Investigation into post-16 occupational standards in international technical education systems

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The Institute for Employment Studies

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Executive Summary

The aim of this study was to explore examples of standards used internationally in order to inform and support the work of the panels of professionals that will take forward the development of the technical routes being introduced in England. It was conducted through selective, rapid desk research combining a selective literature review and direct interrogation of vocational education and training (VET) websites in a small selection of countries. This approach lends itself to a descriptive account rather than evaluative assessment of international practice.

Five European and English speaking nations were prioritised. The evidence indicated that the VET system in each reflected economic and social traditions. The point at which VET becomes available varies although is typically within upper secondary and the 16-19 phase. Most, but not all, countries provide college and apprenticeship options for VET study although these may be taken sequentially rather than existing as parallel options. There is, in some cases, preparatory VET provision in the lower secondary phase, and a selective process to allocate students to VET or academic studies. Typically, VET graduates enter the labour market although in some countries there is an emphasis on ensuring access to HE level study.

Most countries in Europe, and those non-European countries included in this study, used educational rather than occupational standards. Educational perspectives are concerned with what an individual can do following a period of education or training. Competence may be understood as skills gained, or more fully as the full range of abilities and attributes that it should be possible to demonstrate following training. Professional/ occupational perspectives consider what it is that is necessary 'to act effectively' in professions or occupations, which may be graded concepts, such as minimum requirements, or requirements to be independent or advanced in work practice. This can lead to narrow or task-based definitions or to broad, professional ones. The perspective taken has implications for the length of standards with educational standards being typically lengthy documents that provide the building blocks to occupational competency.

The development of standards is characterised by the high degree of involvement by industry and other stakeholders. They are involved in the identification and specification of the need for new and reviewed standards, and may be supported by national VET bodies or research centres that monitor how standards perform in the labour market. The roles and governance structures beyond this are quite varied. The work starts with occupational specification and moves through into training specifications.

The content and structure of standards varies according to their type, and, while at the heart of developments, specific occupational profiles may not be published as part of educational standards. Most countries use a common format to describe training. There is a growing emphasis on transversal competence (broadly equivalent to key skills) which

provides a foundation for professional conduct as well as specialism. It is also common for descriptions to be unitised or modularised. Both of these assist equivalence across sectors and the movement of trainees between qualifications as necessary.

Further work to support the panels could include attempts to access the occupational profiles that underpin educational standards via contact with VET specialists and bodies in selected countries. In addition, as the work of panels develops, the evidence suggests that a review of transversal competencies (key skills for professional practice) would be valuable.

1 Introduction

This chapter provides a brief account of three key, recent policies affecting further education (FE). Its starting point is the Wolf Review in 2011 and it tracks developments through the Richard and subsequent, Sainsbury Review which has led to the planned introduction of new technical routes in the 16-19 phase of education.

1.1 Context for the study

The provision of vocational education in England, in full- and part-time modes and vocational training, via apprenticeships, in the 16-19 years phase has received considerable policy interest. This has led to reforms that have aimed to increase quality and parity of esteem with academic routes. At the time this study was commissioned, a further stage in this review process had been published in the Post-16 Skills Plan (HM Government, 2016).

The Post-16 Skills Plan builds on a series of reviews to reform and strengthen the provision of technical education in England. The key aim is to ensure technical education provides the skills and attributes that employers require – thereby making it a more valuable route for young people (and adults) to pursue. The work to date has included the Wolf Review (2011) which recommended the removal of low-quality vocational qualifications from the education and training system, followed by the Richard Review (2012) which identified the means through which apprenticeships are being reformed. At the heart of the Richard Review was putting employers 'in the driving seat' – ensuring that their views of the core and technical skills, as well as attributes, required to perform occupations, were at the heart of developments. The Richard Review led policymakers to introduce the Apprenticeship Trailblazers which have developed new employer-defined training Standards, encompassing technical and underpinning skills and behaviours, and which involve synoptic, end-point assessment to ensure apprentices can demonstrate that they have acquired the full range of skills, competence and knowledge, and are able to integrate their learning and apply this in different contexts.

The Sainsbury Review (2016), to which the Post-16 Skills Plan is the policy response, continues this programme of reform, and focuses on how full-time technical and vocational education routes can be aligned with the new apprenticeship system, as well as with the established academic route from Level 3[1] and beyond, with a key focus on the attainment of Level 4/5 capabilities, and continues the work aimed at ensuring strong employer engagement. The Sainsbury Review has particular concerns for quality, for

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[1] Level 3 is the equivalent of 'A' Level academic qualifications, with Level 4+ indicating Higher Education, though sub Bachelors Degree, levels of study.

parity of esteem and for enabling movement between vocational and academic modes. This review has led to the development of proposals to reform the system, contained within the Post-16 Skills Plan, by creating 15 technical routes, as well as the means to move between vocational and academic pathways.

The new technical routes will continue the work of Wolf by rationalising qualifications in order that quality can be better managed. A new body in the technical education system, the Institute of Apprenticeships, will be at the heart of these developments, again in order to ensure there is parity and integration between mainly employment-based (i.e. apprenticeships) and mainly college-led training routes (i.e. the technical routes).

1.2 About the research

This research was commissioned to support the development of the occupational specification within the new technical routes by exploring evidence on how such routes are specified and developed in other countries.

1.2.1 Research aims and objectives

The aim of this project was to gather international evidence (mainly from countries with high performing technical education systems) on what constitutes a 'good' occupational standard (i.e. the occupational specification that underpins the development of a training and assessment programme) and best practice in developing these.

