications (Abriac, Rathelot and Sanchez, 2009).

Source: Direction de l'Évaluation, de la Prospective et de la Performance (2013), *L'insertion professionnelle des jeunes sortants d'apprentissage, sept mois après la fin de leurs études* ; Abriac, D., R. Rathelot and R. Sanchez (2009), *L'apprentissage, entre formation et insertion professionnelles*; Ministère de l'Éducation Nationale/Ministère de l'Enseignement Supérieur et de la Recherche (2013), *Apprendre au-delà de l'école : Contribution de la France, Examens de l'enseignement et la formation professionnels (EFP) au niveau postsecondaire* ; Le Rhun B. and P. Pollet (2011), *Diplômes et insertion professionnelle, www.insee.fr/fr/ffc/docs_ffc/ref/fporsoc11e_ve23educ.pdf* ; Repères et références statistiques sur les enseignements, la formation et la recherche (RERS) (2013), *Repères et références statistiques sur les enseignements, la formation et la recherche – édition 2013*, Ministère de l'Éducation Nationale, Ministère de l'Enseignement Supérieur et de la Recherche, *www.education.gouv.fr/cid57096/reperes-et-references-statistiques.html*.

which approximates to vocational programmes by excluding the clearly general academic qualifications in ISCED 4 and 5B (see Box 1.4).

In Canada nearly one-third of students aged 18-65 are enrolled in short-cycle professional programmes, around double the enrolment rate of England, the Netherlands and Northern Ireland (see Figure 1.1), a finding which is reflected in the relevant country reviews (see for example Musset and Field, 2013 and Fazekas and Litjens, 2014). Countries with more students in post-secondary

Box 1.4. **Using the Survey of Adult Skills (PIAAC) to measure professional education and training**

The Survey, an outcome of the OECD Programme for the International Assessment of Adult Competencies (PIAAC), assesses the skills of adults in literacy, numeracy and problem solving in technology-rich environments. More than 160 000 adults aged 16 to 65 were surveyed in 24 countries and regions.

National programmes are coded according to ISCED 1997. Since ISCED 4, 5B and 5A each include both general and vocational programmes, short-cycle post-secondary vocational programmes were approximated by modifying ISCED 4 and 5B by reference to the field of study. The Survey provides information on the areas of studies for current education and for the highest qualification. There are nine areas of study: of them, "general", "humanities, languages and arts" fields of study were excluded as clearly non-vocational. Two further categories "social science, business and law" and "science, mathematics and computing" were included, while recognising that some of the students will not be pursuing genuinely vocational programmes. The other fields of study were: "teacher training and education science", "engineering, manufacturing and construction", "agriculture and veterinary", "health and welfare" and "services".

Note: OECD countries that participated in the first round of the Survey are included in the analysis. The number of observations from Italy and the Slovak Republic was insufficient to include in the analysis; for the same reasons, data from England and Northern Ireland could often not be shown separately.

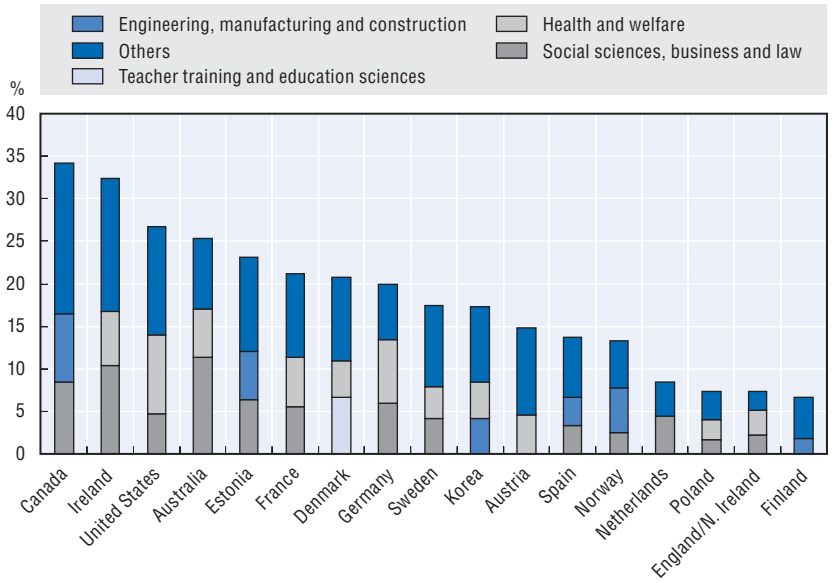
Source: OECD (2013a), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris *http://dx.doi.org/10.1787/9789264204256-en*; OECD (2013b), *The Survey of Adult Skills: Reader's Companion*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264204027-en*.

vocational education and training naturally tend to have more graduates with this type of qualification (see Figure 1.2). Any mismatches – for example a surprisingly large number of students in a programme relative to graduates – could indicate growing take-up of such programmes among younger people, a high dropout rate, or more frequent transition to higher qualifications. In the United States 13% of graduates from professional programmes report studying at bachelor degree-level or above, compared to 4% in Denmark and 2% in Korea (Survey of Adult Skills [PIAAC], 2012).

For current students, fields of study in short-cycle professional programmes are set out in Figure 1.1 above and in Table 1.1. Among current students, health and welfare topics were very important, reflecting more recent growth in these sectors. Among graduates, technical (engineering, manufacturing and construction) and business (social science, business and law) were the most common fields of study (see Figure 1.2).

Figure 1.1. **How many students and what do they study?**

Students aged 18-65 in short-cycle professional education and training[1] as a percentage of all students, indicating largest field of study



1. For a definition and explanation see Box 1.4.
Source: Survey of Adult Skills (PIAAC) (2012).

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Labour market outcomes

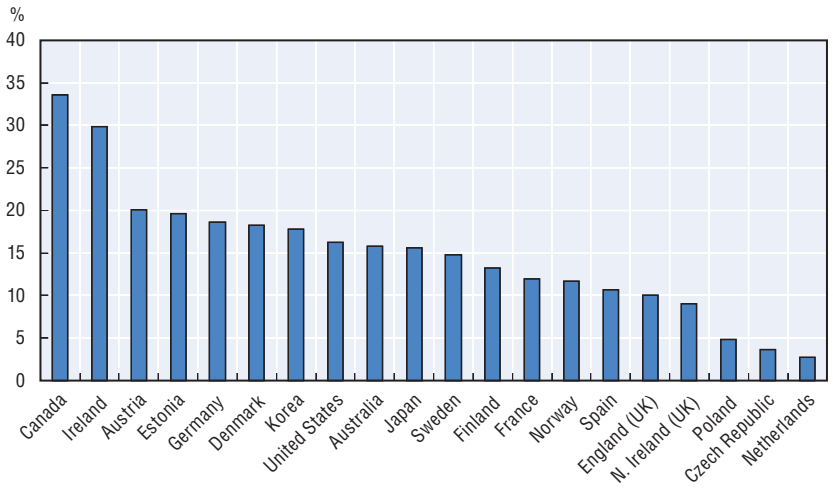
Professional education and training gives positive labour market returns

Labour market returns are a key indicator of the value of vocational programmes, but here too the data are sparse, given the limitations of current ISCED categories. For example, the modest returns overall to tertiary-type B (vocationally oriented) qualifications in the United States (largely associate degrees) mask the fact, evident from national level analysis, that the returns from vocational associate degrees are much better than for academic associate degrees (see Kuczera and Field, 2013).

For these reasons, a special analysis of PIAAC data was pursued. In countries where data are available, short-cycle professional programme graduates commonly earn around 10-20% more than those with just upper secondary qualifications, though less than those with tertiary qualifications (see Figure 1.3). But these returns vary a lot between countries, and between different programmes and fields of study (see Table 1.1), with short-cycle professional qualifications in engineering, manufacturing and construction, and in science,

Figure 1.2. **Professional education and training[1] qualifications in the labour force**

Percentage of adults aged 2045 who have short-cycle professional education and training as their highest qualification



1. For a definition and explanation see Box 1.4.
Notes: These data identify vocational post-secondary programmes by excluding clearly general academic qualifications (according to field of study) in ISCED 4 and 5B.
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098440

mathematics and computing, yielding the highest earnings in some countries (Survey of Adult Skills [PIAAC], 2012). Such heterogeneity within countries was well illustrated by a recent study of certificate programmes in the United States (Carnevale, Rose and Hanson, 2012).

In some cases, the returns to short-cycle professional qualifications approach or match those of tertiary graduates. After taking into account numeracy skills, the difference becomes insignificant in the Netherlands, Northern Ireland, Norway and Sweden. Conversely, the premium attached to professional as opposed to upper secondary qualifications becomes negligible in the United States and Spain when numeracy skills are held constant.

The employment rates of graduates from professional programmes were 65% in Poland and 70% in Spain. In Austria, Northern Ireland and Sweden many graduates of professional programmes are inactive in the labour market, because they are enrolled in further education and training. Conversely in Korea, very few people are in this situation; in Korea post-secondary graduates often delay their entry to the labour market until they find a job that meets their expectations (see Kuczera, Kis and Wurzburg, 2009; Kis and Park, 2012).

Table 1.1. **Fields of study**

Percentage breakdown of the fields of study for those aged 20-45 years-old with short-cycle professional education and training[2] as their highest qualification

	Teacher training and education science	Social science, business and law	Science, mathematics and computing	Engineering, manufacturing and construction	Agriculture and veterinary	Health and welfare	Services
Australia	2	38	6	16	3	15	19
Austria	10	23	3	29	4	14	17
Canada	5	19	13	26	3	17	16
Denmark	25	18	11	11	3	23	11
England (UK)	9	34	10	25	2	20	0
Estonia	4	30	5	30	3	9	19
Finland	3	33	1[1]	26	4	21	12
France	1[1]	27	15	19	5	19	14
Germany	1	33	4	27	3	25	7
Ireland	4	21	15	23	4	14	18
Japan	16	10	2	21	3	28	19
Korea	11	10	17	34	1	16	11
Norway	2	21	7	42	5	14	8
Poland	3	20	15	26	4[1]	22	11
Spain	5	21	14	37	1	12	10
Sweden	8	28	11	32	4	11	6
United States	7	15	16	18	2	25	17

1. Results unreliable because of small cell size.
2. For a definition and explanation see Box 1.4.
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098630

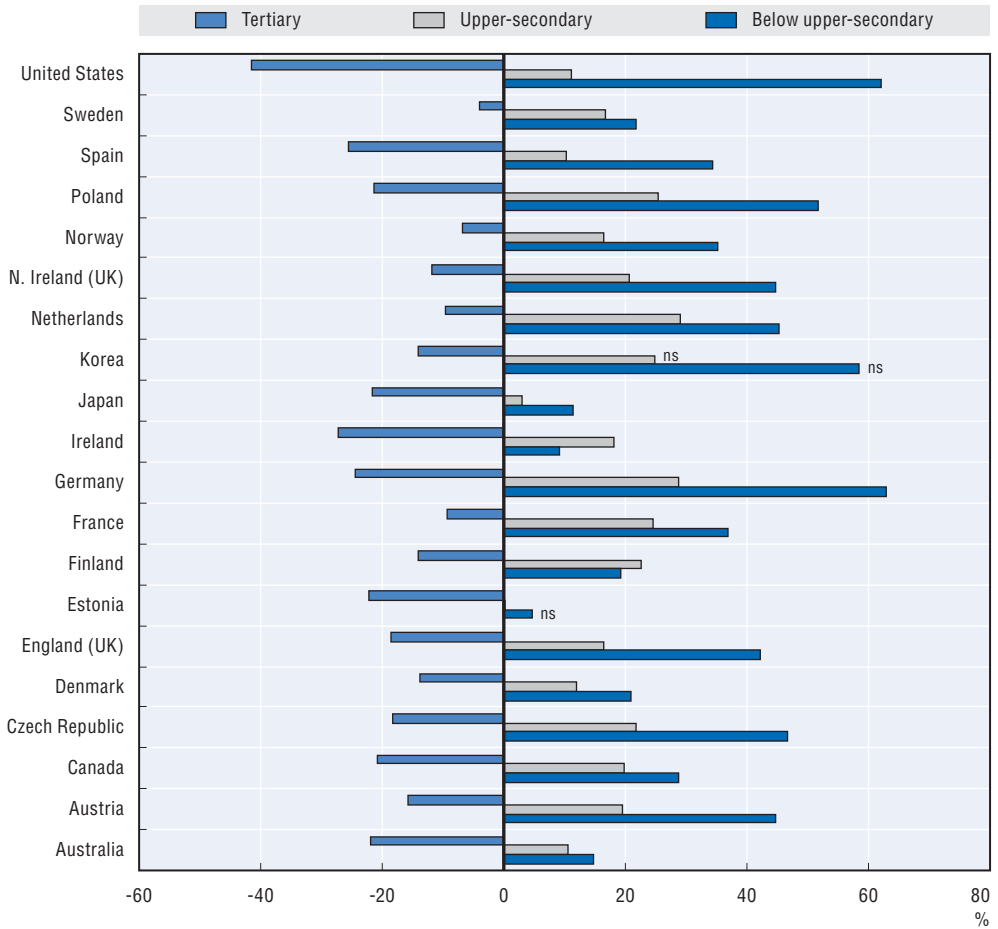
In most countries, the addition of a professional to an upper secondary qualification improves protection against unemployment and inactivity. Often the labour market situation of graduates from short-cycle professional programmes is not very different from that of tertiary graduates, but sometimes it is better – in the United States graduates of professional education and training are less likely to be inactive and not in education than tertiary graduates (Survey of Adult Skills [PIAAC], 2012).

The structure of this report

One of the main findings of the *Learning for Jobs* study (OECD, 2010) was that nearly all countries face challenges in ensuring that vocational education and training systems respond effectively to the needs of the labour market. Sometimes curricula and the mix of provision are too constrained by the interests of training providers and not sufficiently driven by fast-changing industry requirements. Sometimes the training workforce is insufficiently abreast of

Figure 1.3. **Wage returns from professional education and training**[1]

Earnings of graduates (aged 16-45) of short-cycle professional programmes compared to earnings of graduates with other levels of education



1. For a definition and explanation see Box 1.4.

Notes: Hourly earnings with bonuses. Difference in earnings is expressed in % (no difference = 0%). ns – not statistically significant. Those still enrolled in education are excluded.

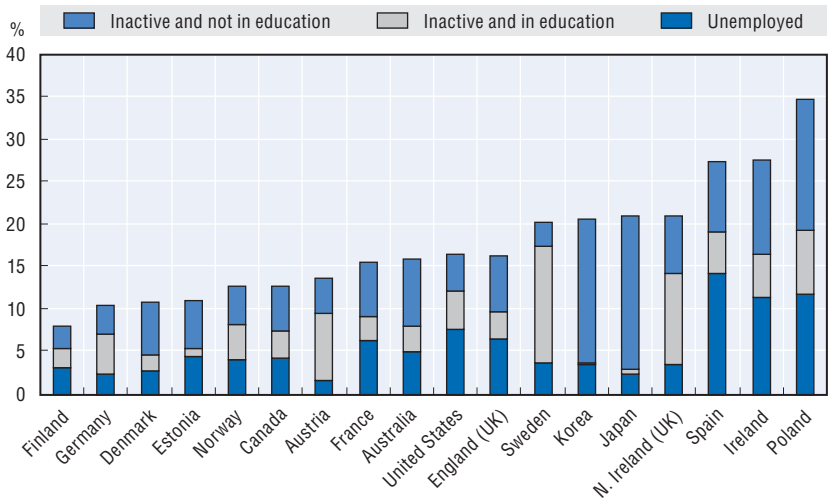
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098497

these requirements. Work-based learning is too often weak and unsystematic. Employers and trade unions may be too remote from the programmes and their development, so that the qualifications end by having limited currency in the labour market. Much of the burden of policy reform therefore falls on measures to develop and sustain vocational systems in close partnership with industry stakeholders. At the post-secondary, as at the upper secondary level of education, the same need to respond to labour market requirements is central, and this forms a guiding theme of this report. The policy measures necessary to address

Figure 1.4. **Labour market circumstances of graduates**

16-45 year-olds. Share of inactive and unemployed among short-cycle professional[1] graduates



1. For a definition and explanation see Box 1.4.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098516

these challenges have been described in the earlier *Learning for Jobs* study, but in some cases the analysis is pursued further in the current report.

But there are also challenges that are more specific to, or much more salient at, the post-secondary level. Often, the post-secondary vocational sector is highly fragmented, with qualifications that may not be well understood within the country – and certainly not internationally. Nomenclature is variable, and the institutional basis for the sector sometimes uncertain. Qualification systems and frameworks do not always help transparency. The needs of adults for more flexible modes of study are sometimes unmet. Effective transitions and articulation with other sectors of education and training are often elusive. The potential benefits of competence-based approaches are not always fully realised.