Key issues for the study to report on were:

- **Purpose of standards**: e.g. to enable design of qualification content, to help young people understand what they can achieve at the end of their learning, policy objectives for standards

- **Process**: Governance structures, end-to-end processes including reviewing and renewal for developing and delivering a standard

- **Facilitation and support**: who is involved in standards development, what support systems exist e.g. is there an equivalent role to relationship managers

- **Content and structure**: topics covered, level of detail about skills development and occupational competency, number and range per occupation/apprenticeship, alignment between standards

- **Implementation and effectiveness**: Common and specific challenges associated with the selected standards and countries.

1.2.2 Research approach

A small-scale, exploratory study was completed using a rapid, desk review of evidence; rapid since it was completed in around 2 months from the point of being commissioned (in mid-December 2016). The approach involved agreement with the Department of a set of countries for which information was gathered and collated. Two approaches were used to compile this evidence base:

- Direct interrogation of the countries' VET website(s) to gather examples of standards as well as any guidance available to stakeholders to support the development of standards.

- A selective literature review, to generate wider insights as well as expert analyses on how each of the countries' VET systems and processes to develop Standards worked in practice. This prioritised sources that had synthesised the literature and/or had undertaken analysis of international standards and VET systems. There are a number of such authorative, large-scale studies, which typically involve cross-national comparisons, and in some cases, multi-year tracking of developments, including works published by Cedefop (the European Centre for the Development of Vocational Training), the OECD, and the Nuffield Foundation.

Country selection

It was desirable to mainly capture information on countries with high performing VET systems, i.e. those with a known tradition of enabling and facilitating access to high quality careers following training. Other considerations in selection were pragmatic: it was agreed that the review would focus mainly on English speaking countries (since translation of documents and materials would be impractical in the limited timeframe of the study) although Germany would be included since its VET system is generally held in high regard. This meant that translation resources could be used in a highly focused way. Where further non-English speaking countries were included, the study would rely on the selective evidence review rather than materials gleaned from interrogation of VET websites.

Using these criteria, and through consultation within the Department, as well as with VET experts at the Institute for Employment Studies, the following countries were prioritised: Australia, Canada, Denmark, Germany, and Netherlands. Although not prioritised, some information was also gathered in respect of Finland, France, Norway and Singapore.

1.3 Report structure

This report contains findings synthesised from the review of international evidence on standards in VET. The selective approach to gathering this evidence lends itself to a

descriptive account of policy and practice since a fully evaluative assessment could only be arrived at through a more systematic research methodology.

The report is structured such that Chapter 2 provides an overview of the new technical education system proposed for England, and then similar information on the VET systems in the 5 priority countries for the study. Chapter 3 explores the different purposes and variations in the use of standards internationally.

The key issues on which the study was required to provide information are covered in Chapter 4, which explores VET governance structures, including stakeholder engagement and information on development and review processes; the content and structure of standards; information on facilitation and support to these developments; and associated opportunities and challenges with the approaches identified within the selected evidence.

The report concludes with a brief discussion of key findings and their implications in Chapter 5.

2 Education and training systems

This chapter provides some context to the study of processes and content of standards, by summarising key information about the VET systems and emphases in each of the priority case study countries.

2.1 Key points

- VET within education and training systems reflects cultural, educational and economic traditions within each country

- A key distinction between countries is the point at which VET becomes available to individuals, i.e. in the post-16 phrase or earlier parts of the secondary education phase

- A further point is whether students are assessed for entry into academic or VET routes, or whether this choice is made by individuals.

2.2 The new technical education for England

The Post-16 Skills Plan outlines a new system of technical education for England which will create strong links between technical education in full- or part-time mode, mainly through college study and training (apprenticeships) as well as the means to transfer between academic and vocational routes to achieve career entry; it thus aims for parity of esteem between these two paths. A key tenet is to create a system of technical education that meets the needs of employers as well as young people, *'Employers, large and small, will sit at the heart of a dynamic skills system to ensure the day-to-day training and education that individuals receive genuinely meet the needs of industry'*.

The central aim of the new routes is to prepare people for skilled employment that requires technical knowledge and practical skills. Key elements of the reform include:

- A slimmed down set of approved qualifications underpinned by employer-defined standards; there will be one approved technical level qualification for each occupation or cluster of occupations.

- The introduction of a common framework of 15 routes across all technical education, including college-based and employment-based learning, with routes extending to the highest skill levels (including Levels 4 and 5).

- Investment in Institutes of Technology to provide technical education in STEM subjects at Levels 3, 4 and 5. It is anticipated that these will directly involve employers.

- The new employer-led Institute for Apprenticeships will regulate quality across apprenticeships and expand its remit to cover the new technical education system.

To enable access to, and to support all students to benefit from, the new system, a transition year, which may involve a traineeship, will be introduced for those who have not achieved Level 2 by the time they leave school. For those wishing to move into academic study following technical education, or vice versa, bridging provision will be introduced to support this. Figure 1 shows how the new system will be configured.

Figure 1: The new technical education and training system for England

Figure 1: The new technical education and training system for England

Skilled employment

Higher education (undergraduate degree)

Higher education (levels 4/5 technical education)

Degree apprenticeships and higher apprenticeships

Bridging provision (where appropriate)

A levels and/or applied general qualifications**

College-based technical education including placement in industry

Employment-based technical education, e.g. apprenticeship with at least 20% college-based education

Transition year (if appropriate)

Transition year and/or traineeship (if appropriate)*

GCSEs and technical awards

GCSEs and technical awards

Academic option

Technical option

* Where a student does both, the traineeship will follow the transition year. Students doing both the transition year and a traineeship may progress directly to employment.