This report explores all these challenges and proposes policy solutions, drawing on the extensive range of country experience examined in the course of this exercise. Chapter 2 looks at the identity of professional education and training and proposes new terminology for the sector; it also argues for better data and a clear institutional base for provision. Chapter 3 examines the quality of programmes, and argues that measures in three areas – work-based learning, teacher preparation and career development, and attention to basic skills – would sustain and enhance quality. Chapter 4 looks at qualifications, and makes recommendations designed to make qualifications stronger, to make full use of competence-based approaches, and to strengthen assessment systems. Chapter 5 explores transitions, at different routes into professional education

and training, taking into account the needs of adults, and transitions into more academic programmes, underlining the importance of clear learning and career pathways, and of high-quality career guidance. Chapter 6 puts the findings of this report alongside that of the earlier study at upper secondary level. The conclusions of the two reports are then synthesised in a set of characteristics of strong vocational systems.

Note

1. In Switzerland, *Fachhochschulen* are not regarded as part of the professional education and training system.

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Chapter 2

Enhancing the profile of professional education and training

This chapter looks at ways of strengthening the profile of what we awkwardly call "post-secondary vocational education and training". It proposes first, that the sector should be described as "professional education and training"; second, that the scale of the sector needs to be adequate in each country and this depends on an effective institutional and funding structure; and third, that better data are needed to measure and evaluate the sector and compare it internationally.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Establishing clear international terminology

This section argues that the diverse vocabulary used to describe the different programmes and institutions of post-secondary vocational education and training needs to be augmented, and in some cases replaced, by internationally accepted terminology. This should be "professional education and training", building on the language used in Switzerland. This common terminology should act to clarify and enhance the status of programmes in this sector.

Issues and challenges: Confusing terminology

Marketing experts know that a good name for a product or service wins half the battle. Yet the words used to describe post-secondary vocational programmes and the institutions that deliver them are confusing, especially when compared internationally. Among qualifications, there are certificates, certifications (often associated with industry qualifications), diplomas, associate and foundation degrees, "professional" and other bachelor degrees. Among institutions there are colleges, academies, polytechnics and universities of applied science. Different expressions in different languages add to the ramifications. While the vocabulary may be understood by insiders familiar with local systems, it will often be obscure to prospective students or employers, undermining the value of the programmes, particularly across national boundaries.

To make matters worse, these programmes often sit awkwardly across boundaries: between higher education and other presumably lower forms; between academic and non-academic; between education and training; between degrees and qualifications of lower status; between tertiary and non-tertiary (but post-secondary) education, and between universities and other sorts of institution. These boundaries are often contested, not least because they are more attractive to those on the favoured side of the boundary than to those left out in the cold. Post-secondary vocational education and training, uncomfortably straddling these contested boundaries, inevitably finds it hard to define its own territory.

In an increasingly globalised labour market, this tangle of nomenclature obstructs the establishment of a clear brand to compete with others, such as academic bachelor degrees, which have a clearer and better-recognised international identity. The unintended and undesired effect is to discourage some good quality but less well-recognised vocational programmes and

qualifications. International branding matters not only to those who wish to use their qualifications in other countries, but also in international enterprises where the nuances of national qualifications will be obscure to expatriates in the management tier.

Recommendation: Professional education and training

"Professional education and training" should become the internationally accepted description for substantial post-secondary vocational programmes (equivalent to more than six months full-time).

Explanation and country approaches: Developing terminology based on country experience

A good name for the sector would improve its profile and status and make it easier to compare across countries. Few countries have clear terminology to describe the entire sector (as opposed to particular programmes and qualifications). One exception is Switzerland, where "professional education and training" describes both programmes in professional colleges, and the set of examinations that corresponds to Swiss federal diplomas and advanced federal diplomas. The expression has therefore been road-tested in Switzerland with translations[1] into French, German, and Italian. It is not anticipated that countries would change their domestic usage – but at least in discussion across countries, this terminology would provide a common point of reference, supporting international recognition of national vocational qualifications.

Excluded from this description are the shorter vocational programmes (less than six months), that often respond to highly specific employer needs. The definition also includes higher level professional training, including at bachelor, masters and Ph. D. level.

From this point forward, this report will use this terminology. It will also refer in a more abbreviated way to "professional programmes" and "professional training". "Short-cycle" professional education and training will be used to describe vocational programmes at ISCED level 5, and at EQF level 5, below bachelor level.

Strengthening the institutional and funding base

Developing professional programmes depends on strong institutions and effective funding. This section argues that while short-cycle professional programmes need a location in non-university institutions, vocational bachelor programmes can sometimes be developed very effectively in dedicated professional or technical universities. Funding criteria need to avoid any biasing of post-secondary programme choices.

Issues and challenges: Barriers to provision

Professional education and training is found in diverse institutional settings

The autonomy and distinct missions of post-secondary institutions, and sometimes dedicated funding streams, all influence programme development. Professional programmes have diverse institutional settings, including:

- Training institutions dedicated to short-cycle programmes – such as professional academies in Denmark, much of the college system in Canada and the United States, and professional colleges in Switzerland.
- Institutions that offer both upper secondary and post-secondary programmes – for example further education colleges in the United Kingdom, post-high schools in Romania and similar institutions in Spain.
- Specialised university-like institutions offering professional and technical bachelors qualifications – for example *Hogescholen* in the Netherlands, *Fachhochschulen* (universities of applied science) in Austria and Germany, university colleges in Denmark and Sweden, and universities of technology (former *Technikons*) in South Africa.
- Universities, for example in the United Kingdom, offering some bachelor degrees that are more (or less) vocational, as well as some short-cycle provision (such as foundation degrees).
- The workplace – for example post-secondary apprenticeships in France.
- Non-specific locations, in the context of professional examinations with no mandatory prior learning requirements – for example in the United States, Israel and Austria.

Short-cycle professional education and training rarely flourishes in universities or similar institutions

In the United Kingdom, the former polytechnics used to provide an extensive range of one and two-year HNC and HND vocational qualifications, but since their transformation into universities in 1992 provision of these programmes has dropped substantially, and the foundation degree programme that was intended to replace them remains limited in scale (Parry et al., 2012; UKCES, 2013). In the Netherlands, in the *Hogescholen* (institutions where the main activity is the provision of professional bachelor degrees) a pilot programme has sought to develop two-year foundation degrees. Although this has been a pilot, and there has been some recent growth in numbers, after several years' enrolment in bachelor degrees remains around one hundred times larger than enrolment in foundation degrees (Fazekas and Litjens, 2014). In Denmark, the social partners saw a planned takeover of professional academies by university colleges as threatening to short-cycle professional training (Field et. al., 2012). In South Africa, the transformation of the *Technikons* into universities of technology was associated with falling provision of one year higher certificates. The upshot,

visible in Figure 1.1, is that the scale of short-cycle professional training is smaller in countries like the United Kingdom and the Netherlands where it is dependent on universities or university-like institutions.

Why do university institutions fail to nurture short-cycle professional training? One reason is that it is not usually in the interests of institutions providing longer and more expensive programmes to promote shorter and less-expensive programmes that could undermine their primary market. Status effects are also important, with the missions of university institutions and incentives on their staff experiencing academic drift towards the provision of longer more academic programmes and research and away from shorter and more vocational programmes, and local partnership with industry (Neave, 1979; Kyvik 2007, 2004). This could be good for some academic and research outputs but bad for the quality of practical training.

Recommendation: A firmer institutional foundation

Professional education and training needs an institutional base that: a) offers short-cycle professional programmes in a tier of institutions separate from universities; b) makes use where relevant of the successful model of universities of applied science; c) consolidates training providers into institutions of adequate size; and d) provides a consistent framework of public funding for professional education and training, avoiding distortions and backed by quality assurance.

Explanation and country approaches: Measures to enhance the system

Short-cycle professional training requires non-university institutions

Given the barriers to short-cycle professional programmes in university institutions, a separate tier of institutions is normally required to develop provision effectively. Examples include vocational colleges in Austria, *Fachschulen* in Germany, professional colleges in Switzerland and community colleges in the United States. Two distinctive features of all these institutions are: first, that their missions are clearly distinct from universities; and second, that short-cycle professional training is the highest status qualification they provide. These two characteristics minimise the risk of drift towards a more academic mission which could marginalise professional programmes.

In the light of this finding, alongside other considerations, the OECD review of Denmark recommended that the planned merger of the professional academies (which provide most of the short-cycle professional programmes) into the university colleges, should not go ahead (Field et. al., 2012). It argued that such a merger would threaten the health of an important sector of provision by submerging it into a set of university institutions. This recommendation was accepted by the Danish government.

Many countries have successfully established technical and professional university institutions

Recent decades have witnessed the establishment of new types of higher education institutions with the mission of providing vocational bachelor degrees in technical and professional fields. Sometimes called universities of applied science, they include the *Fachhochschulen* in Austria and Germany, university colleges in Denmark and Sweden, polytechnics in Finland, and *Hogescholen* in the Netherlands. Such institutions have often been extremely successful and have grown rapidly, frequently concentrating their research efforts on applied topics, and with a different teaching style from universities (see Box 2.1).

Box 2.1. ***Fachhochschulen* (universities of applied science) in Austria**

Since 1994/1995 graduation rates in tertiary-type A programmes (a measure of the proportion of a population cohort gaining tertiary qualifications) have nearly trebled, rising from 10% to 29% between 1995 to 2009, still well below the OECD average of 38%. A lot of this growth is attributable to the rapid development of *Fachhochschulen* where in 2010/11 37 030 students were enrolled.

The 21 *Fachhochschulen* provide bachelors and masters-level qualifications. Just over 40% of the 350 programmes were in technology and engineering in 2010/11; one-third in economic sciences; 14% in health sciences. Programmes follow a more "school-like" structure than universities with limited alternatives for optional subjects and stricter timetables. Programmes are modularised. More than half (56%) of the graduates from bachelor programmes continue at master level. There were three applicants on average for each study place in 2010/11 (eight applicants per place in health sciences).

Source: Musset P., et al. (2013), *A Skills beyond School Review of Austria*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, doi: *http://dx.doi.org/10.1787/9789264200418-en*

In many countries, mergers have encouraged institutions of efficient size

In pursuit of both higher quality and greater efficiency, a number of countries have pursued institutional mergers. While there is sometimes resistance from local communities or individual professions to the loss of "their" training institutions, experience has shown that mergers can be managed successfully, particularly when it does not involve closure of campuses. Sometimes these have involved the merger of training institutions with specialised functions focused on particular professions. Sometimes these mergers have been driven by or accompanied by, raised or standardised expectations regarding the level of qualifications expected in professions, for example in the training of nurses or teachers. Often countries report benefits from these consolidations in terms of synergies and economies of scale.

Examples include:

- In **Northern Ireland**, 16 colleges were merged to establish six further education colleges each serving a regional community. The colleges employ their own staff and have the right to charge fees where necessary (Álvarez-Galván, 2014).
- In **Egypt**, the Ministry of Higher Education, with support from the World Bank, re-grouped their 45 middle technical institutes into eight technical colleges that, together, provide most professional training in Egypt (Álvarez-Galván, forthcoming).
- In **South Africa**, 152 colleges, many of them dating from the apartheid era, have been merged into 50 larger technical and vocational education and training (TVET) colleges, with over 260 campuses (Department of Higher Education and Training-Republic of South Africa, 2013).
- In **Denmark** mergers of smaller institutions yielded seven university colleges primarily serving public sector professions, such as nursing and teaching, through professional bachelor qualifications, and nine academies of professional higher education offering short-cycle programmes in technical and mercantile fields (Field et al., 2012).

Funding needs to be even-handed between professional programmes and other options

Funding for professional education and training is often a complex mix, and includes support both for students and for institutions (for example, student grants and direct funding for colleges in South Africa), or a mix of central government and regional support (for example, both federal and cantonal support in Switzerland). Such arrangements should sit consistently alongside other flows of public support for post-secondary education – particularly tertiary education; but this is not always the case, often because funding arrangements have developed separately. For example, in Israel, the level of state funding per student is lower in practical engineering programmes than in comparable engineering programmes in universities: in colleges under the Ministry of Economy, the average annual governmental spending per student is NIS 8 500 (EUR 1 780) and NIS 6 370 (EUR 1 330) for programmes under the Ministry of Education, compared with NIS 27 500 (EUR 5 750) for academic engineering programmes in universities (Musset, Kuczera and Field, 2014).

As general principles, funding needs to:

- Be consistent to avoid distorted incentives (where students choose programmes or modes of study on grounds of the level of funding support available rather than intrinsic suitability).
- Support part-time as well as full-time provision (an issue further addressed in Chapter 3).
- Provide consistent levels of support between short-cycle professional programmes and bachelor degrees.

- As a principle of accountability, quality assurance of institutions and programmes should be tied to funding (for the example of the United States, see Kuczera and Field, 2013).

Private providers, balanced by effective quality assurance, can play a useful role

Very often, private providers (both for and not-for-profit) occupy a particular niche in provision, particularly where no public funds flow to these private providers. Sometimes they fill a gap in public provision – for example, in the Netherlands, the public sector faces barriers in delivering part-time programmes to adults, and as a result these are mostly offered through private providers (Fazekas and Litjens, 2014). In Austria, Germany and Switzerland, private providers offer many of the preparatory courses leading to professional examinations. In Canada and the United States there is an extensive private, for-profit, career college sector. Where private providers are eligible for public support, as in Israel or Sweden, their role is more mainstreamed. While private providers very often play a useful role, issues of quality assurance arise. Of course quality assurance is important for the public sector too, but while in the public-sector the risk is uninspiring programmes run in the interest of the institutions and the teaching profession, the risk in the private sector is of training providers devoting their energies and their innovative capacity to profit-seeking – so a different type of quality assurance is necessary.

Clearly, quality assurance needs to be linked to the level of public funding. Where government money flows to private providers, there are, or should be, accountability arrangements to ensure that government money is supporting good quality provision. In England, the government inspection body, Ofsted, inspects provision funded by government regardless of whether it is delivered by a private or a public training provider or indeed an employer (Musset and Field, 2013). Where no government money is involved, the quality assurance issues are different, but they remain relevant, given that quality in education and training is so often invisible. In the reviews of Switzerland and Germany, enhanced quality assurance was recommended for preparatory courses for professional examinations, even though the level of government support for such courses is quite limited (Fazekas and Field, 2013a, 2013b).

Funding may be channelled to providers in partnership with employers

While the conventional approach is to define a set of institutions to deliver professional training, a radical alternative is pursued in the Swedish system of higher vocational education (HVE) (see Box 2.1). A national agency offers funding to partnerships of training providers and employers, throughout the country. Many countries attribute their difficulties in engaging employers to the lack of any historical tradition of such engagement. Swedish HVE may therefore be a model applicable in these contexts, and possibly more exportable than other

models whose success in national contexts depends heavily on well-established expectations regarding the role of employers (see Box 2.2).

Box 2.2. **The Swedish system of higher vocational education (HVE)**

Higher vocational education (previously called advanced vocational education and training) was established in 2001 with enrolment increasing rapidly to reach 31 000 (compared with 140 000 enrolments in professional bachelors and masters programmes). Most programmes require between six months and two years of full-time study with 70% of programmes lasting two years. There appears to be demand from students, support by employers, and interest among bodies wishing to run courses. Eighty-ninety per cent of graduates report being in work one year after graduation. Many different bodies can provide HVE if they comply with the established requirements. In 2011, out of 242 institutions providing HVE, roughly half were private while the rest belonged to local and regional authorities. All HVE programmes are publicly funded, with no tuition fees.

The model fosters a bottom-up and entrepreneurial approach within a publicly funded framework. Workplace training is obligatory in two-year HVE programmes and represents one-quarter of the programme duration. This structure builds partnership with employers into the design of the system, since it is only possible to seek funding for an HVE programme when a partnership with employers willing to offer the workplace training is already in place. Each HVE programme in every institution has a steering group including employers; employers provide training to students and also advise on provision and programme content. To launch a programme an education provider has to show that there is labour market demand for the skills provided by the programme, and that it has a framework to engage employers. The National Agency for Higher VET is responsible for the sector, and the social partners are part of a council that advises the Agency on the future demand for skills and on how this might be met.

Source: Kuczera, M (2013), *A Skills beyond School Commentary on Sweden*, OECD Reviews of Vocational Education and Training, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnSweden.pdf*; Ministry of Education and Research Sweden (2013), *Skills beyond School. OECD Review of Vocational Education and Training. Background Report from Sweden*, *www.oecd.org/edu/skills-beyond-school/SkillsBeyondSchoolSwedishBackgroundReport.pdf*.

Sustaining coherence in a diverse system

Often, the governance of post-secondary professional training involves a complex network of agencies, and the ensuing proliferation of programmes and qualifications can sometimes cause confusion for both students and employers. This section argues that co-ordination mechanisms are needed to engage key stakeholders, including employers and organised labour, and ensure coherence in the system.

Issues and challenges: Balancing coherence and diversity

Country systems need both coherence and diversity

Fragmentation of professional education and training into different subsectors often reflects the division of responsibilities between different ministries and agencies, the relative autonomy of post-secondary institutions, and the roles played by private-sector providers, employers and trade union organisations in delivering training provision (see for example Musset at al., 2013 for Austria; Kis and Park, 2012 for Korea; Musset, Kuczera and Field, 2014 for Israel). Decentralised governance may support diversity, innovation and competition, but the downside is that it can also create confusion for students in the face of multiple pathways and awkward transitions, while employers find engagement in multiple contexts too burdensome; there may also be duplication of tasks, such as curriculum design and quality assurance.

Recommendation: Stronger frameworks for co-ordination

Ensure that there is an institutional framework to co-ordinate professional education and training, engaging employers and organised labour, so that programmes and qualifications are comprehensible and accessible to key stakeholders.

Explanation and country approaches: Different ways of consolidating the system

Some countries have strong co-ordination mechanisms

A body with responsibility for co-ordination can link the different sectors of the system, and engage the social partners, without damaging local innovation. The frameworks in Denmark and Switzerland build on strong industrial bodies (employer organisations and trade unions) and a long tradition of engagement in VET. Conversely the employer-led UK Commission for Employment and Skills is a recent creation, but involves high-level representatives of large companies and smaller employers, as well as trade unions and other stakeholders (see Box 2.3).

Policy development depends on policy co-ordination

Many of the recommendations in this review, set out in the different chapters, (on a simple qualification system, on co-ordination to manage articulations and transitions, on the implementation of work-based learning, and on the preparation of vocational teachers), would need to be discussed, developed and implemented at the national level, in consultation with the social partners and other stakeholders. This requires the existence of appropriate steering arrangements.

Box 2.3. **Bodies for co-ordination: National approaches**

In **Switzerland**, the involvement of professional organisations (trade and employer organisations and trade unions) in VET policy making is required by law. Professional organisations have the leading role in the content and examination process of both secondary and post-secondary programmes; they also draft core curricula for professional college programmes, which are then approved by the Swiss federal authorities. National examinations leading to a federal diploma are also led by professional organisations who ensure that diplomas are relevant to the needs of the profession and the labour market. Professional organisations draft examination rules, which cover admission requirements, occupational profiles, the knowledge and skills to be acquired, qualification procedures and the legally protected title. They also conduct examinations. The role of Swiss authorities (at Confederation level) includes approving examination rules, supervising examinations and issuing federal diplomas.

In **the United Kingdom**, the UK Commission for Employment and Skills (UKCES), launched in April 2008, aims to increase the employer voice in the United Kingdom's VET system and promote investment in skills to drive growth. It is led by commissioners from large and small employers, trade unions and the voluntary sector. It also includes representatives of further and higher education institutions and from Northern Ireland, Scotland and Wales. Its strategic objectives are: to provide world-class labour market intelligence which helps businesses and people make the best choices; to work with sectors and business leaders to develop and deliver the best solutions to generate greater employer investment in skills; and to maximise the impact of changed employment and skills policies and employer behaviour to help drive jobs, growth and an internationally competitive skills base.

See also Box 4.2, for a description of the role of the Council for Academy Profession Programmes and Professional Bachelor Programmes in **Denmark**.

Source: Staatssekretariat für Bildung, Forschung und Innovation (SBFI) (2013), SBFI website, *www.bbt.admin.ch*, accessed January 2013; UK Commission for Employment and Skills (UKCES) (2013), UKCES website, *www.ukces.org.uk*, accessed January 2013; OPET (Federal Office for Professional Education and Technology), (2011), *Facts and Figures. Vocational and Professional Education and Training in Switzerland.*

Vocational education and training needs to be linked to other strands of skills policy

Co-ordination of the vocational education and training system also involves linking it to wider policies bearing on skills and the broader context of economic development. The OECD's *Skills Strategy* (OECD, 2012) looks at the inter-relationship of different policies that bear on skills in education and training systems, and their maintenance and development in the labour market. While

very often these policies are linked to different government departments, with different objectives and agendas, countries can benefit by co-ordinating the work of these different entities (see Box 2.4).

Box 2.4. **Co-ordination with wider elements of skills policy: The Northern Ireland Skills Strategy**

The Northern Ireland Skills Strategy sets out a vision for skills development in the province, focusing on those entering the labour force for the first time; upskilling the existing workforce; and ensuring that those currently excluded from the labour force are provided with the skills to gain and keep jobs. Its aim is to enable people to access and progress up the skills ladder, in order to: raise the skills level of the whole workforce; raise productivity; increase levels of social inclusion by enhancing the employability of those currently excluded from the labour market; and secure Northern Ireland's future in a global marketplace. By 2020, it aims to:

- Increase the proportion of employed persons with Level 2 skills and above to 84-90%; with Level 3 skills and above to 68-76%; with Level 4-8 skills and above to 44-52% (levels defined by reference to the UK qualifications framework).
- Increase the proportion of those qualifying from Northern Ireland higher education institutions with graduate and postgraduate level courses in science, technology, engineering and mathematics (STEM) subjects by 25-30%.

Source: Álvarez-Galván, J.-L. (2014), *A Skills beyond School Commentary on Northern Ireland*, OECD Reviews of Vocational Education and Training, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnNorthernIreland.pdf*

Better data

At present, it is difficult to identify post-secondary vocational programmes in international data. This section argues that this problem should, in principle, be alleviated with the introduction of ISCED 2011 – provided that it is consistently implemented by countries. Better national data collection on professional examinations will also be important.

Issues and challenges: Weaknesses in the current ISCED framework

ISCED does not yet adequately distinguish post-secondary vocational programmes

The International Standard Classification of Education (ISCED) identifies a sequence of levels of education, supporting comparison across countries – for example a comparison of upper secondary completion rates according to common definitions. But current (ISCED 1997) categories do not adequately separate vocational programmes at the post-secondary level. Shorter vocational

programmes are sometimes treated as ISCED 4 (for example, US certificates and Austrian vocational college programmes) and sometimes as ISCED 5B (for example, professional college programmes in Switzerland). Vocational bachelor degrees (such as the HBOs in the Netherlands or the university college degrees in Denmark) are typically classified as ISCED 5A, and are therefore assimilated to academic bachelor's degrees. This means that the rapid growth of vocational bachelor qualifications cannot be adequately measured in an international context.

In addition, ISCED 4 and ISCED 5B do not adequately distinguish between academic and vocational programmes. For example, in Germany and Flanders (Belgium), some upper secondary vocational graduates pursue a wholly academic preparatory programme to enter higher education, and this is classified as ISCED 4 alongside fully vocational programmes, such as certificates in the United States or training for nurses in Austria. Similarly, in the United States, more than one-third of the associate degrees awarded are academic, but they are classified as ISCED 5B, alongside many vocational qualifications in the United States and elsewhere.

Recommendation: Strengthen international and national data

Ensure that implementation of ISCED 2011 delivers a consistent and accurate classification of vocational programmes. Develop new indicators to evaluate the effectiveness of professional education and training. Improve the collection of data on industry-led professional examinations.

Explanation and country approaches: Reform of ISCED and national data initiatives

ISCED 2011 should offer better data on professional education and training

The new ISCED 2011 classification, to be introduced from 2014 (see Box 2.5) should, in principle, improve the identification of professional training. But this depends on whether countries use consistent means to classify their national programmes, recognising that for some post-secondary programmes, the distinction between vocational and general programmes can be difficult to make.

ISCED 2011 also presents other advantages. Recognition that all tertiary education up to a master's degree can be professionally oriented may help to improve the status of professional education. Better definitions offer an opportunity to improve the evaluation of vocational/professional programmes and qualifications in the future, e.g. by collecting data on the extent to which programmes include work-based learning.

Box 2.5. **ISCED 2011 and how it will classify professional education and training**

The new ISCED 2011 classification (UNESCO, Institute for Statistics, 2012) should in principle improve the comparability of professional training. In particular, it offers a framework in which programmes at Levels 4, 5, 6, and 7 can be divided between vocational/professional and general/academic. Levels 5, 6 and 7 in ISCED 2011 together correspond to Level 5A and 5B in ISCED 1997, and Level 8 in the new classification to Level 6 in ISCED 1997. Post-secondary non-tertiary education remains at Level 4. In the new classification professional education and training would include vocational programmes at the following levels:

- *ISCED 4* post-secondary non-tertiary education prepares graduates for the labour market as well as for entry to tertiary education. The content is not sufficiently complex to be regarded as tertiary education, although it is clearly post-secondary, and includes programmes such as certificates in the United States and short courses in Higher Vocational Education in Sweden.
- *ISCED 5* typically prepares graduates for the labour market and some other tertiary education programmes. It has a minimum duration of two years and is typically shorter than three years full-time. It may cover technician training, advanced higher vocational training or associate degrees.
- *ISCED 6* provides participants with intermediate academic and/or professional knowledge, skills and competencies, and is normally offered by universities and other tertiary institutions.
- New ISCED 7 will correspond to Masters degrees, and ISCED 8 to PhD's.

Better data on professional examinations are sometimes needed

Professional examinations can play a major role in country skills systems, but because they are usually industry-led, and sometimes unregulated by government, they can be invisible to the "official" skills system. Chapter 4 addresses the policy issues that arise. In some countries, professional qualifications awarded by industry associations based on an exam are not included in national educational statistics and thus in international counts. In Austria, Germany, Israel and Switzerland these professional examinations are regulated and recognised by educational authorities within the national qualification system. Conversely, in the United States they form a system apart that has not been included in national statistics (see Box 2.6). These different approaches to industry qualifications can bias comparative international measures of the skills of the adult labour force.

Box 2.6. **Better data on professional examinations (industry certifications) in the United States**

Despite the growing importance of industry qualifications in the US skills system, reliable data are limited. Nationally, no data have been available on the number of individuals with industry certifications, and state and local government issued licences and those who have received non-credit instruction.

The federal Interagency Working Group on Certificates and Certifications was mandated to address these gaps in the data, and develop measures of the prevalence of certifications, licenses, and educational certificates. This led to the Adult Training and Education Survey (ATES) Pilot Study, a national household survey of non-institutionalised adults aged 18 and over. This study suggested that around 30% of the US workforce (65 million people) have either a licence or an industry qualification (certification). Kleiner (2006) estimates that approximately 20% of the US workforce is in licensed occupations implying that between 10% and 30% of adults in the United States hold an industry certification.

Source: Kleiner, M. (2006), *Licensing Occupations. Ensuring Quality or Restricting Competition?*, W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan; National Center for Education Statistics NCES (2012), *The Adult Training and Education Survey (ATES) Pilot Study. Technical Report*, NCES, *http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2013190*

Note

1. *Formation professionnelle supérieure; Höhere Berufsbildung; formazione professionale superiore.*

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Chapter 3

Three key elements of high-quality post-secondary programmes

An effective professional training sector needs to offer high-quality programmes that produce highly-skilled workers. This chapter looks at three key features of high-quality programmes: first, systematic work-based learning integrated into programmes; second, effective teacher professional development that balances the need for teaching skills with up-to-date practical experience in industry; and third, attention to numeracy and literacy skills.

Making work-based learning systematic

It is necessary, but surprisingly difficult, to make professional education and training fit the needs of the workplace. One of the best ways of doing so is to bring learning into the workplace. Unfortunately, this does not happen as much, or as effectively, as would be desirable, and work-based learning is sometimes only weakly attached to professional programmes. Building on the successful approaches of many countries, this section argues that work-based learning should be fully integrated into programmes as a credit-bearing and quality assured element. Such an approach would powerfully promote partnership between employers and training providers.

Issues and challenges: Unrealised potential

There are many direct benefits of work-based learning

Work-based learning encompasses a diversity of arrangements including apprenticeships, informal learning on the job, work placements that form part of formal vocational qualifications, and internships of various types. Managed effectively, it delivers benefits for all participants and contributes to better labour market and economic outcomes. Described in *Learning for Jobs* (OECD, 2010) these include:

- *For students, a strong learning environment.* Work-based learning offers realistic experience and makes it easier to acquire practical skills on up-to-date equipment and through colleagues and supervisors familiar with the most recent technologies and working methods. Soft skills such as dealing with customers are also more effectively learnt in workplaces than in classrooms and simulated work environments.
- *For both students and employers, assured linkage with labour market demand.* The employer offer of work placements signals that a connected vocational programme is of labour market value. In systems where the offer of places in vocational programmes is tied to the availability of work placements, employers can influence the mix of training provision through their willingness to offer placements.
- *For both students and employers, an effective recruitment tool.* In the workplace, employers get to know and assess trainees, who in turn get to know the workplace and the employer, providing both parties with valuable information that may lead to recruitment, or alternatively may lead them to look elsewhere.

- *For employers, a productive benefit* through the work done by trainees. This is not only important for apprenticeships but also in more substantial work placements where trainees have the time to master productive skills.
- *For public authorities, value for money.* Delivering high-quality vocational programmes outside the workplace can be very expensive, particularly in fields where modern equipment is expensive and requires continuous updating, and where expert practitioners command substantial salaries.

Work-based learning is lifelong learning

At post-secondary level the issues are slightly different, but not fundamentally so. When students are older and have some work experience, there is a lesser role for work-based learning as a means of introducing people to the world of work and transitioning them into jobs. But work-based learning is, or should be, part of lifelong learning, with a vital role to play not only in the initial learning of occupational skills, but also in continuous professional development, deepening and broadening knowledge and skills, as well as allowing for sideways career moves.

There are barriers on both the education and the labour market side

Despite its compelling advantages, work-based learning is too often neglected. One reason may be that it conflicts with a common (but flawed) assumption of the education industry – that learning should be fostered by an academically trained teacher in an academic institution and subject to an academic assessment. Instead, work-based learning is usually pursued under the guidance of a supervisor rather than a teacher, in a workplace rather than a classroom, and often subject to a practical assessment of competence rather than an academic test.

For employers there are other obstacles: work-based learning requires work tasks to be organised so as to meet both production and learning goals – natural in a "learning" organisation with a focus on staff development, but challenging in others. Such a capacity to manage partially skilled workers in ways that will meet both goals is demanding, but it is also very much part of broader management capacity – given that very often employees, particularly in the context of change and innovation, will have limited experience and skills in relation to a changing set of work tasks. The implication is that while increased management capacity may be necessary to make effective use of trainees in the workplace, that capacity will have many wider benefits – particularly in terms of the ability of companies to make the most effective use of their employees, and to innovate. So the transition to a learning organisation may be difficult initially but ultimately rewarding.

A lukewarm approach to work placements achieves little

These barriers on both sides sometimes result in what might be called a "lukewarm" approach to work-based learning, in which work placements are optional additions to programmes, unconnected with learning objectives, are not

assessed, earn no credit, and lack quality assurance. Multiple problems emerge: students have to rely on their social networks to obtain placements, disadvantaging those with less favoured social backgrounds and connections; some students end up in inappropriate or unskilled placements; and expectations on and support for employers providing placements are weak or unclear. In the face of such limitations it would be easy – too easy – to conclude that the placements are of limited value, particularly when compared with the systematic teaching of the classroom and workshop components of a vocational programme. A more robust approach to the use of work-based learning is therefore imperative.

Recommendation: Systematic, mandatory, credit-bearing and quality assured work-based learning

All professional education and training programmes should include some work-based learning as a condition of receiving government funding. The work-based learning should be systematic, quality-assured and credit-bearing.

Explanation and country approaches: Positive experience with a systematic approach

A systematic approach yields many benefits including the promotion of partnerships with employers

Realising the full benefits of work-based learning requires a number of steps. First it needs to be made an essential and integrated element of the vocational programme, rather than an optional add-on. The learning outcomes expected from the work-based learning component need to be defined, so that what the student has learnt can be assessed, and linked to credit. This framework then provides the basis of quality assurance, since the training enterprise, in combination with the student, becomes responsible for delivery of the learning outcomes. In recognition of these obligations, the framework may also involve a contract between students and training enterprises.

Alongside the direct learning benefits, the integration of work-based learning changes the relationship between an off-site training provider and employers. It means that programmes will only be funded when training providers develop and maintain the active partnerships with employers that support work placements. These employer partnerships will then become central to the mission of training providers, while employers will see that, unless they are willing to offer work placements, the programme from which they draw their recruits may close or contract, and government funding shift to another sector or region. Many currently reluctant employers will choose to offer work placements under these conditions, assuming that they value the training programmes. Potentially it also means that some programmes which are of little interest to employers may need to consider reducing training places, or even close. This gives employers a desirable influence over the mix of training provision, allied

with the principle that the greatest influence goes to those employers that are prepared to contribute most, by way of the offer of work placements.

Such partnerships between training providers and employers have profound benefits. They encourage training provision which is sensitive to labour market needs, familiarise employers with vocational programmes and qualifications, and help teachers of vocational subjects to keep up-to-date.[1] It follows that when this type of systematic approach is first implemented in a country, it should help to build a new culture of partnership with employers in the delivery of vocational education and training, a culture which is found in the world's strongest skills systems. It is also a critical support to other recommendations in this review, including those encouraging vocational teachers to work more closely with employers (see the next section in this chapter) and to negotiate some proportion of the curriculum locally (see Chapter 4).