** Some students will move directly from A levels and/or applied general qualifications to degree and higher apprenticeships.

Source: HM Government, 2016

2.3 The education and training systems in the selected countries

The systems within the international examples selected for this study tend to coalesce around the provision of **iVET** (initial vocational education and training) taken within pre-16 education as well as the 16-19 (pre HE) phase; and, **cVET** (continuing VET) targeted at adult and professional education. This can lead to 2 systems that operate in parallel, often with some commonality, whereas in England, the new system intends to allow adults to access training and development at the level commensurate with their training or technical educational needs.

Not all of the selected countries operate VET as a mainly college-based study route; for example Canada, uses apprenticeships as the vehicle for iVET and does not have a parallel, college-based VET provision. A brief commentary for each of the 5 priority countries is provided below, along with an illustration of each system where available.

Australia

Education is compulsory in Australia between the ages of 6 and 16 years. The post-16 phase includes university and VET options. The VET system offers a variety of qualifications, including certificates, diplomas, advanced diplomas, vocational graduate certificates and vocational graduate diplomas, delivered as part of 60 training packages. VET is available to anyone aged 16 or over in most Australian states and approximately half of all school leavers undertake vocational training within a year or two of leaving school. In addition, over half of all students undertaking VET are over the age of 25; this may explain why the majority of VET students study part-time in parallel with full-time employment (NCVER, 2007).

The Australian Government sees vocational education as essential to the country's economic growth and productivity through improving employment outcomes for those undertaking training. Australia recognises the need for a VET system closely linked to industry and labour force needs. The Australian Government has, in the last 5 years, renewed or created a number of national policies in order to strengthen the quality of VET education, delivery and regulation. These include; Standards for Registered Training Organisations (RTOs) and Standards for VET Regulators (in 2015) and Standards for VET Accredited Courses in 2012. In addition to cementing educational standards, occupational standards, in the form of Training Packages, form the core for VET in Australia.

Canada

VET in Canada centres primarily on the provision of apprenticeships and is regulated by the 13 provinces and territories to ensure that each can gear apprenticeships to its

unique labour market needs and conditions. Each province/territory has an Apprenticeship Authority which administers training in the skilled trades, is the point of registration for students and employers and is the awarding body for the final Certificate of Qualification. Around 40% of the post 16 cohort follows the VET route (Álvarez-Galván et al, 2015).

Apprenticeships are taken in skilled trades such as construction, manufacturing, transportation, and service sectors. Trades are classified as either 'compulsory' which indicates registration as an apprentice, journeyperson candidate or certification as a journeyperson is mandatory, i.e. a regulated occupation; or, 'voluntary' which means that certification and college membership are not a legal requirement to practice. The 'Red Seal' is Canadian industry's standard of excellence. A Red Seal designation means an industry has determined a common set of standards and competencies for a trade and that this has been accepted by at least 2 provinces and/or territories.

Denmark

There are 2 parallel elements to the Danish education and training system covering mainstream education and training, which includes initial VET (iVET) and adult education and continuing training which comprises 'second chance' provision, supplementary provision and continuing VET (cVET). Within the mainstream system, general education operates alongside equivalent iVET studies. Programmes typically last 3 years and result in 1 of 4 qualifications. iVET in the Danish upper secondary system starts with a foundation course, which is generally college-based (see Figure 2). The evidence suggests that around 48% of the cohort follow a vocational upper secondary programme although these figures include adult trainees. When only younger candidates are considered, around 20% enter upper secondary/pre-tertiary VET (Cedefop Refernet Denmark: VET in Europe – Country report, 2012).

Following foundation studies, students are expected to have a training contract with an enterprise (the literature notes that there are some exceptions that mean students can follow college-based, practical education instead although it does not specify the exceptions). In Denmark, iVET is intended to provide access to the labour market as a skilled worker or to higher level courses at vocational colleges, academies or university colleges. Since 2008, iVET has consisted of 12 broad, foundation courses each providing access to several more specialised main programmes which in turn lead to main programmes and steps (known as trin, in effect modularised accreditation). These foundation courses cover the following areas:

1. Automobile, aircraft and other transportation
2. Building and construction
3. Construction and user service
4. Animals, plants and nature

5. Body and style
6. Human food
7. Media production
8. Commercial
9. Production and development
10. Electricity, automation and IT
11. Health, care and pedagogy
12. Transportation and logistics

Figure 2: The Danish national education and training system

VET in Denmark's education and training system

TERTIARY LEVEL

NON-FORMAL ADULT EDUCATION

| Danish for foreigners | In-service training | Liberal adult education | Non-formal education at specialized schools |