Many countries have successfully implemented such an approach

The proposition of work-based learning as a mandatory element of programmes (or at least government-funded programmes) often meets resistance. It is commonly argued that employers will not offer the placements and that it is only possible where it is already part of the working culture. But the international evidence overwhelmingly supports its feasibility. In Sweden, workplace training is obligatory in two-year professional programmes and represents one-quarter of the programme duration (Kuczera, 2013). In Denmark, workplace training is a minimum of three months in two-year professional programmes (professional academy) and a minimum of six months in three-year professional bachelor programmes and it can take place at one or several companies (Field et al., 2012). In Belgium (Flanders) vocational programmes targeting the unemployed include obligatory work-based learning in a company that is alternated with periods in learning centres (OECD, 2010; Flemish Department of Education and Training, 2013). In Romania, all post-high school programmes include mandatory work placements (Musset, 2014). In Spain, all post-secondary (as well as upper secondary) VET programmes include a compulsory 10-20 week module of workplace training. During the work placement students receive guidance and support from a teacher at the VET institution they attend and from the person who supervises their work at the company. Homs (2007) argues that when this requirement was introduced in Spain, it ended the isolation of vocational institutions, improved school-company relationships, helped vocational teachers to be in contact with companies and facilitated school to work transition (Spanish Ministry of Education and Science, 2007; Spanish Ministry of Education, Culture and Sport, 2011).

Clearly implementation of this approach requires sensitivity to the challenges faced both by training providers and employers. While a formal commitment to work-based learning as a condition of funding sets the incentives for both training providers and employers, this top-down incentive-setting would need to be buttressed by arrangements at local level to help training providers

work in partnership with employers, and help employers to both see and realise the benefits to them of offering work placements. Such arrangements would not only encourage an adequate number of work placements, but also help to ensure their quality. This support may also foster the capacity of enterprise staff to supervise trainees and develop their skills.

Quality assurance and a legal framework are necessary supports

Quality standards for work-based learning help to avoid the allocation of students to unskilled tasks and ensure they acquire useful occupational skills. Such standards may cover the content and duration of training, the assessment of training outcomes and the competences of those who supervise trainees (see Box 3.1 for an example from Denmark). A clear legal framework can be an important support for work-based learning – the lack of insurance against industrial accidents sometimes inhibits companies from taking on trainees. Box 3.1 includes elements of the legal framework for workplace training in the Community of Madrid, Spain.

Strengthening the training workforce

Vocational teachers and lecturers have jobs that in many ways are more demanding than those of academic teachers. They not only need to have knowledge and experience of the diverse package of skills required in particular professions, they also need to know how to convey those skills to others. On top of this, they need to continuously update their knowledge in response to changes in technology and working practices. The issues are common to the upper secondary and post-secondary levels, and both the challenges and potential solutions are set out in *Learning for Jobs* (OECD, 2010). This section offers an update based on the *Skills beyond School* country reviews.

Issues and challenges: Gaps in the knowledge and skills of vocational teachers

Initial training of vocational teachers is not always adequate

Teacher training qualifications are sometimes very general, without any differentiation between the teaching of academic and vocational subjects. In England, for example, initial teacher training programmes have been described as too generic and theoretical, and insufficiently related to the professional and occupational expertise of college lecturers (Lingfield, 2012). In contrast to secondary school initial teacher training, where trainees are grouped by subject, programmes for teachers in (often vocational) further education cater for a huge diversity of trainees and subject and occupational areas. Programmes designed to teach how to go about conveying practical and vocational skills are rarely available. The scope for vocational teachers to update their skills by spending time in industry is also sometimes much too limited.

Box 3.1. **Quality assurance and legal frameworks for work-based learning**

In **Spain**, participation in work-based learning is mandatory for all upper secondary or post-secondary vocational students. Autonomous communities create their own **legal framework for implementation**. That of the Community of Madrid covers collaboration agreements signed by the company and the school's principal, setting out the participating students, the place of training, start and end dates, hours of work, and details of the training programme. Students are covered for workplace accidents under the regulations on insurance. The training plan specifies the set of training activities that the student will perform while in the company. The workplace training module is evaluated by the teacher who supervises the module on behalf of the school. The teacher has to visit the company at least every two weeks to interview the in-company supervisor of the student and observe the students.

In **Denmark**, all academy profession programmes include a minimum of three months of work-based learning, and six months in professional bachelors' programmes. Following their placement, students report back to their training provider and they are assessed to see if they have met their learning objectives. Supervisors need to have a solid knowledge of the theoretical content of the student's course and have sufficient time and resources to offer guidance. **Quality assurance** has three key features:

- Quality assurance is built into the work placement arrangements, and plays a decisive role in the accreditation of new programmes.
- Attention is given to making these placements as useful as possible for both vocational programmes and employers, and the analysis of those links forms part of the accreditation process.
- The work placements are closely linked to learning outcomes. Students apply concepts learnt in the study programme at the workplace, linking theory to practice.

Source: General Directorate for Secondary and Vocational Education, Community of Madrid, Spain (2009), *Instrucciones de la Dirección General de Educación Secundaria y Enseñanzas Profesionales, por las que se concertan, para los centros públicos, determinados aspectos relatives al modulo profesional de formación en centros de trabajo*, *www.madrid.org*, accessed December 2011; Field, S., et al. (2012), *A Skills* beyond *School* Review *of Denmark*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264173668-en*.

There are often barriers to the use of part-timers

In some countries over-rigid qualification requirements make it hard for people with valuable industry experience to contribute to vocational training. In the Netherlands, instructors from industry can only teach in the presence of a pedagogically qualified teacher (Fazekas and Litjens, 2014). In Germany, *Fachschulen* teachers have demanding qualification requirements which can be

barriers for part-timers from industry (Fazekas and Field, 2013). In England, the requirements for part-time teachers have been the same as for full-timers and this limits the scope for future recruitment in response to anticipated retirements: 20% of the further education workforce will reach the age of 65 by 2020 (Skills Commission, 2010).

Recommendation: Vocational teachers should balance teaching skills and industry experience

Ensure that the workforce in professional training institutions benefit from a strong blend of pedagogical skills, industry experience and academic knowledge. Adapt qualification requirements to that end.

Explanation and country approaches: Qualifications, local partnerships and leadership

Full- and part-time teaching by industry practitioners can be promoted

Part-time teaching staff that maintain their role in industry bring up-to-date practical experience into the teaching environment, benefitting not only students, but also fellow teachers (OECD, 2010). It is therefore important that highly skilled and experienced professionals are able to move into teaching, either full or part-time, without having to overcome too many regulatory obstacles. Allowing skilled workers to acquire their pedagogical competences in a flexible way (e.g. distance learning, recognition of prior learning) helps to encourage them to practice as vocational teachers/trainers. Typically part-time teachers require pedagogical training, but it is unrealistic and undesirable to impose the same demands on them as full-time teaching staff, given that they will often compensate by bringing up-to-date industry experience into their teaching and to share with their colleagues (Field et al., 2012). In England, a new programme has been launched to encourage industry experts to teach part-time in vocational programmes (see Box 3.2).

Local partnerships with employers help teachers keep up-to-date

The previous section in this Chapter argued for the systematic integration of work-based learning into programmes, involving efforts to improve linkages between training providers and employers. Chapter 4 of this report will recommend local flexibility in curricula to encourage partnerships between training institutions and employers. Both initiatives will naturally involve teachers in developing and updating their knowledge of modern industry. This provides a framework in which it would be much more feasible for vocational teachers to pursue work placements themselves as a way of updating their industry skills, perhaps as a routine or mandatory element of in-service training. Conversely, teachers who are more knowledgeable about modern industry will find it easier to respond to the needs of local employers and to negotiate work placements for their students.

Box 3.2. **"Teach Too": A programme in England to encourage industry experts to teach in vocational programmes**

Teach Too aims to encourage occupational experts from industry to spend some time teaching their occupational expertise to others and contribute to curriculum development, while continuing to work, so keeping off-the-job vocational education and training as up-to-date as possible. The programme implements a recommendation by the Commission on Adult Vocational Teaching and Learning on the need for "vocational teachers and trainers to combine their occupational and pedagogical expertise, [and] build strong partnerships with employers."

The programme will be developed by: learning from existing good practice and disseminating these lessons, funding a range of developmental activity to encourage innovation; challenging employers; and training providers to propose solutions that work for their learners and businesses. Drawing on this knowledge and activity the intention is to develop a national Teach Too framework which all stakeholders will be keen to embrace.

Source: The Education and Training Foundation (2014), Teach Too, *http://et-foundation.co.uk/teach-too.html*.

Strong leadership can get the best out of a teaching team

Thoughtful leadership is required in vocational institutions in order to make the most effective use of a team of teachers with a mix of skills that balance pedagogical understanding, academic knowledge and industry experience. While it may be too much to expect the perfect mix of skills in any individual teacher, effective leadership and teamwork can ensure that a strong blend of knowledge and experience is constructively shared and deployed within institutions.

Ensuring adequate basic skills

Basic skills of numeracy and literacy are not only a key part of the skillset required in any job, they are also tools for further learning, supporting the acquisition of the further skills and qualifications that are increasingly sought by students and needed by employers. The (too common) assumption that the development of basic skills can safely be left to initial schooling is implausible, given results from the Survey of Adult Skills (PIAAC) showing that some adults with higher (academic and vocational) qualifications also have weak basic skills. This section argues that professional programmes need to support the development of these skills, and that basic skills may be effectively taught in conjunction with practical skills.

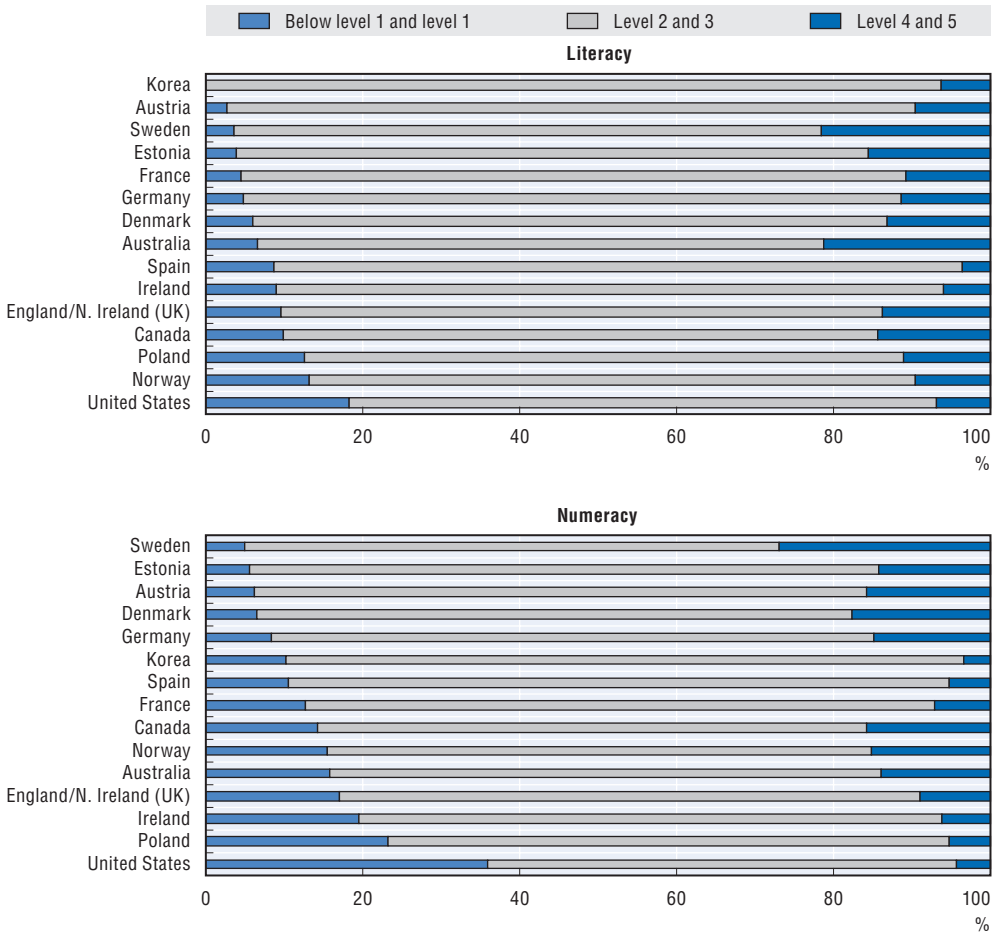
Issues and challenges: Weaknesses in basic skills

Some post-secondary students and graduates have weak basic skills

Looking at the data in Figure 3.1, the most pressing concern is the proportion of students in professional programmes with very weak basic skills, particularly in respect of numeracy. This may inhibit completion, and, for those who graduate, hold back career development and further learning. In many countries more than one in ten students in short-cycle professional programmes perform

Figure 3.1. **Literacy and numeracy skills among current students in short-cycle professional[1] programmes**

16-65 year-olds



1. For a definition and explanation see Box 1.4.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098535

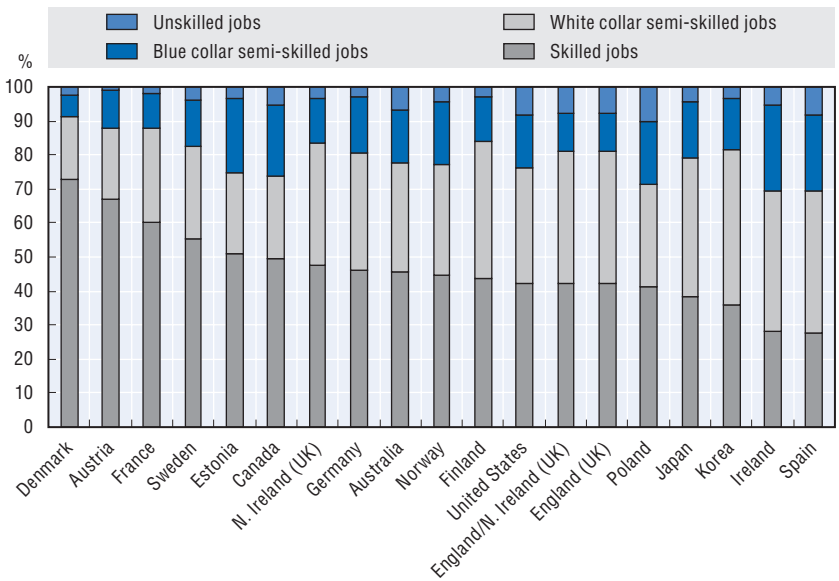
at the lowest levels 1 and below in numeracy. It is not surprising that students in engineering, manufacturing and construction tend to do better in numeracy, but it is striking that weak numeracy is a particular challenge in some of the English-speaking countries. This could reflect a number of factors, including the way in which students are selected into these programmes, as much as any deficiencies in the programmes themselves.

Graduates of professional programmes are usually in jobs needing strong basic skills

Although, as indicated above, students of short-cycle professional training face some challenges in respect of basic skills, graduates of these programmes typically enter jobs involving higher level technical and professional skills such as medical lab technicians, legal secretaries, computer support technicians, nurses, medical radiographers, occupations classified in ISCO coding as technicians and associate professionals.[2] But this is variable. In England, Korea, Spain and the United States, 40% or less of professional programme graduates are in skilled jobs, compared to more than 60% in Austria and Denmark (see Figure 3.2). Any underlying weakness in basic skills may therefore contribute to dropout from programmes, reduce the capacity to enter more highly skilled jobs, and undermine the potential for further training and career development.

Figure 3.2. **The jobs performed by graduates of short-cycle professional[1] programmes**

16-45 year-olds



1. For a definition and explanation see Box 1.4.
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098554

Unsurprisingly, individuals working as professionals and technicians (higher-skilled jobs) are more likely to be confronted with complex job tasks. In all countries there are relatively more graduates from professional programmes facing complex problem solving at work than upper secondary graduates, but fewer than those with a tertiary qualification (see Figure 3.3).

Recommendation: Sustain basic skills and integrate them with vocational teaching

Professional education and training programmes should ensure adequate literacy and numeracy skills among their students alongside occupation-specific competencies. This means assessing basic skills at the outset of programmes, addressing weaknesses, and integrating basic skills development into professional programmes.

Explanation and country approaches: Building basic skills into professional training

Basic skills should be built into professional education and training

Given the importance of basic skills, they need to receive attention within professional programmes. This may mean administering a test of numeracy and literacy on entry to post-secondary programmes to determine student needs, offering targeted help for those with the weakest basic skills. Requirements vary – programmes designed to upskill established professionals will be differently placed from those designed for adults re-entering the labour market. Strong literacy and numeracy will be particularly important for vocational graduates who wish to pursue further academic qualifications; in this case strong basic skills should help to underpin transition to, and articulation with, academic education.

In countries where professional programmes are relatively open to students, regardless of prior qualifications, extensive efforts are sometimes devoted to the basic skills of those entering the post-secondary system. Box 3.3 details some experience in the United States.