EQF 8 Doctoral programmes ISCED 6

EQF 7 Master programmes ISCED 5A

EQF 7 Master programmes ISCED 5A

EQF 6 Bachelor programmes ISCED 5A

EQF 6 Professional bachelor programmes, some WBL ISCED 5A

EQF 6 Diploma programmes, some WBL ISCED 5B

EQF 5 Academy professions programmes (KVU), some WBL ISCED 5B

EQF 5 Further adult education programmes, some WBL ISCED 4B

19+ **12+**

SECONDARY LEVEL

20 **13**

19 **12**

18 **11**

17 **10**

EQF 4 General programmes, 3 years ISCED 3A

EQF 4-5 Apprenticeships (EUX), WBL 50%, 4 years ISCED 3B

EQF 3-5 VET programmes (EUD and others), WBL 67%, 4 years ISCED 3C

EQF 3-5 Adult VET (GVU) programmes (•) ISCED 3C

EQF 2-5 CVET (AMU) for new skills and upgrade (•) ISCED 3C

EQF 4 Higher pre-paratory single subject courses (•) ISCED 3A

16 **9 (*)**

Optional year, 10th grade

EQF 2 Lower secondary programmes ISCED 2A

EQF 2-3 Basic VET (EGU) programmes, WBL at least 75% ISCED 2B

EQF 2 General adult education (AVU) ISCED 2A

EQF 2 Preparatory adult education (FVU) ISCED 1

15 **8**

14 **7**

AGE | YEARS in E&T

Legend:
- General education programmes
- VET programmes
- Programmes combining VET and general education
- Adult education programmes, often part-time or distance education
- Officially recognised vocational qualifications
- Qualifications allowing access to the next educational level
- ◆ Giving access to tertiary education
- ◆ Giving access to tertiary education in the previously acquired field
- → Progression routes
- ⇢ Access to relevant field of study
- ▲ Entry through validation of adults' prior learning (formal/informal/non-formal)
- End of compulsory education
- (•) Entrance from all programmes to acquire the missing competences, duration varies
- WBL Work-based learning, either at the workplace or a VET institution

NB: ISCED 1997 was used on the chart. Conversion to ISCED 2011 is ongoing.
Source: Cedefop and ReferNet Denmark.

NB: International Standard Classification of Education (ISCED) 2011

Source: Cedefop ReferNet Denmark 2014

Germany

Germany is known for its well established, high quality VET system. This may be offered full-time in schools, although the country is most well-known for its 'dual system' of training; that is, training that is conducted partly within the employing enterprise and partly within vocational schools (i.e. apprenticeship). Typically, young people enter VET post-16 having completed the compulsory phase of general education. Vocational schools offer basic and specialised VET which aims to extend that general education. This leads to either a qualification that enables entry to HE or a vocational qualification allowing entry to skilled work.

As would be expected, apprentices spend most of their time with their employer, with 1 to 2 days spent at a vocational school each week. Studies in the school setting cover theoretical and practical knowledge related to their occupation, as well as some general subjects: for example, economic and social studies and foreign languages. Training on the job, within the host company, is described as 'process-oriented' and based on in-company requirements.

In parallel to the dual system, a variety of school-based programmes are offered. These include full-time programmes at vocational schools which aim to prepare individuals for work in a range of occupational areas. Some are modularised, which can allow for transfer to the dual system (apprenticeship) following part-completion of the course. Other forms of school-based programme include general upper secondary with vocationally orientated education and support for entrance to HE. For students who are not yet ready for VET study, preparatory options exist in the form of a pre-vocational training year and a basic vocational training year.

Based on the available data, broadly half the cohort chooses to undertake VET, although there is some variance, with the general educational route proving a stronger draw in more recent years (Cedefop, 2014: Germany VET in Europe – Country report). The German system is strongly characterised by cooperation between the federal government (responsible for the in-company training), the state governments (responsible for the part-time vocational schooling), trade unions, and employers.

Netherlands

The Netherlands operates the system that, along with Germany, is the most similar to that being introduced in England, in that a technical, vocational college-based route is available alongside apprenticeships (Figure 3). These lead to broadly similar qualifications and are seen as parallel pathways. However, a high degree of selection operates within earlier phases of education which determines whether students follow an academic or one of the iVET (college-based or apprenticeship) routes.

A pre-vocational track in lower secondary enables access to upper secondary VET at the age of 16+. These upper secondary programmes consist of 2 to 4 year programmes in 1 of 4 subject areas, at 1 of 4 levels (known as MBOs; middelbaar beroepsonderwijs). MBO 1 qualifications are known as entry level VET, MBO 2 provides basic vocational education, while MBO 3 is entitled professional education and MBO is aligned with middle management and specialist training. The four broad subjects that students can take are: green/agriculture, technology and engineering, economics/services, and health/welfare. Each sector includes various branches of industry/business.

Each MBO typically enables access to the labour market, although some VET graduates do continue into HE studies. While pathways exist to allow movement between the academic and vocational tracks, in practice few students make use of this, and most stay in the track determined for them during the primary/early secondary education phase.

The data suggest that under the Dutch system around 75% of the cohort now take VET through the mainly college-based route, while around 25% train for occupations via apprenticeships. The trend towards college-based routes reflects preferences amongst more recent cohorts (Cedefop 2016, Vocational education and training in the Netherlands, Short description).

Figure 3: The education and training system in the Netherlands

VET in the Dutch education and training system
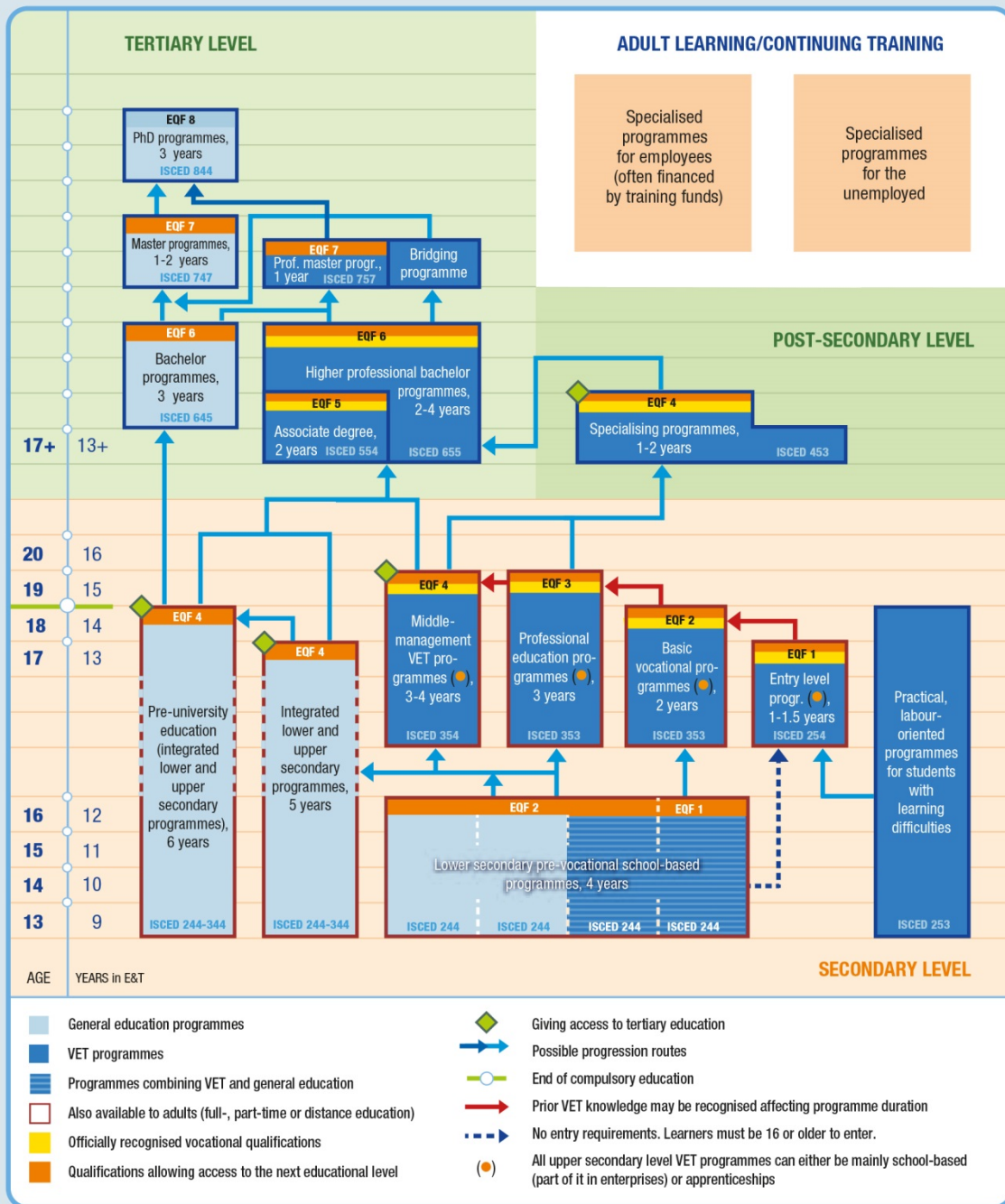
Source: Refernet country report, 2014

3 Purposes of and variations in use of standards

The review highlighted that different countries use different types of standards, and this has implications for length and content. This chapter considers the main types of standards described within the literature, and the types of standard evident in each of the selected countries.

3.1 Key points

- Standards available internationally can be broadly categorised into 2 types: educational or occupational standards. Educational standards can be understood to describe the skills, knowledge and abilities gained from training; while occupational standards consider the nature of competent performance, and/or what knowledge, skills and behaviours are needed in order to act effectively and competently.

- A key implication of these types is for the format and length of documents. Educational standards describe training – often in the form of building blocks – and can be of some considerable length. Occupational standards describe the tasks completed by a competent professional; while typically shorter, a separate training document is required.

- Cross-national reviews of standards available in the literature indicate that educational standards are most common.

3.2 Main types of standard

The literature review revealed significant interest in the development of notions of competence internationally, as well as in how these notions are translated in respect of the specification of the links between training and employment. These analyses indicate two main perspectives: those that are primarily educational and those that are primarily professional/occupational (Lester and Religa, 2016b, p. 5).

- Educational perspectives are concerned with what an individual can do following a period of education or training. Competence may be understood as skills gained, or more fully as the full range of abilities and attributes that it should be possible to demonstrate following training.

- Professional/occupational perspectives consider what it is that is necessary 'to act effectively' in professions or occupations, which in some cases may be graded concepts such as minimum requirements, or requirements to be independent or advanced in work practice. This can lead to narrow or task-based definitions or to broad, professional ones (Lester and Religa, 2016b, p. 5).

A further organisational perspective is detected by this study, which indicates standards specific to organisations centred on that organisation's particular set of objectives, values and contextual environment. These tend to concern generic rather than technical abilities and are rarely used in the national assessment of competence.

While competence concerns the ability to do something well or effectively (OED definition) or the application of skills and knowledge to achieve results (International Standards Organisation), the literature indicates that perspectives on competence can also concern the 'internal' or 'external'; the former centres on the skills, knowledge and ability an individual has in comparison to an outcomes-focused view of what it is that they do to produce the right result. This leads to the description of actions rather than the combination of skills, knowledge and attributes that would lead to their performance. Both approaches have benefits and drawbacks. For example, for the internal perspective, while an individual may have acquired the appropriate range of skills, knowledge and attributes, this may not necessarily indicate their ability to put them into practice; for the external perspective, task or functionally based competences are criticised for being too narrow for high level occupations, as well as requiring the separate development of training schemes (Lester and Religa, 2016b, pp. 5-6).