Integrating basic and vocational skills has many advantages

Often, when students have not pursued academic styles of classroom learning for some years, or where they have a negative past experience of such learning, there is a real difficulty in pursuing traditional mathematics or literacy classes. One promising approach is to integrate basic skills with vocational training, so that literacy and maths skills are acquired in meaningful practical contexts. While research evidence (e.g. Jenkins, Zeidenberg and Kienzl, 2009; Kamil, 2003; NCTE, 2006) shows that integrating academic and vocational content can be effective, implementing such an approach is demanding. It requires careful planning, adequate resources and preparation. A study of maths and vocational training (Stone et al., 2006) identified factors that teachers considered

Figure 3.3. **Short-cycle professional programme[1] graduates and problem solving on the job**

Percentage difference in the share of employees aged 16-45 spending 30 minutes or more at least once a week on finding solutions to complex problems. Comparison of upper secondary and tertiary graduates with graduates of short-cycle professional programmes

1. For a definition and explanation see Box 1.4.
ns – not significant.
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098573

Box 3.3. **Tackling basic skills weaknesses in community colleges in the United States**

Bailey (2009) estimates that for at least two-thirds of community college entrants weak academic skills threaten course completion. In 2007-08, 45% of first and second year community college students reported having to take remedial courses (US Department of Education, 2013). While extensive resources are devoted to remediation of basic skills, its effectiveness is limited. Colleges allocate scarce resources to remediation activities, while students commonly use federal grants and subsidised loans to cover the cost of remedial education. This leaves them fewer resources for their post-secondary studies and increases the chance of dropout, and financial distress. Some examples of initiatives designed to help those who encounter difficulties once they start college are given below.

The **Accelerated Learning Project (ALP)** pioneered by the Community College of Baltimore County, Maryland, tackles low performance in college by providing students in remediation with relevant college credit courses in parallel (rather than in advance) of their studies so as to speed up their progress. The strategy is based on the principle that skills taught in one course and reinforced in another are more likely to be mastered. ALP participants concurrently enrol in a credit-bearing English course and a developmental writing course taught by the same instructor. The initiative has proved successful in terms of students completing the relevant credit courses. These positive outcomes have led the ALP to be adopted by different colleges throughout the United States.

In Washington State the **Student Achievement Initiative (SAI)** is a new performance funding system for all community and technical colleges. Institutions are rewarded with additional funds if they record a significant improvement in the number of students moving from remedial to credit courses, completing credits, and successfully completing a degree. Colleges are evaluated relative to prior performance and institutions are encouraged to measure the impact of their efforts and adjust practices in response. Evaluation of the SAI shows that since its introduction, students have acquired stronger basic skills.

Source: Bailey, T. (2009), "Rethinking developmental education in community college", *CCRC Brief*, No. 40, February 2009, CCRC; US Department of Education (2013), *Institute of Education Sciences, National Center for Education Statistics, Career/Technical Education Statistics, 2013*; Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202153-en*.

key to success, such as allowing sufficient time away from teachers' regular tasks, and effective partnerships between maths and vocational teachers. An example is given in Box 3.4.

Box 3.4. **I-BEST: Integrated instruction in the United States**

The Integrated Basic Education and Skills Training (I-BEST) provides a strong example of a programme designed to improve labour market outcomes and entry rates to professional training among adults with low basic skills. Developed in Washington State, it has proved successful and is now being introduced in other parts of the United States.

The programme combines basic skills teaching with professional training that yields college credits and contributes to a credential. Courses are provided in occupations in high demand. In Washington State combining basic skills with vocational content is facilitated by the availability of both types of programme at community and technical colleges, and I-BEST programmes are available in every college in the state. Individuals must score below a certain threshold on an adult skill test and qualify for adult basic education to participate. In practice, this translates to around 2% of basic skills students.

I-BEST students earn more credits and were more likely to complete a programme than a comparable group of students not participating in the programme. Evidence on the link between participation in I-BEST and earnings is less conclusive.

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202153-en*.

Notes

1. For example in Denmark mandatory work placements are seen by many VET teachers as an important means of ensuring that they are aware of modern workplace requirements (Field, et al., 2012).
2. See ILO, 2012, International Standard Classification of Occupations. Structure Group definitions and correspondence tables, ISCO-08, ILO, Geneva). In the Survey of Adult Skills occupations were grouped in 4 categories: *Skilled* occupations such as professionals, managers, technicians and associate professionals. Typically they, which typically require post-secondary education and training including post-secondary vocational and longer academic degrees; *white collar semi-skilled* occupations, including clerical support and sales workers, typically requiring lower or upper-secondary education and occasionally shorter post-secondary vocational qualifications; *blue collar semi-skilled* occupations, with education and skills requirements similar to the previous category above; and *elementary* occupations relying on skills corresponding with primary education.

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Chapter 4

Transparency in learning outcomes

Having the right skills is not sufficient; these skills need to be recognised and used effectively by employers and learning institutions. Qualifications serve this function by certifying acquired knowledge and skills. This chapter explores how qualifications work, why they sometimes fail, and what can be done to make them work better. It first discusses how to construct strong qualification systems. It then examines how competence-based qualifications can be fully exploited, and how effective skills assessments may underpin the credibility of qualifications.

Building strong qualification systems

Qualifications are an information tool. They offer a signal, conveying to different stakeholders with more (or less) certainty that the qualified person has a relevant package of knowledge and skills. In principle, such a signal can be hugely beneficial because it makes transparent the knowledge and skills which would otherwise be hard to assess. This section argues that realising these benefits through strong qualifications requires the engagement of employers in their development, mechanisms to limit their proliferation, and support for qualifications through effective assessments.

Issues and challenges: Realising the benefits of qualifications

Qualifications have many potential benefits

Qualifications, as information tools, can play different roles, with different associated benefits:

- *Signalling job skills to employers*. It is difficult for employers to measure the skills of job applicants. Qualifications that reliably signal relevant skills help employers to identify suitable recruits.
- *Legally regulating access to certified occupations*, sometimes because of health and safety considerations – for example in healthcare fields (see Box 4.1).
- *Reducing the search costs of jobseekers*, as they can more easily identify job openings for which they have the right competences, as indicated by an employer's expectation of the qualification. Qualifications, as entry routes to occupations, clarify the programmes of study necessary to enter target occupations, serving a career orientation role.
- *Providing a means for employers and organised labour to influence the content of individual programmes* when they negotiate the content of qualifications. This helps to ensure that the right skills are taught and updated in response to changing labour market requirements.
- *Improving quality*. Institutional pass rates or assessment grades for national qualifications can indicate the quality of teaching, while recognising that other factors such as the initial skills of learners are also relevant.

Labour market regulation has a major impact on qualifications

Sometimes licensing arrangements mean that qualifications are legally required to practise an occupation. In Austria, for example, some craft occupations, like florists, are licensed that would not be licensed in other countries, while

in Germany many occupations have been deregulated in recent years. In the United States, a striking estimate is that 20% of jobs are licensed (Kleiner, 2006). But other forms of regulation are also important: when strong employment protection and high wages make recruitment a risky commitment for an employer, employers will be keener to seek out and make use of qualifications (see Box 4.1).

Box 4.1. **Contextual factors that matter for qualifications**

Occupational regulation

Under occupational *licensing*, practising an occupation legally requires the licence which proves that the holder meets certain prescribed competence standards. Licensing may be managed and implemented at national level, sometimes in line with international (e.g. European) legislation (e.g. occupations in the health care sector).

Certification is less restrictive, allowing anybody to practise in an occupation but for workers to apply on a voluntary basis to a relevant body (e.g. government or private non-profit agency) to be certified as having the requisite skills (e.g. hairdressers in the United Kingdom, travel agents and car mechanics generally in the United States).

Registration simply requires individuals to register their name, address and qualifications with the appropriate regulatory body before practicing their occupation, but with no explicit skill standards (e.g. estate agents in the United Kingdom).

Labour market regulation

When it is more difficult for employers to dismiss an employee, the costs of a wrong recruitment decision are greater. Collective bargaining arrangements requiring employees to be paid high wages add to the risks to an employer taking on recruits that (possibly) might have good skills but lack qualifications. Strong qualifications can counterbalance this by signalling potential recruits' skills and increasing employers' willingness to hire.

In some countries this balance is evident; In Austria and Germany relatively high employment protection is combined with qualifications designed to have a strong signalling value. Conversely, weak qualifications with a low signalling value may be tolerated in labour markets with weak employment protection since employers may be able to hire recruits easily, and, depending on their performance, keep or fire them. This is notably the case in the United States and to some extent in the United Kingdom, countries that have some of the weakest employment protection among OECD countries.

Source: Cedefop (2013), "The role of qualifications in governing occupations and professions", *Cedefop Working Papers*, *www.cedefop.europa.eu/EN/Files/6120_en.pdf*; UK Commission for Employment and Skills (UKCES) (2013a), *OECD Review: Skills beyond School. Background Report for England. Briefing Paper February 2013*, UK Commission for Employment and Skills, *www.ukces.org.uk/publications/oecd-skills-beyond-school-england*; Kleiner, M, M., and A. B. Krueger (2008), "*The prevalence and effects of occupational licensing*", *NBER Working Paper*, No. 14308, September 2008, National Bureau of Economic Research, US, *www.nber.org/papers/w14308.pdf*.

Realising the full benefits of qualifications can be difficult

Obstacles include:

- *Weak industry engagement*. Employers and organised labour should in principle be able to reflect industry needs by negotiating the content of qualifications. But their level of engagement is highly variable. Sometimes formal mechanisms to involve industry are lacking or ineffective, for example because the industrial bodies involved are not representative or because their voice is weak compared to that of other stakeholders (e.g. education and training institutions, government bodies). The result is qualifications that lack relevance to the labour market, and are not trusted by employers.
- *Proliferation of qualifications*. Too many overlapping and competing qualifications diminish their value as a signal, because complexity is the enemy of comprehension. Even though an individual qualification may be good quality and make sense to immediate stakeholders, it may play an unconstructive role by complicating the overall qualifications picture.
- *Weak assessment*. Qualifications will only reliably signal a skillset if the possession of that skillset has been properly tested. But the assessment of a package of occupational skills is demanding, recognising that many jobs require a complex mix of generic skills like literacy and team working ability and more occupation-specific competences.

Recommendation: Strong, clear, labour market-relevant vocational qualifications

Build qualifications that are meaningful to employers and useful to students by fully involving labour market actors in their design, updating and delivery; ensure the qualification system delivers a manageable number of qualifications, avoiding proliferation and overlaps; the content of qualifications should be, so far as possible, nationally consistent while allowing an element of local flexibility.

Explanation and country approaches: Building effective qualifications

Employers and trade unions should be involved in designing qualifications and assessments

It is critical to engage employers and organised labour in the creation and updating of qualifications, as they know which qualifications are needed in the labour market and the skillset required for particular jobs and therefore for the associated qualification (see Box 4.2).

National curricula can leave room for a locally negotiated element

Considered from an international perspective, there are two main models for employer involvement in qualification design. One is through a national top-down system, where employers are involved in creating national qualifications. This framework is relatively common in continental Europe and elsewhere.

Box 4.2. **Industry engagement in the design and updating of qualifications in Denmark**

In Denmark the social partners play an active role in defining new courses and programmes and in advising on existing professional programmes. This is reflected in the Council of Academy Profession Programmes and Professional Bachelor Programmes, created in 2008. The Council may advise the Ministry of Science, Innovation and Higher Education on a wide range of issues, including qualification needs. The board includes up to 21 members, including representatives of various industry and employer organisations, trade unions, regions and local governments.

The social partners may also be represented in the educational advisory committees which the institutions set up within the various disciplines of their programmes. The committees advise on the quality and relevance of existing and future programmes of study. The social partners may also sit on the board of the university colleges and academies of professional education. This local involvement helps to ensure that the content of individual vocational programmes meets the demands of the labour market and that qualifications are recognised in business and industry.

Source: Field, S., et al. (2012), *A Skills beyond School Review of Denmark*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264173668-en*.

Such qualifications have the advantage of national consistency, so that someone trained in one part of the country has skills recognised in another part. Alternatively, where relatively autonomous institutions (such as universities and colleges) can establish their own qualifications, they can design curricula in partnership with local employers. This approach allows for local responsiveness.

There are advantages in a blend of both models. Certain qualifications established more centrally – for example by the *Länder* for professional programmes in *Fachschulen* in Germany, or in the central qualifications systems for post-high school programmes in Romania – also leave scope for a locally negotiated element: around 20% of the curriculum is determined by the individual *Fachschule* in Germany, and around 15% in the post-high school in Romania (Fazekas and Field, 2013b; Musset, 2014). These arrangements balance the advantages of national consistency in qualifications with responsiveness to local employer needs. Similarly, in England the Commission on Adult Vocational Teaching and Learning argued that vocational qualifications should include both a national core and a locally tailored element, giving employers a direct influence in shaping skills programmes and qualifications (Learning and Skills Improvement Service, 2013). Local tailoring of curricula may also serve the purposes of articulation with a locally provided higher education degree, an issue pursued in Chapter 5.

Local flexibility in curricula therefore provides a powerful support for local provider-employer partnerships, and is therefore linked to earlier recommendations in Chapter 3 for strengthened work-based learning

arrangements, and measures to encourage practitioners from industry to teach vocational programmes part-time.

Qualifications should be regulated to limit proliferation

While new qualifications are always needed, there need to be checks in place to see that they add value rather than adding confusion. In Switzerland, for example, when new federal diploma qualifications are approved, they are industry-led, but the federal authorities check that the proposed qualification has the support of the whole industry sector, not just of some enterprises. This means that the whole industry sector can be engaged in the updating of the qualification in response to changes in technology or industry organisation. Micro-qualifications, appropriate only to a small industrial subsector, also need to be avoided as they may be unhelpful to graduates if they wish to change jobs and develop their careers. Involving unions alongside employers in the development of qualifications should help to reduce these risks. In England, a unique qualifications arrangement involving a separate tier of awarding organisations has been associated with a proliferation of vocational qualifications. This is now undergoing reform (see Box 4.3).

Qualification frameworks help to provide structure

Qualification systems are often regulated, and sometimes subject to an overarching framework which locates them in an ordered sequence of levels (see Box 4.4). Many OECD countries are currently implementing qualification frameworks, or have done so recently. In principle, they can make vocational education and training systems more transparent, so that the value of different qualifications can be more clearly recognised by students, employers and other stakeholders. If frameworks are underpinned by a strong methodology for allocating qualifications to levels, supported by key stakeholders, and backed by complementary measures to unify the vocational and professional system and improve transitions, they can facilitate lifelong learning, and improve access to higher level education (OECD, 2010). At the same time, expectations of qualifications frameworks have sometimes been too high. They are not a panacea (see Allais, 2009).

All qualifications rely on effective assessments

In order to be credible, qualifications need transparent and consistent assessment, which guarantee that qualification holders have the intended skills. This holds for both education and training programmes that lead, through a final assessment, to qualifications, and for professional examinations which are in a sense nothing but an assessment and linked qualification. Transparent and consistent assessment frameworks ensure that clear standards are applied, benefit students by making it easier to prepare for the exams, and grant

Box 4.3. **Reform in England to reduce the number of qualifications**

In England awarding organisations design qualifications, while further education colleges and other training providers buy the right to deliver these qualifications. Awarding organisations seek accreditation from the Office of Qualifications and Examinations Regulation (Ofqual), on the basis of a plan of provision defining the occupational fields with which they are concerned. This accreditation permits government funding for the qualifications. Approximately 180 recognised awarding organisations are responsible for 18 000 accredited qualifications. While some large providers offer a full range of qualifications, most cover a much more limited field. The awarding organisations include charities and profit-making organisations, some stand-alone businesses and others that are part of larger, more diverse organisations. Before 2011, Sector Skills Councils (SSCs) were responsible for approving vocational qualifications based on the National Occupational Standards for which they are responsible.

Training providers pay a fee to the awarding organisations to use their qualifications and they have to comply with awarding organisations' course and exam requirements. There has been widespread concern that the very large number of vocational qualifications undermines their signalling value. The OECD review of England recommended the abolition of the awarding body framework in favour of a franchise arrangement that would drastically simplify the qualification system. The Whitehead review, commissioned by the government, also recommended substantial simplification. The government now intends to reduce approved qualification numbers drastically.

Source: Musset, P. and S. Field (2013), *A Skills beyond School Review of England*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264203594-en*; UK Commission for Employment and Skills (UKCES) (2013b), *Review of Adult Vocational Qualifications in England: Led by Nigel Whitehead UK Commission for Employment and Skills*, *www.ukces.org.uk/assets/ukces/docs/publications/review-of-adult-vocational-qualifications-in-england-final.pdf*; Department of Business Industry and Skills (2014), *Getting the Job Done: the Government's Reform Plan for Vocational Qualifications*, *www.gov.uk/government/publications/vocational-qualification-reform-plan*.

employers more confidence in the skills of qualification holders. Assessment issues are discussed later in this chapter.

Competence-based models

A traditional qualification is obtained through a defined learning programme (including a period of study and an institution) leading to an assessment. It defines not only what is learnt, but how it is learnt. But students may learn at different speeds, and some will already know some course material. Some learning institutions may be able to deliver the relevant training more effectively than others. Self-study, e- and distance learning increasingly undermine traditional notions of required programmes of study. So in principle, multiple

Box 4.4. **Qualifications frameworks**

In Belgium (Flanders), the development of a qualifications framework since 2009 aims to make qualifications more transparent and comparable. The intention of the framework is to clarify which programmes lead to the same qualification level and to the same job, making qualifications equivalent regardless of where the students have been taught – in a centre for adult education, a university college, or a competence centre. It will also give more visibility to the different qualifications for both students and employers. In the case of new qualifications, creating a new professional qualification starts with an assessment of how the qualification will translate into an education programme and identifies providers best suited to deliver the programme. The fact that the qualifications are defined by competences should help to support recognition of prior learning.

Source: Musset, P. (2013), *A Skills beyond School Commentary on Flanders*, OECD Reviews of Vocational Education and Training, OECD, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnFlanders.pdf*.

South Africa implemented a national qualification framework in 1995. It is intended to: *i)* create an integrated national framework for learning achievements; *ii)* facilitate mobility and progression within education, training and career paths; *iii)* enhance the quality of education and training; and *iv)* accelerate the redress of past unfair discrimination.

Recent reforms in the framework aim to simplify it and limit the proliferation of qualifications. It identifies ten levels of learning achievement, and includes three sub-frameworks covering: *i)* General and Further Education and Training Qualifications; *ii)* Higher Education Qualifications; and *iii)* Trades and Occupations Qualifications. It is expected that these reforms should help to improve articulation, and to support more effective career guidance and recognition of prior learning, while also improving co-ordination across the different institutions and shareholders involved in the educational system.

Source: Department of Higher Education and Training – Republic of South Africa (DHET) (2013), *White Paper for Post-School Education and Training*, Pretoria.

efficiencies might be realised by relaxing strict requirements on the programmes and institutions of study and focusing on learning outcomes, regardless of how they are realised. This section argues that countries need to take full advantage of such competence-based approaches, both in the context of professional examinations, and through effective recognition of prior learning.

Issues and challenges: Concentrating on learning outcomes

Competence-based approaches still have limited currency

While the theory of competence-based qualifications is convincing, many years of enthusiasm have not shifted practice substantially. Primary, secondary and much post-secondary and tertiary education remain dominated by rigid

expectations of study time and strict accreditation of learning institutions. One exception to this rule is professional examinations, briefly described in Chapter 1 and in more detail below.

There are some barriers to recognition of prior learning

Recognition of prior learning is a process of certifying pre-existing skills and knowledge, used in many OECD countries to make the skills of prospective and current students visible to both education and training institutions and employers (see Box 4.5). It can reduce the direct and opportunity costs of formal learning through course exemptions and encourage adults with limited formal education to re-enter education by validating the competences they have acquired through work. It has particular relevance to migrants with skills and qualifications formally and informally acquired outside the country (Field et al., 2012). Unfortunately it is more often praised than practised. Professional educators can be, understandably if not defensibly, reluctant to accept that the competences they teach can also be acquired in different learning contexts, and even informally. Assessment of informally acquired skills is technically demanding since such learning is usually

Box 4.5. **Recognition of Prior Learning (RPL) in the United States and Iceland**

In the **United States**, RPL has historical roots in the experience of World War II veterans who were granted college credits in recognition of their military training. Half of all colleges and universities in the US have been estimated to offer RPL in some form. A recent review of state policies highlighted the role played by state-level initiatives in building interest in RPL. In Tennessee the funding formula was altered so as to give colleges greater incentives to develop their use of RPL and therefore improve completion rates.

In **Iceland**, recent legislation contains provisions on individual entitlement to RPL at upper secondary level. It is seen as a means of combating dropout. RPL is aimed at people with poor formal education, allowing those who wish to return to upper secondary school to shorten the length of the required programme. The 12 lifelong learning centres around the country and the 2 centres for certified trades co-operate in pursuing RPL projects. On average a participant going through a validation process within the certified trades ends up with 28 units of credit recognised through RPL (the carpentry programme for example involves 100 units in total). Over the period 2007-09, 492 individuals had their competences recognised in this way, the majority within the certified trades.

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202153-en*; Musset P. and R. Castañeda (2013), *A Skills Beyond School Commentary of Iceland*, OECD Reviews of Vocational Education and Training, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnIceland.pdf*.

undocumented. Employers may not always want to make the skills of their employees more visible to firms that might poach their best workers.

Recommendation: Take advantage of competence-based approaches

Flexible ways of recognising skills should be encouraged, including both recognition of prior learning and competence-based examinations, supported by strong assessments.

Explanation and country approaches: Flexible pathways to learning outcomes

Recognition of prior learning has major benefits

A large survey undertaken in the United States provides evidence of the benefits of RPL. Some 13% of RPL students enrolled in two-year programmes earned an associate degree, compared with only 6% of non-RPL students. As the number of RPL credits increased, the average time to graduation decreased. While these correlations may partly reflect how students are selected or select themselves, their size suggests that RPL may be causing at least part of these documented benefits (Council for Adult and Experiential Learning, 2010).

Better incentives may encourage its use

Education institutions sometimes have inadequate financial incentives to recognise prior learning, particularly if course exemptions trigger reduced fee income or public funding. Compensatory mechanisms can balance this effect. In Denmark the government provides institutions issuing RPL certificates (and therefore shortening the duration of the programme) with one-off funding. Despite this, the majority of institutions do not see RPL as profitable (Danmarks Evalueringsinstitut [EVA], 2010).

Professional examinations can test competences without prior programme requirements

"Professional examinations" (sometimes called "industry certifications") are a family of qualifications with some common characteristics. They are typically industry-driven certifications of occupational skills, assessed through an examination with limited pre-requisites. While examinees very commonly pursue preparatory courses, they are not usually obligatory. Examinations of this type therefore have the attractive quality of avoiding the normal constraints of educational programmes requiring fixed "seat time" to acquire the qualification. They can also provide a practical way of recognising prior formal and informal learning, often acquired on the job (see Box 4.6).

For these professional examinations, the challenge is to find the right balance in terms of regulation – industry should remain the driving force of these qualifications, but some degree of regulation may be necessary to

ensure transparency and reliability. The degree of regulation varies greatly. For professional examinations driven by industry, regulation might be relatively light touch to maintain the principle of industry ownership, while at the same time ensuring that qualifications are clear and valuable to students, employers and education and training bodies. For example, the review of the United States recommended the creation of a quality hallmark for certifications, that certification providers may seek on a voluntary basis. The hallmark would be given upon evidence that the certification is supported by employers and relies on robust tests of competences (Kuczera and Field, 2013).

Box 4.6. **Professional examinations in Switzerland and Israel**

In Switzerland, there is an industry-led, but federally regulated system of professional examinations which has many similarities with the German advanced vocational exam system. The definition of each exam sets out the professional content of the exam (competency profile), but it also contains detailed guidance and prescriptions on: how the exam should be conducted (e.g. main parts of the exam, their relative weight in the final score, types of assessment); who the examiners should be (e.g. experts coming from outside the professional association); and what level of competency the examinees should demonstrate. The Federal Office for Professional Education and Training checks the quality of examination documentation. Monitoring of exam procedures also takes place at the local level.

In Israel occupational certifications are administered by the Ministry of Economy in more than 100 different professions. There are 211 basic certifications, and 76 upgraded ones. Some 70 000 people each year take these examinations, sometimes at the end of an educational programme, and sometimes as a stand-alone examination.

See also Box 1.2 for a description of the advanced vocational examinations in **Germany**.

Source: Fazekas, M. and S. Field (2013a), *A Skills beyond School Review of Switzerland*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264062665-en*; Musset, P., M. Kuczera and S. Field (2014), *A Skills beyond School Review of Israel*, OECD Reviews of Vocational Education and Training, OECD, Publishing, Paris, *http://dx.doi.org/10.1787/9789264210769-en*.

Effective assessment

Assessment is the rock on which strong qualifications rest, confirming that qualified persons have the intended competences. Competence-based qualifications, with no required programme of study, only make sense in the context of effective final assessments. This section argues that close attention to the quality of those assessments is required.

Issues and challenges: Weak incentives and difficult assessment

Assessments are too often weak, particularly in the absence of adequate incentives

Some assessments of vocational skills are paper and pencil, but many, for good reasons, involve practical work tasks, where consistent assessment is difficult. The rules defining the content and method of assessment and requirements for the assessors (e.g. who is on the examination board) are important but hard to pin down precisely. Often they leave room for discretion and variation.[1]

Designing and conducting tests of competences is difficult and/or costly – in particular when practical skills are to be tested and the material and equipment involved is expensive. So when direct tests of competences are used as the only method to check that the desired skills have been acquired, they tend to be used for easy-to-test elements of a skillset or particular occupations (for which the desired skillset is clear and methods of assessment are commonly agreed and feasible).

Not only are effective assessments difficult to develop, the incentives to pursue them can be weak. This is a challenge to qualifications generally, but can be a fatal blow to competence-based qualifications. Qualification providers sometimes have incentives to lower standards and increase pass rates, to make their qualification more appealing to students. While some employers might notice declining standards, this risk is often less compelling than the more obvious appeal of marketing "easy" qualifications to students. Such challenges were noted in the review of Korea (Kis and Park, 2012), where mainly tuition-funded junior colleges have strong incentives to attract students, and allow them to graduate. The review of England highlighted a similar challenge, as training providers may choose among different awarding organisations (which define the content of qualifications and examination requirements). Training providers receive public funding depending on whether the qualification is obtained by the student, so that there are incentives for awarding organisations to create less demanding qualifications that are easier to teach and easier to pass (Musset and Field, 2013; Richard, 2012). The review of the United States highlighted a similar challenge for certifications (Kuczera and Field, 2013).

Recommendation: Ensure reliable and consistent assessments

Assessments need to be reliable, consistent and demanding so that the qualifications they support are credible proofs of competence.

Explanation and country approaches: Setting standards and establishing incentives

Quality standards for assessments are needed

Quality standards for assessments may contain two main elements: a set of rules (or standards) regarding examination procedures defined by a body external to the training provider and arrangements that check compliance with these

standards. The rules tend to cover issues such as how the assessment should be conducted and who the examiners should be. These rules may be more or less flexible, leaving room for variation across institutions and/or regions. They may be defined by national or local bodies, and by public or private entities. For example, in the United States, accreditation of an industry certification by the American National Standards Institute draws on ISO standards (see Box 4.7). In Germany,

Box 4.7. **Examination standards and accreditation**

In Austria, all professional bachelor and master programmes are accredited and evaluated by the Council of Universities of Applied Science (*Fachhochschulrat*). Programmes are modularised, and each module prescribes competences that students should have obtained upon completion of the course. Each institution can develop curricula for the programmes it provides, but each programme must be accredited and the proposed curricula approved as part of the accreditation procedure. Similarly, each institution can set its own examination procedures, but these must be approved through accreditation. Students are tested typically after completion of the relevant module to check whether they have acquired the relevant skills. Examination assignments are developed by teachers, based on the curriculum. At the end of the programme, students prepare a diploma thesis and pass an oral examination. The composition of the examination board must be approved in the accreditation process.

An **International Standard in Examinations** (ISO/IEC 17024) aims to set out clear standards governing the integrity, impartiality and credibility of examination systems used for professional certification. It covers matters such as the consistency and transparency of the examination criteria, and the impartiality of the examiners and avoidance of conflicts of interest. While there is no accreditation procedure in the **United States** which would cover all examinations, the American National Standards Institute (ANSI) plays a significant role. The goal of ANSI accreditation of an examining body and an examination is to increase the integrity of and confidence in the certification process in accordance with ISO standards (ISO/IEC, 2012). ANSI publishes accreditation criteria and procedures along with assessment results. A typical assessment involves inspection of written documents as well as on-site visits looking at examination practice and organisational processes. Certified organisations have to be reassessed about 12 months after the initial assessment. At the end of each assessment period ANSI makes recommendations to certified bodies, which they have to implement to obtain or maintain their certification.

Source: FH Council (2010), *Guidelines of the Fachhochschule Council for the Accreditation of Bachelor's, Master's and Diploma Degree Programmes*, *www.fhr.ac.at/fhr_inhalt_en/00_documents/AR_08102010_Version1.1.-en.pdf*; ISO (International Organization for Standardization) (2012), *New and Improved ISO/IEC 17024 Standard for Personnel Certification Programmes*, *www.iso.org/iso/home/news_index/news_archive/news.htm?refid=Ref1625*, accessed 28 March 2013; ANSI (American National Standards Institute) (2012), *Policies and Procedures*, *www.ansica.org*, accessed 3 September 2012.

federally regulated advanced vocational qualifications draw on federal standards for assessment, while qualifications regulated by chambers draw on rules defined by local chambers (see Box 1.2). Compliance with externally defined standards is voluntary in some countries for some qualifications (e.g. certifications in the United States) and compulsory in others (e.g. vocational examinations in Germany, professional examinations in Switzerland, *Fachhochschule* programmes in Austria).

In Germany, where local chambers define the assessment methods of chamber-regulated professional examinations, the OECD review encouraged the establishment of a national framework with clear standards for all examination procedures to ensure clear, fair and consistent assessment methods (Fazekas and Field, 2013b).

Social partners should generally also be involved in the design of assessment frameworks and participate in assessments, partly because of their expertise, but also to ensure that they trust qualifications as demanding tests of competences. This is particularly important to balance the risk that students and training providers will be biased in favour of assessments that minimise failure rates.

Note

1. In the absence of information about the value of different programmes (which is a common challenge, as discussed below), individuals cannot make informed choices and may opt (and pay) for qualifications with limited labour market returns. (For example, a study looking at accountant qualifications in the United States (Sweeney and Bame-Andred, n.d.) found that only one out of three accounting certifications had added value in terms of a salary premium).

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Chapter 5

Clearer pathways for learners

Professional education and training takes place at career crossroads, leading on into different careers and further learning opportunities. Crossroads need good pathways and clear signposts. This chapter looks at the different routes of entry to and exit from post-secondary professional programmes and how they are signposted. It argues that higher level vocational qualifications are needed for graduates of the initial vocational system, providing a career structure to support and enhance the status of the initial vocational route. More flexible modes of study are needed for adult learners. Systematic efforts are needed to support the articulation of professional training with academic higher education. The whole structure needs to be supported by high-quality career guidance and information.

Pathways of entry 1: Higher-level qualifications for upper secondary graduates

In countries with strong upper secondary vocational systems, post-secondary professional programmes play a key role in providing qualifications to broaden or deepen initial occupational qualifications. This section argues that this structure needs support and in many countries active development. Effective entry routes to professional programmes are also needed for graduates of general upper secondary education.

Issues and challenges: Both labour market needs and student demand argue for developing higher-level qualifications

Graduates of upper secondary vocational programmes need further learning opportunities

In the past, some people thought that initial vocational training would provide all the skills needed for a working lifetime in a single job. Even in the past, this expectation was often unfounded, and it is now entirely outmoded, as technical progress increases and changes the demand for higher level skills. Despite this, in many countries opportunities for graduates from upper secondary vocational programmes to deepen and update their skills remain limited. This is worrying, because more than anything else, the lack of such opportunities deters young people from pursuing an initial vocational route, sometimes in favour of less suitable career paths.

Many upper secondary graduates of general programmes need professional training

Some countries have few vocational programmes at upper secondary level, keeping school programmes broadly comprehensive, and postponing career-specific programmes to the post-secondary level. In these circumstances, the transition into post-secondary programmes is the critical point where a young person first selects a career path.

Recommendation: Provide programmes to upgrade the skills of upper secondary vocational graduates

To meet labour market needs and the aspirations of students, ensure that graduates from upper secondary vocational programmes have the opportunity to pursue higher-level vocational and academic qualifications.

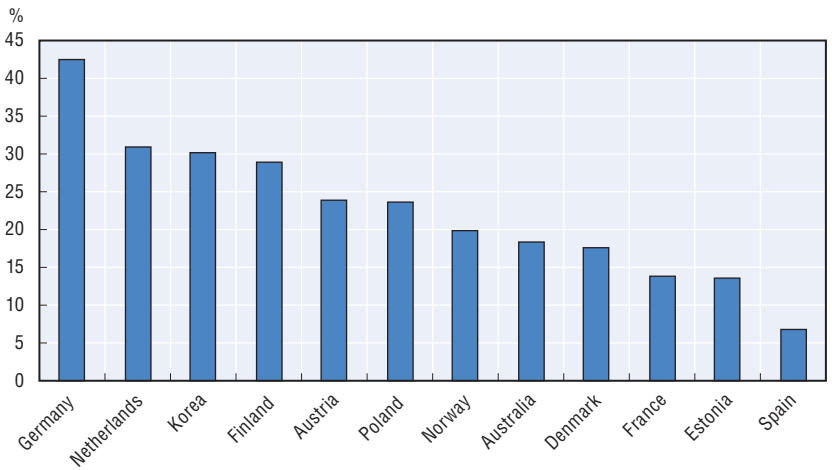
Explanation and country approaches: Devising pathways for transition

Some programmes aim to deepen and develop the skills of vocational graduates

Many countries have tried to emulate the dual apprenticeship systems that alternate on-the-job training with school-based education. Such attempts have sometimes failed because of insufficient attention to the institutional context – including the range of further programmes available for qualified apprentices in dual system countries. Such programmes may offer a specialised technical skill, or skills that complement an initial occupational skill – such as the capacity to train other people, or use the occupational skill in a small business. These career and learning routes help to professionalise the initial occupation by establishing a career structure and routes of progression. They therefore play a vital role in supporting the apprenticeship system, both by providing an upward career path for apprentice graduates, and by providing professional training for in-company trainers of apprentices. Box 1.3 in Chapter 1 describes the options available in Germany. In some countries, including Germany, Korea and the Netherlands, one-third or more of students in professional training come from upper secondary vocational tracks (see Figure 5.1).