A final distinction highlighted by this study is between role-based or bounded-occupational models; and those which focus on a centre-outwards approach being concerned with professional, core capability. The former may be used more in regulated occupations where there is a need to closely (and narrowly) specify required activities or tasks by statute. This can lead to core standards being defined for an occupation or sector, alongside standards relating to particular specialisms within that occupation. A centre-outwards approach identifies the capability needed to be an effective professional practitioner, recognising that 'roles and functions... can vary and will evolve with careers, and as society and technology develop'. These tend to be more universal i.e. without core and specialist dimensions (Lester and Religa, 2016b, p. 7).

These different perspectives have implications for the purposes served by standards, and lead to different requirements and descriptions in their specifications. The latter is a key point in respect of this study, since it was tasked with determining what length a 'good' standard would typically be. The answer relates to the purpose of the standard. Using the 2 key dimensions of educational and occupational standards, outcomes-based, occupational and centre-outwards standards tend to be shorter since they are focused on a description of what it is to be a competent professional; however, these often require a separate training and/or assessment specification document. On the other hand, individually focused, educational standards and those that are occupationally-bounded tend to be more lengthy since they describe in some detail the content of the training or specify precisely the skills and knowledge that are necessary to demonstrate that one is competent.

3.3 Purpose and international use of standards

A Cedefop Panorama (2009) produced a classification of the purposes served by standards across European nations (Figure 4). The countries reviewed for this study are highlighted in bold in the figure.

Figure 4: Types of occupational standards (OS) in Europe

Classification of main jobs	Benchmark for assessing occupational performance	Occupational profile associated with qualification	No OS
France Greece (in preparation) Romania Slovenia Switzerland	Belgium Lithuania Malta (planned) Poland **UK**	Austria Belgium Estonia **France** Hungary Italy Latvia Luxembourg **Netherlands** Portugal Spain Switzerland Turkey (project)	Bulgaria Cyprus Czech Republic **Denmark** **Finland** **Germany** Iceland Ireland Liechtenstein **Norway** Slovakia Sweden

Source: Cedefop 2009

It establishes 3 key categories:

- First, standards that are aimed primarily at monitoring the labour market and occupational change. Qualifications may refer to these for guidance on the content needed. The benefit of the approach is comprehensiveness: all the jobs that people do are systematically identified and classified.

- The second set of standards are similar to the first in that they capture all occupations; however they focus strongly on performance requirements, so are based on a systematic work analysis and performance is measurable. These serve as a reference source for the developers of qualifications and courses.

- The third group describe the occupation to which a qualification leads, thus integrating occupational and educational dimensions with the occupational analysis providing the basis for designing education and assessment approaches. This approach is typical within regulated iVET systems.

- Where no occupational standards exist, iVET qualifications often remain competence-based but are formulated in respect of learning outcomes, rather than the job that a competent person would do.

The authors note that a key conclusion is that the simple term, 'occupational standards' covers a range of standards with differing emphases in terms of content and function and this leads to the diverse VET system seen across Europe (and elsewhere) (Cedefop, 2009).

The influence of these various uses can also be seen within the approaches to defining competence as well as in the structuring of documentation. For example, the UK adopted a 'function analysis' approach to defining competency within its NVQ system, which is underpinned by the identification and specification of NOS (National Occupational Standards).These describe requirements of the workplace and organisations, as well as training needs, in essence aiming to capture what can be considered good practice. The study notes that they are divided into units of competence, with a focus on 'the object of activity'. As such they comprise knowledge elements (what a competent individual will know and understand) and practical skills and behaviours (what a competent individual does). A key point is that they are explicit, can be observed and crucially are measurable.

In contrast, the German use of competence has a more holistic basis, combining a range of competence forms. The primary focus is on 'action competence' which is located within individuals and represents 'implicit knowledge and skills'; this implicitness means it cannot be so readily measured however; instead it locates the individual within a professional and social world. This overarching concept is broken down into 4 elements: occupational, personal; methodological; and social competence. However the model does not then break down further into learning outcomes but instead competences are formulated as learning objectives.

A final perspective is exemplified by France where competences are viewed as resources available to inform the actions of individuals. These have multiple dimensions covering cognitive, experiential, and behavioural perspectives and are demonstrated through action as an effective professional. French standards thus aim to take into account working conditions and organisational contexts (Cedefop, 2009).

4 Standards development and renewal

This chapter focuses on the key questions that this study aimed to address, specifically the processes and structures through which standards are developed and reviewed. This draws on the selective review of reviews, a set of preliminary country case studies drawn up through an analysis of relevant literature sources and on evidence available from the interrogation of the relevant national VET websites and standards.

4.1 Key points

- Governance structures vary according to the overarching system in different countries but are characterised, in most countries, by national level statutory authority, and then through a hierarchy of national and regional bodies that lead on industry engagement and consultation.

- While the literature does not provide fine-grained insight into who supports the development of standards and how they do this, it is common for the social partners to be involved (employer and employer representatives, employees/ employee representatives; training organisations amongst others). Their work may be supported by national VET bodies, or VET research institutes.

- VET bodies/research institutes may undertake monitoring to track how well standards meet labour market requirements. This may also involve identifying new occupations or occupational changes that mean that standards must be created or reviewed. It is typical for the social partners, and crucially industry stakeholders, to be engaged in the specification of occupational profiles.

- The standards captured by this study tended to be educational in orientation. Examples broke down training and knowledge requirements into 'building block' units. The literature indicates that some standards have an emphasis on transversal competencies which may be considered similar to key skills in England.