Figure 5.1. **The transition from upper secondary to professional programmes**

Percentage of short-cycle professional[1] programme students aged 16-65 whose highest educational attainment is upper-secondary VET



1. For a definition and explanation see Box 1.4.
Notes: Upper-secondary VET includes programmes classified as ISCED 3C long, ISCED 3B and ISCED 3A identified by countries as vocationally oriented.
Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098592

Management qualifications are important

Alongside technical skills associated with particular jobs, supervision skills are needed for those who manage others in these jobs. Some countries lack training for the supervisors of apprentices – see for example the OECD's recommendations for Norway in Kuczera et al. (2008). In others, training for middle management is weak. A recent study commissioned by the UK government estimated that ineffective management was costing UK businesses over GBP 19 billion per year, while in 2012 nearly three-quarters of organisations in England reported a deficit of management and leadership skills. 43% of UK managers rated their line manager as ineffective, with only one in five being qualified (BIS, 2012). Box 5.1 gives two examples of management training.

Box 5.1. **Management qualifications**

In **Romania,** the foreman schools offer programmes designed to enable experienced technicians to assume management functions in their workplace, provide them with the skills to supervise students during work placements, teach vocational subjects in schools, and update their technical skills. These schools have many features in common with the professional examinations in other countries. In Romania, as in some other OECD countries, such a qualification is often necessary to become self-employed and/or to start a company. Foreman schools are able to offer their own programmes based on the needs of the local employers. In some cases the programmes can focus more on giving future foremen the skills needed to run a team; in others they develop the pedagogical skills needed to manage the practical training of students.

In **Iceland,** graduate apprentices, after a certain period of work – one year in most fields, may learn how to run their own business, through the master craftsman examination; in 2010, 566 students were registered (Ministry of Education, Culture and Science, 2012). These programmes are taught mostly in upper secondary schools, but also in two universities. The courses are usually in the evening and include general subjects, management, and theoretical and practical vocational topics.

Source: Musset, P. (2014), *A Skills beyond School Commentary on Romania*, OECD Reviews of Vocational Education and Training, OECD, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnRomania.pdf*; Musset, P. and R. Castañeda Valle (2013), *A Skills beyond School Commentary on Iceland*, OECD Reviews of Vocational Education and Training, OECD, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnIceland.pdf*.

Graduates of initial vocational programmes also often enter more academic tertiary programmes

In the Netherlands, about half the graduates from the highest initial vocational track (MBO 4) continue into professional bachelor programmes in *Hogescholen* (Fazekas and Litjens, 2014). In Germany, access to university

for students without the normal higher education access qualification was substantially enhanced in 2009. Switzerland has opened *Fachhochschulen* to graduates from the dual apprenticeship system through the creation of a specific vocational matriculation examination (the *Berufsmaturität*), to be completed in parallel to an apprenticeship programme, and providing access to tertiary education: around 12% of all apprentice graduates obtain the *Berufsmaturität* and they represent half of the students in the *Fachhochschulen* (Fazekas and Field, 2013a). (Access to *Fachhochschulen* is also possible through recognition of prior learning.) Austria introduced a similar exam (the *Lehre mit Matura*) in 2008 (Musset et al., 2013). In Korea, although vocational high schools are designed for direct labour market entry, in fact around three-quarters of graduates immediately enter tertiary education (Kuczera, Kis and Wurzburg, 2009).

Alongside these opportunities, measures are needed to help students profit from them. Upper secondary vocational programmes therefore need to be designed not only for labour market entry but also to prepare students for further education, building into these programmes a sufficient range of study skills, including basic skills – a point emphasised in OECD (2010).

Professional education and training sometimes offers a first experience of career preparation

Young school-leavers exiting general upper secondary education are not prepared for any specific career, and may therefore need further training to get good jobs, even if they do not aspire to university-level qualifications. This transition is particularly critical in countries like the United States where there is little career preparation at upper secondary level. This was reflected in President Obama's request, in his 2009 State of the Union Address, that every young citizen of the United States commit, beyond high school, to at least one year of higher education or career training. In the United States a wide range of initiatives seek to address this transition, with the objective of encouraging access to post-secondary education, and as a result to reduce the risk of high school dropout. One very common approach to bridging the gap is to pursue some modules of post-secondary programmes while still in high school. This is now also being tried in Scotland (Kuczera, 2013). Box 5.2 compares this approach in the United States with vocational colleges in Austria, which, in a completely different way, also aim to sustain transition to the post-secondary level by building both upper secondary and post-secondary levels into a single qualification and programme.

Pathways of entry 2: Providing for adults

There are two big reasons why post-secondary learning institutions sometimes neglect adults. One is that over many years OECD countries have seen an almost inexhaustible supply of young people pursuing post-secondary training opportunities, providing a reliable customer base for training providers without having to worry about adults. The second is that adults have more

Box 5.2. **Contrasting approaches to transition to the post-secondary level: The United States and Austria**

In **the United States** evidence shows that performance at high school bears heavily on subsequent college outcomes. It also boasts a range of high school programmes emphasising readiness for post-secondary education which are unmatched in other OECD countries. These include dual credit, advanced placement and other programmes. For example accelerated completion is a nation-wide initiative supported by federal Perkins funds that allows students to gain post-secondary credits while still in high school. By exposing students to college level coursework and college culture it familiarises and prepares students for the academic expectations of college. In 2001, 15% of high school students in Florida earned college credits.

In **Austria,** 27% of upper secondary students enrol in a vocational college (*Berufsbildende höhere Schule*), where after 5 years they can acquire both a vocational diploma and the *Reifeprüfung* giving access to university. After several years of professional experience graduates from technical and agricultural vocational colleges are granted the title "Engineer". The vocational colleges are also accessible for graduates from other upper secondary programmes. Increasingly vocational colleges provide an important route into tertiary education: one in four university students, and almost one in two *Fachhochschulen* students, are now vocational college graduates.

Since these five-year programmes include both an upper secondary and post-secondary component, vocational college graduates in Austria are classified as ISCED 4A. Almost 20% of the cohort graduate at this level, after the Czech Republic (26%) the highest level in the OECD. This reflects the fact that the vocational college programmes, straddling the upper secondary and post-secondary levels, have few international parallels.

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202153-en*; Musset, P., et al. (2013), *A Skills beyond School Review of Austria*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264200418-en*.

complex learning requirements, adding to the reasons (at least from the provider point of view) for keeping life simple and concentrating on young school leavers. This section looks at how this picture is changing for demographic and other reasons, and argues that professional training now needs to raise its game in response.

Issues and challenges: A patchy response to the needs of adults

Adults have very different needs than young school-leavers

There are now declining numbers of young people in many OECD countries (with the United States being a salient exception), so the relative importance of adult learning to workforce skills is increasing. More policy attention to adult

needs is therefore required, while training providers need to rethink their approach as their student profile changes. Many adults take advantage of professional programmes to deepen their technical skills, make a sideways career move, or return to work after a period of concentrating on domestic responsibilities. Rapid economic and technological change mean that some workers need to upskill to remain abreast of changing requirements, while others have to reskill entirely.

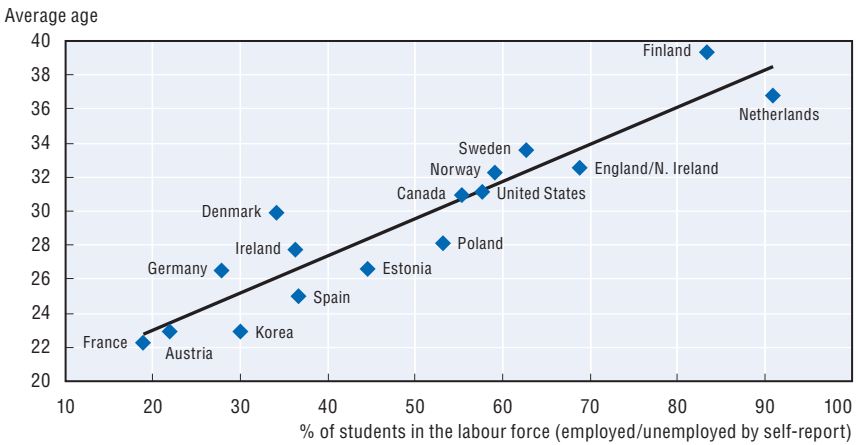
Adults often have to balance the pursuit of further qualifications with the demands of their work and home lives. They may wish to study part-time or at a flexible pace; their home and/or workplace may be some way from the learning centre, so distance learning options may be attractive; they may already possess relevant skills and experience, making some parts of the programme unnecessary. These requirements are very different from those of younger recent graduates from upper secondary education.

Country systems engage adult learners to a varying extent

Figure 5.2 shows how country systems can be located on a spectrum. In some of them, such as Austria and Korea, students tend to be young and few describe themselves as part of the workforce. These are mostly full-time students, for example in Austrian vocational colleges, or in Korean junior colleges. In other countries, students are more often in their late 20s or early 30s. In the United States, community college provision is dominated by part-time adult students (Kuczera and Field, 2013). In Austria, Germany and Switzerland, professional examinations led by industry serve adults with some years of relevant work experience (Musset et al., 2013; Fazekas and Field, 2013a, 2013b).

Figure 5.2. **Older students tend to be in the labour force**

Average age of students aged 16-65 in professional training[1]



1. For a definition and explanation see Box 1.4.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098459

Institutional and funding obstacles can hinder adult learning

Developing an adult-friendly system of professional training is not easy. Institutions dominated by daytime weekday classes for full-time students can find change difficult, not least because it may require teachers to work less social hours in the evenings and at weekends. Breaking down programmes into discrete modules to allow for course exemptions and different paces of study can be challenging. Recognition of prior learning will involve novel approaches to assessment, and unplanned course exemptions: as discussed in Chapter 4, its implementation has been a halting process.

Recommendation: Ensure flexible forms of provision suitable for adults

To meet the needs of adult learners, ensure flexible modes of study, including part-time and modular arrangements, distance learning and competence-based approaches.

Explanation and country approaches: Alternative models of provision

Training providers can respond

Adult needs can be met in a variety of ways:

- Separate adult learning institutions may offer the same qualifications as those delivered to young people. In **Denmark**, a separate parallel adult education system allows access to post-secondary qualifications at levels corresponding to those of the ordinary education system. More than 40% of adults participate in formal and/or non-formal education in any given year (OECD, 2011).
- Spread throughout **Belgium (Flanders)**, centres for adult education provide second-chance education and basic skills programmes, and vocational programmes at upper secondary and post-secondary level. To facilitate the participation of working adults efforts have been made to make programmes, (particularly associate degrees), flexible through modular provision (Flemish Department of Education and Training, 2013).
- **Iceland** has an approach designed to serve the needs of a sparsely populated country. Twelve regional lifelong-learning centres offer distance learning and distributed learning programmes at all education levels, including training in the regulated trades; recognition of prior learning takes place through both formal and informal assessment (see also Box 4.5). The centres work with employers to identify training needs and offer career guidance (Musset and Castañeda, 2013).

An emphasis on competence-based approaches is also important

Competence-based approaches, as discussed in Chapter 4, have a particular role in meeting the needs of adults with work experience. Recognition of prior learning encourages a return to education through the certification of relevant skills, and associated course exemptions. It is therefore important that training

providers should offer recognition of prior learning as part of the range of services offered to adults. Professional examinations also play an important role, partly because they provide a means of recognising prior learning, but also because their preparatory course requirements are usually highly flexible, allowing students to prepare for the exams at their own pace, and in their own way. This is a very adult-friendly approach.

Sometimes funding reform is necessary to ensure support for part-time study

Funding arrangements may also need reform. Sometimes student finance arrangements assume that part-time students are in work and therefore require less funding support (see Box 5.3).

Box 5.3. **Reforming funding to support part-time provision for adults in the Netherlands**

In the Netherlands public institutions are, by law, obliged to provide only complete educational programmes, so they cannot give credit for individual modules that form the elements of part-time provision. The number of part-time students in public education is modest and has been decreasing, dropping from around 20% of the total student population in professional programmes in 2005 to less than 15% in 2011. Many adults who can afford the fees (or have their fees paid for them) therefore tend to prefer the private sector where courses are modular and the pace of study is more flexible.

As a result a two-tier market in provision has emerged. Tuition fees in public institutions are subsidised and were set at a maximum of around EUR 1 800 per year for 2013/2014. In the unsubsidised private sector, tuition fees are often two to three times higher for comparable programmes. This two-tier market has problems in terms of both equity (between the subsidised and unsubsidised students) and efficiency (with stronger incentives to participate for subsidised students, potentially distorting the mix of provision). A particular gap in provision may emerge among adults keen to participate and able to benefit, but needing part-time provision.

Recognising these challenges, the government has proposed publicly funded loans for adults wishing to return to education and a system allowing some target groups to spend a voucher on selected post-secondary vocational programmes, including part-time provision in the private sector. A simulation study indicates that vouchers would contribute to a 6-11% increase in adult education participation. The implementation and the content of the voucher system has not yet been agreed.

Source: Fazekas, M. and I. Litjens (2014), *A Skills beyond School Review of the Netherlands*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris.

The transition from professional training into academic and higher education

While many graduates from professional programmes seek entry to academic programmes, they often report difficulties in using their professional qualifications to obtain course exemptions. This section argues that systematic measures are necessary to support these transitions, by making course content more transparent, co-ordinating articulation agreements across institutions, and ensuring that the learning outcomes from professional education and training are as transparent as possible.

Issues and challenges: Obstacles to transition

There is inadequate recognition of professional education and training

Graduates from post-secondary professional training often wish to progress into linked higher education programmes. When they do so the learning outcomes from their professional qualification should ideally be recognised through access and course exemptions – for example, when foundation or associate degree graduates enter directly into the second or third year of a bachelor programme. But obstacles are commonly reported. Often the problem is a lack of transparency in terms of how different programmes relate to one another, but it may also reflect inadequate incentives for higher level institutions to offer course exemptions. Fragmentation of governance arrangements, as discussed in Chapter 2, is also a factor, with different arms of government involved, managing different educational sectors and relatively independent post-secondary institutions. The effect can be multiple inefficiencies: for the students because they have to repeat course material, for governments that may pay for such repetition and for institutions that often have to laboriously negotiate articulation agreements on a programme by programme and institution by institution basis.

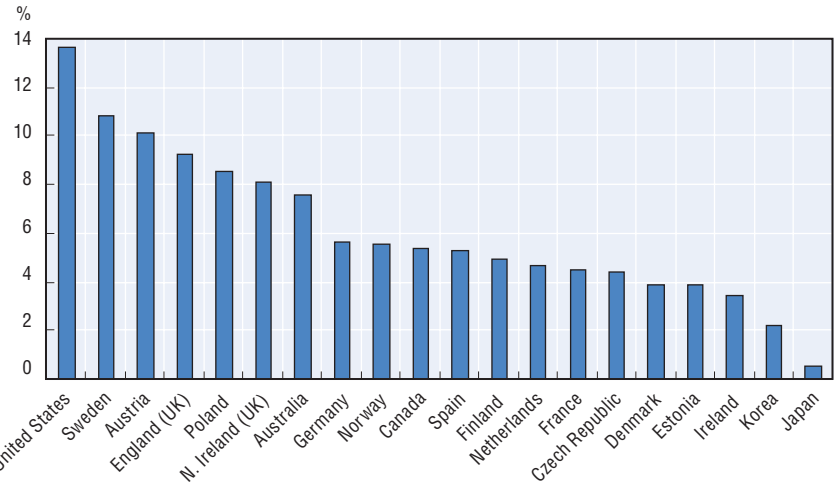
In Austria, graduates of vocational colleges can, in principle, start a bachelor's degree in a relevant study programme in the second or third semester (Prokopp and Luomi-Messerer, 2009), but such transitions depend on individual agreements between institutions and is sometimes absent. In response, many vocational colleges have developed partnerships with academic post-secondary institutions outside Austria, allowing their graduates to earn a professional bachelor's degree in as little as one additional year, a much swifter route than any available in Austria (Musset et al., 2013). In Germany, post-secondary vocational institutions (*Fachschulen*) follow standards set up by provincial authorities (*Länder*) ensuring comparability of programmes at the provincial level; but transition to academic programmes remains a challenge (see Fazekas and Field, 2013b; Hippach-Schneider et al., 2012). In Israel, graduates of the practical engineering programmes face difficulties in obtaining course exemptions in university bachelor programmes (Musset, Kuczera and Field, 2014).