4.2 Governance structures

As set out in Chapter 2, the education and training systems in the selected countries are varied and this affects the particular governance structures put in place to provide oversight of VET. Some key dimensions on which they are split concern the degree to which VET is nationally, regionally or locally organised. Typically, governance structures are multi-layered and can be complex depending on the arrangements within VET systems.

Amongst the case study countries, Australia is characterised by overarching national level coordination although regional and industry stakeholders are engaged at this level. The Australian Qualifications Framework (AQF) regulates qualifications and is monitored by the Department of Education and Training in consultation with the Department of Industry and Science. Industry is responsible for deriving the standards for relevant job roles and occupations. These are known as the training packages. There is national regulation of training providers. The National Centre for Vocational Education Research plays a key role in analysing VET and the labour market in order to monitor the effectiveness of provision and to provide insight into where new development or redevelopments may be required.

Similarly, Germany provides national oversight, although with states having particular influence over part-time VET schools. Similar to the situation in Australia, a Federal Institute for Vocational Education and Training (BIBB) is responsible for researching, developing and promoting VET including the development of training regulations. It is one of the coordinating bodies for the range of social partners engaged in the governance of the VET system. Professional chambers monitor VET provision funded by their industry sectors. The system is governed by the 'consensus principle' with aims to ensure each type of stakeholder body, particularly those representing employers and employees, has equal influence. Likewise, in the Netherlands, the Ministry for Education has overall authority with qualification development being led at the sectoral level by sector chambers, which comprise social partners (predominantly employer and employee bodies) and VET specialists. SBB (the foundation of cooperation on VET and the labour market) works with 17 expertise centres to develop and maintain qualifications.

In contrast, the influence of regional stakeholders is greater in Canada, where states and territories have more significant authority over the types of apprenticeships provided as well as their content. Thus, the key governance is at the regional level although, in respect of 'Red Seal' apprenticeships it is clear there is some degree of cross-regional consensus on occupational skills needs.

A more multi-faceted example is provided by Denmark. Here, governance structures vary according to iVET and cVET. For cVET this comprises a national council responsible for advising the Education Ministry, 11 national, trade-specific committees which develop the content and form of programmes and courses, which includes joint competence descriptions, and local training committees which advise providers on local adaptions in respect of labour market requirements. In contrast, national trade committees are most influential in iVET, with 50 trade committees being responsible for 109 main courses. The committees' responsibilities cover the identification of iVET requirements, needs analysis, development of regulatory frameworks, approval of training providers, and acting as gatekeepers to the relevant trades.

While this variation in governance structures exists, the key point is that all aim to engage industry and social partners in the specification of standards. Typically, the input of these partners is into the definition of occupations, with training and assessment professionals collaborating and designing packages of education that can meet the defined standards. A second point is that the engagement of social partners is coordinated typically at the industry level. The literature, however, does not reveal the means for drawing together industry stakeholders nor how industry representation is achieved.

4.3 Facilitation and support

Within the literature, stakeholder engagement in defining, designing and reviewing standards is seen as critical. It is apparent however that the stakeholders who are engaged can vary as can the degree of their influence. However, it is common for stakeholders, particularly employers or employer bodies, to be engaged formally even in countries with weak traditions of social partnership. England is counted amongst these. This may be because it is typically viewed as having involved employers and employer bodies in the development and renewal of standards, but to a lesser degree other types of social partner, such as employee representatives or bodies including unions, learners and to some degree providers or provider bodies.

A 2009 Cedefop report captures the degree of involvement and influence of stakeholders across Europe (see Figure 5). As this shows, the most common approach is for institutionalised participation as well as for equal representation between employers and employees (or their representatives); very few countries involve stakeholders on a case-by-case basis, where they do so this is in an advisory capacity.

Amongst those with institutionalised engagement, there is a relatively even split between stakeholders being engaged in an advisory capacity or a decision-making capacity. England (or the UK as captured by the Cedefop study) is seen to involve employers and employer bodies in decision-making; the more recent reforms stemming from the Richard and Sainsbury Reviews continue their influence in decision-making. However, the development of the Trailblazer Apprenticeship standards had limited involvement of other social partners, and where they were involved it was at a later stage than the specification of the occupational standard (Newton et al, 2015).

Figure 5: Variations in stakeholder engagement

	Institutionalised participation		Involvement on a case by case basis
	Equal representation of employers and employees	**Unequal representation/no information (*)**	
Advisory role	Austria **France** Belgium Italy (regional level) Luxembourg Malta Slovakia **Finland** Portugal	Czech Republic Hungary (*) Poland	Cyprus Greece Turkey
Decision making role	**Denmark** Estonia **Germany** Iceland Latvia Lithuania **Netherlands** **Norway** Romania Spain	Ireland Liechtenstein (*) Slovenia Sweden (*) Switzerland **United Kingdom**	

Source: Cedefop 2009

Amongst those countries prioritised in this study, in Australia, similar to in England, employers have a key role in defining occupational competence units although wider partners are involved in the translation of these to full educational standards, which in essence are training packages. The European countries, as set out by the 2009 Cedefop study, are distinguished by greater partnership between the wider group of social partners throughout the process. For example, in Denmark, there is a collaborative and equal engagement in developing standards amongst employer and employee bodies, trades unions and training providers (Denmark Cedefop country report, 2014). This study describes a good level of cooperation between the relevant ministry, trades committees (which comprise employer and employee organisations), and schools, teachers and trainers. Notably, it is the trades committees that monitor the labour market, take responsibility for skills forecasting and for identifying the need for new standards or for existing ones to be updated. This range and degree of stakeholder engagement, although with strong regional representation is also reflected in Canada.