Transition to higher level programmes is common in some countries

At any point in time, more than one in ten graduates of short-cycle professional programmes in Austria, Sweden and the United States are studying at the tertiary level (see Figure 5.3). But sometimes professionally trained people see little value in further academic qualifications. In the United States, for example, transfer rates to bachelor degrees for those with career-focused associate degrees are lower than for academic associate degrees. Five years after graduation, 11% of those with career-focused associate degrees were in transfer pathways to a bachelor's degree compared with 16% of those with academic associate degrees (Alfonso et al., 2004). Transfers from and to certificate programmes are also common, as 19% of those with certificates also have an associate degree, and 12% a bachelor's degree. The certificate usually precedes the degree-level qualification (Carnevale, Rose and Hanson, 2012).

Figure 5.3. **Transition into tertiary education**

Percentage of graduates of short-cycle professional programmes[1] aged 16-65 studying at tertiary level (5A or 5B)



1. For a definition and explanation see Box 1.4.

Source: Survey of Adult Skills (PIAAC) (2012).

StatLink http://dx.doi.org/10.1787/888933098611

Recommendation: Articulation frameworks supported by transparency and quality measures

Build articulation frameworks to support transition from professional programmes to academic tertiary education. Underpin those frameworks with measures to ensure transparency and quality in the learning outcomes from professional education and training.

Explanation and country approaches: Transparency, co-ordination and quality assurance

OECD countries employ a range of policies to facilitate transitions

In response to articulation barriers, countries are pursuing three main types of policy: first, measures to ensure that graduates of professional programmes have, and can be seen to have, the relevant skills necessary to enter higher level programmes; second, measures to improve transparency in course content so that overlaps can be rapidly identified and addressed through course exemptions; third, co-ordination mechanisms to simplify and facilitate articulation.

Receiving institutions need to have strong assurances of learning outcomes

Transparency in learning outcomes is always difficult to realise, especially where post-secondary institutions have the freedom to design their own programmes. From the point of view of the institution agreeing access, or negotiating study exemptions, there is a need to be convinced not only that course material has been covered, but also that it has been adequately mastered. This means clarity about course content, and credible assessment procedures, supported by evidence that prospective students have the capacity to learn in an academic environment, including high level basic skills. Often this means that articulation is realised through local bilateral arrangements, where there is mutual familiarity with course contents and trust in assessment standards, reinforced through practical experience with the graduates of particular programmes.

Clear identification of the contents of courses should help articulation

As discussed in Chapter 4, local flexibility in course curricula may help to facilitate local articulation. But this leaves the challenge of rolling out a more general approach to articulation, that would support the needs of someone who wishes to move to another part of the country. One way of tackling this challenge is by systematically numbering different course modules, to ensure comparability (see Box 5.4).

Systematic articulation frameworks can help with credit transfer

Articulation frameworks are arrangements that facilitate transitions between individual institutions and programmes. They may include common core curricula – for example the mathematics component of a programme for electricians, guidance for students who envisage transferring their credits, incentives for institutions to establish articulation agreements, and data collection to monitor credit transfers. They can be codified in legislation or negotiated through agreements between institutions (Smith, 2010). Effective governance arrangements, as discussed in Chapter 2, are a precondition

Box 5.4. **Course numbering in Florida, the United States**

Florida's articulation framework aims to make professional programmes (known as career and technical education, or CTE programmes, in the United States) comparable across institutions and create pathways across degrees and levels. Programme comparability is achieved through identification of course content within the State Course Numbering System. Courses that have the same content and are taught by teachers with comparable credentials receive the same number and are considered equivalent. Institutions therefore award the same amount of credit for equivalent courses, regardless of the provider. All public institutions are required to comply with state-defined programme lengths and standards, reinforcing comparability. The Numbering System covers all public institutions but only a few private providers – so some obstacles remain in transitions between the public and private sector.

Articulation works well if there are mechanisms to ensure that students meet the requirements of the receiving institution. To this end the state defines core general knowledge and skills (equivalent to 36 hours of general education) that every student should acquire before transferring to a bachelor's programme and these can be linked to specific courses thanks to the numbering system. For example, an Associate in Science degree usually contains between 15 and 24 credit hours of transferable general education. In principle the Common Numbering System also facilitates recognition of industry certifications obtained outside the formal education and training system, but in practice this pathway has been little used.

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202153-en*.

of articulation frameworks. Some kind of steering or co-ordination body is necessary to negotiate and manage the framework, and to encourage separate organisations and institutions to work together in the interests of the system as a whole, and the students who navigate through it. Some examples of co-ordination arrangements are given below:

- In **Canada,** articulation policies vary from a systematic, province-wide credit transfer process in British Columbia to credit transfer negotiated bilaterally by institutions in Ontario (Junor and Usher, 2008).
- In **France**, it is possible for *institut universitaire de technologie* (IUT) students after the first two years of study to be admitted by the *grandes écoles*, whose masters-level graduates may, in turn, pursue doctoral programmes in universities (EURASHE, 2011; Dunkel and Le Mouillour, 2009).
- In **Norway**, where credit recognition between institutions has been mandatory since 1981, between 10% and 20% of students change institutions during the

course of their studies, mostly from universities to university colleges during the first three years, while the flows reverse afterwards (OECD, 2008).

- In the **United Kingdom**, legislation allows two-year foundation degree students to progress to an honours degree (normally three years full-time) through one additional year full-time, or two years part-time. Fifty nine percent of full-time and 42% of part-time students pursuing a foundation degree in 2007-08 went on to study for an honours degree in 2008-09. Most students who continued their studies did so at the same institution (CEDEFOP, 2009).

In the absence of co-ordination, institutions rely on bilateral course-to-course, or institution-to-institution transfer arrangements (Junor and Usher, 2008). As an indication of the administrative load involved, in Washington state (in the United States) alone there are approximately 6 600 registered articulation agreements (WTECB, 2013).

Career guidance

Issues and challenges: Guidance needs to address diverse post-secondary options

Career guidance has often been neglected

Growing and sometimes fragmenting post-secondary opportunities mean more options, and therefore harder choices. Helping young people to make these decisions is the task of career guidance. *Learning for Jobs* (OECD, 2010) set out the issues at upper secondary level: guidance services in some countries are fragmented and under-resourced; some guidance services are dominated by a counselling approach, with inadequate knowledge of and attention to labour market opportunities; they may also have an academic bias, especially where they are delivered by academically trained teachers. The move in a number of countries towards stronger professionalisation of career guidance (CEDEFOP, 2009) needs to be supported and extended to all countries (see Box 5.5).

The diversity of post-secondary options, including university options, add to the challenge

There are some added issues at post-secondary level. Pre-entry guidance may be delivered by a variety of agencies, including not only including public employment services and stand-alone careers services but also trade unions, employers, voluntary and private sector organisations, each with their own interests and priorities. This means that the careers information available may be unduly narrow. For example, evidence showed that efforts in the dual system countries to open access to higher education to vocational graduates were relatively unsuccessful because some students, in particular apprentices, are unaware of these possibilities (Culpepper, 2007). See Musset et al. (2013) for an analysis of these issues in Austria.

Box 5.5. **Career guidance and advisers in Scotland**

Scotland has a well-developed and comprehensive system of career guidance, offered in various institutions such as schools, colleges, local authorities and JobCentres. Co-ordination of services can be a challenge in a system involving many providers, but Skills Development Scotland acts as the strategic leader, collaborating closely with schools, colleges, local authorities and other bodies and organisations such as employer representatives. Multiple institutions involved in career guidance and different channels of provision allow the system to reach out to different groups, including young people seeking entry to further and higher education, and unemployed persons.

Contrary to many other OECD countries where there is no specific profession of career advisers (career guidance often being provided by school teachers and psychologists), Scotland recognises that "career guidance is a distinct, defined and specialist profession which demands a unique set of core skills and expects all career guidance practitioners to be professionally qualified". This approach to career management involves helping individuals to understand their strengths, the objectives that they wish to set for themselves and the networks and resources that will help them reach these objectives. The aim is therefore to help individuals to plan their career independently by equipping them with relevant tools and knowledge. Career services also include support from Career Coaches who engage with young people through talks, group sessions and individual coaching. Young people who need support to make a successful transition into employment receive one-to-one sessions, as does any young person who needs additional advice.

Source: Kuczera, M. (2013), *A Skills beyond School Commentary on Scotland*, *www.oecd.org/edu/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnScotland.pdf*.

In terms of on-course guidance, evidence from different countries shows that attention to career guidance is less strong in vocational institutions than in universities. Whereas almost all universities have dedicated career services units, such services in the professional and vocational sector are more likely to be provided as part of general student services such as student counselling (Watts, 2010). While a dedicated career service unit does not automatically yield better career guidance, it does at least raise its profile. It is possible that attention to career pathways in professional courses is embedded within the courses themselves, in arrangements for work-experience, and in the flow of advice from industry practitioners involved in the vocational teaching. Three key tests of such provision are whether it:

- introduces students to the full range of opportunities within the sector;
- covers career pathways within the sector rather than being confined to entry-level jobs;

- covers the needs of students who might be interested in changing career direction (including making them aware of other occupational sectors to which some of the competences they have acquired might be transferable).

It is also important to identify whether such provision is subject to systematic institutional policy and quality standards, or if this is left to individual course teams to determine (Watts, 2010).

Recommendation: Stronger career guidance and information before and during professional programmes

Underpin pathways of progression with high-quality career guidance and information before entering and during professional programmes.

Explanation and country approaches: Systemic approaches backed by labour market information

A systemic approach is needed

Good career guidance based on labour market outcomes can help align the mix of provision to the needs of employers: better overall information on labour market prospects in various professions and more weight given to it in student choice also have an impact on institutions. Indirectly, informed student choice exerts pressure on institutions to improve the quality of programmes (OECD, 2012).

Relevant labour market information needs to be made available

There are many sources of information on individual courses and occupations, but much of it is biased publicity material. In some countries, government agencies may provide objective occupational forecast information as in the case of the US Bureau of Labor Statistics, which publishes its Occupational Outlook Handbook annually (see Box 5.6). In Northern Ireland, industry factsheets provide relevant information on job prospects and relevant skills and entry requirements (Álvarez-Galván, 2014).

Other relevant data and information about the pathways from education to occupations, the extent to which training programmes lead to desired jobs, and related wage rates and unemployment risks, are critical for sound career advice. Such information may be in the form of complex data and require careful interpretation. Attention is needed to make such information in accessible and comprehensible for the purposes of career guidance.

Good career guidance can help reduce dropout

Some students become disengaged from their vocational training programme because they find they have made a wrong career choice, or because they are not receiving sufficient support (OECD, 2012). Career guidance, combined with other student support services, can help tackle dropout. In

Box 5.6. **Career information in the United States**

The *Occupational Outlook Handbook* (OOH), published by the Department of Labor, provides information on education and training requirements, growth projections, working conditions, and earnings for the over 250 occupations covering nine out of ten jobs in the US economy. The Career Guide to Industries (CGI) complements the OOH by providing information on earnings, expected job prospects, working conditions, and education and training requirements for 40 industries that generate two out of every three jobs in the US economy. Career Voyages, a joint project of the Departments of Education and Labor, aims to provide information on in-demand occupations and related education and training requirements. It provides resources and career decision-making guides for students, parents, career changers and career advisers, and gives lists of apprenticeships and tertiary programmes linked to jobs in high growth industries.

Source: Kuczera, M. and S. Field (2013), *A Skills beyond School Review of the United States*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264202153-en*.

Denmark, guidance is a key tool used to tackle high dropout rates in both upper secondary and post-secondary education. Education institutions must, by law, refer students that wish to drop out or change programmes to regional guidance centres. Municipalities are legally obliged to make contact with, and offer guidance to, young people that are not working and not enrolled in education at least twice a year up to the age of 19; some municipalities extend the system beyond this (Field et al., 2012).

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Chapter 6

Key characteristics of effective vocational systems

Many of the findings of this report resonate with those from the earlier OECD study of vocational education and training at upper secondary level, Learning for Jobs *(OECD, 2010). With that in mind, this chapter aims to integrate the findings of both studies and propose a set of key desirable characteristics of effective vocational systems.*

Set out below are a set of key characteristics of strong vocational systems. These characteristics are based on the policy recommendations for vocational education and training advanced in the OECD reports on *Learning for Jobs* and this report on *Skills beyond School*.

Deciding on provision and meeting needs: How the mix and content of vocational programmes are determined

Mechanisms to ensure that the mix of vocational provision corresponds to the needs of the labour market

Sometimes the availability of vocational programmes is driven by student demand and the capacity of training institutions, rather than by industry needs. This can be balanced by constraints on training provision where there is little demand for the skills, by an emphasis on work-based learning as a means of signalling industry needs, and by well-grounded career guidance to inform student demand.

Adequate core academic skills, particularly literacy and numeracy built into vocational programmes

Basic skills are needed both for jobs and to support further learning. Vocational programmes therefore need to assess basic skills on entry, address weaknesses, and explore ways to integrate basic skills into vocational courses.

A range of programmes that offer opportunities for all, and minimise dropout

Some types of practical and work-based vocational programmes are very effective at engaging young people who have previously become disenchanted by academic education.

Flexible modes of study suitable to adults with working and home commitments

Adults, often with home and work responsibilities, tend to prefer flexible and part-time study options and often wish to take advantage of distance learning. Programmes and policies should therefore adapt to their needs.

Higher-level vocational qualifications, and avenues of progression from initial vocational programmes to both higher-level vocational and academic programmes

Higher-level vocational qualifications for graduates of upper secondary vocational programmes, offering management and entrepreneurial skills, and skills in managing trainees, alongside a deepening of technical competences, play a key role in enhancing the attractiveness of the upper secondary vocational track. Pathways to more academic qualifications are also important.

Delivering quality: How vocational skills are imparted to learners

High-quality apprenticeship systems, covering a wide range of professional domains and including higher-level apprenticeships

Apprenticeship is an outstandingly successful model of work-based learning, and a way to develop skills and transition young people into work. It needs to be actively supported in partnership with industry, backed by quality assurance, and developed in novel territory such as in public administration.

Work-based learning systematically integrated into all vocational programmes

In apprenticeships, but also more generally, work-based learning has such profound benefits, both as a learning environment and as a means of fostering partnership with employers, that it should be integrated into all vocational programmes and form a condition of public funding. It should be systematic, quality-assured, assessed and credit-bearing.

A vocational teaching workforce that offers a balance of teaching skills and up-to-date industry knowledge and experience

This implies measures to encourage industry practitioners to teach part-time or to enter vocational teaching in mid-career.

Using learning outcomes: How skills are assessed, certified and exploited

Qualifications developed with labour market actors

This means that curricula, programmes and assessments are organised so as to meet the needs of industry, both in content and in modes of study.

Qualifications reflecting labour market needs that are nationally consistent but flexible enough to allow for locally negotiated element

Nationally consistent qualifications support labour market mobility, but a locally negotiated proportion of the curriculum allows provision to respond to local employer needs.

Qualifications systems and frameworks that keep qualification numbers manageable

The tendency of qualifications to proliferate, allowing confusion to dilute their signalling value, needs to be combatted by active management of the qualifications system, involving employers and trade unions.

High-quality assessments of vocational skills built into qualifications

Good assessment of complex occupational skillsets is hard, but it is an essential element of strong qualifications generally, and vital for qualifications that are competence-based.

Effective competence-based approaches, including both professional examinations and recognition of prior learning

Professional examinations are a little-recognised part of countries' skill systems and often play an important role outside the formal education system. Recognition of prior learning requires strong incentives for the different actors to make it work.

Supporting conditions: The policies, practices and institutions that underpin vocational education and training

Vocational programmes developed in partnership and involving government, employers and trade unions

Typically, this will require a steering body involving the different stakeholders to co-ordinate provision, engage and involve all the stakeholders, including social partners, and address issues of coherence and co-ordination.

Effective, accessible, independent, proactive career guidance, backed by solid career information

Career guidance is still too often a weak by-product of school general counselling. The guidance profession needs to be upgraded and supported with good labour market information.

Strong data on vocational programmes, including information on vocational programmes in international categorisations and labour market outcomes

ISCED 2011 should improve the identification of vocational programmes, especially at the post-secondary level, but it needs to be well-implemented. Many countries need better information on labour market outcomes.

Consistent funding arrangements so that choices are not distorted by the availability of funds

While upper secondary vocational education and training rarely involves fees in OECD countries, post-secondary provision is subject to a range of fee regimes, not always consistent with those for other forms of tertiary education.

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Contents

Further reading

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

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