4.4 Identifying, developing and renewing standards

While the influence of different stakeholders may vary, there appears greater uniformity in the processes to identify, develop and renew standards irrespective of whether these are educationally or occupationally based. However, the process adopted in each country is influenced by its governance structures and degree of stakeholder engagement.

While national bodies typically maintain overall statutory authority there is collaborative engagement with industry, and social partners, to identify new and changing requirements. This takes place through formal consultative processes supported by the governance structure, e.g. the formation and use of appropriate trades committees etc. In parallel, the work to identify needs is often supported by the monitoring of standards and labour markets by national or regional stakeholders, and in many cases VET bodies (in Germany, this is a role performed by BIBB; the National Centre for Vocational Education Research in Australia, and the Research Centre for Education and the Labour Market at the University of Maastricht in the Netherlands) or trades bodies or committees.

It is common in many countries for industry bodies to have a key role in specifying relevant occupational standards and units. Since many of the countries prioritised in the study operate educational standards it is unsurprising that national and provider bodies have a greater role in specifying the training package and in regulating the qualifications that can be gained. Intuitively, it is common for this consultative process to take place following occupational specification.

Very fine detail on development processes is not available in the sources gathered for this study although these are noted to emphasise consultation, particularly on occupational profiles. Similarly, the literature and other material obtained did not provide much insight into formal review processes, such as defined durations for standards to be considered current or up-to-date.

However, a couple of examples were found that provide an overview of processes. The first is the detailed information about the development process in Germany, which is reported in Box 1.

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Box 1: The development process in Germany

In Germany, the need for new regulations to cover new occupations, or updated regulations due to changes in occupational structures and roles, is identified through a consultative process with trade unions, employers, industry associations and/or BIBB. Following the consultation, the federal ministry and state governments make the decision on whether to proceed with (re)development and BIBB may be required to undertake research to support the ministry and states to make this decision. There is no automatic expiry date or review date for the standards; rather it is analysis of labour market requirements and the traction of current training in this context produced by BIBB, or industry making a case for change, that typically initiates review.

Benchmarks for the training regulations are then defined. These may result from consultation with the social partners, BIBB research, or from a directive from the relevant ministry. These benchmarks are short documents setting out the occupation title, proposed duration of training, brief overview of the proposed structure and composition of training, proposed form of examination, and a brief overview of the skills, knowledge and capabilities required.

The next phase of work elaborates the benchmarks to create the training regulations. BIBB requires employers and unions to appoint experts to help develop these in conjunction with state governments and BIBB. Trades unions often take the lead on ensuring equal representation of experts from large and smaller organisations. The training regulations are then submitted to the federal and state coordinating committee for final approval with relevant ministries adopting the regulations. This second, end-stage process takes about 1 to 2 years typically, although ambition exists to reduce this process on average to 1 year. Slowing the speed of development is the expectation for consensus, which can take time to build across the social partners involved.

Source: Cedefop Refernet (2014) Germany VET in Europe – Country report

Second, while not a country prioritised for this study, some limited information was gathered about Singapore before the final country selections were made. This included a coverage of the development and implementation process for standards in Singapore which is viewed as a cyclical and staged process. An outline description of this process is included in Box 2.

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Stage 1: Needs analysis

This involves the identification of workforce development needs as well as skills gaps, and, as necessary, leads to the establishment of a new Manpower Skills and Training Council.

Stage 2: Industry and scoping

This determines the occupational groups to be covered, then reviews these occupations and associated training programmes; and then identifies the necessary foundational, industry and occupational competencies.

Stage 3: Development

During this phase, a competency map is developed along with the standard and curriculum. This then leads to the development of the qualification. All developments are validated with industry.

Stage 4: Implementation

Training providers are identified to pilot the qualifications and standards ready for implementation. As part of implementation, recommendations are made for accreditation, and statements of attainment and certificates of qualifications achieved are issued.

Stage 5: Review

The final stage evaluates the effectiveness of the qualifications in respect of raising the industry's competency profile. As part of this the competency map, standards, curriculum and qualifications are reviewed. As necessary, this leads back to Stage 1 for a new needs analysis to be conducted.

Source: Workforce Development Agency (WDA; Singapore), 2011

4.5 Content and structure of standards

The content and structure of standards is determined in part by whether they are occupationally or educationally focussed. As set out in Chapter 3, in essence, an occupationally based standard identifies what a competent and effective individual is expected to do in the workplace, whereas an educational standard will capture the knowledge, skills and sometimes the behaviours and attributes that underpin such effectiveness. As noted, educational standards are often lengthier than occupational standards, not least because the latter require a separate specification of training.

The educational standards also tend to take a 'building block' approach, which leads to the consideration of the common core and specialist training units required by competent workers. As such these standards tend to contain or be accompanied by a training map providing an illustration of the combinations available to enter specific jobs within occupational sectors. An example common structure for content is set out in Box 3; this shows the structure for standards in Australia. It must be noted that the Australian training package (the standard) for construction and plumbing services encompasses all occupations within this sector and is close to 10,000 pages in length.

Box 3: Components of units of competency in the Construction standard

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Unit title: a succinct statement of the outcome of the unit of competency. Each unit of competency title is unique, both within and across Training Packages.

Unit descriptor: broadly communicates the content of the unit of competency and the skill area it addresses. Where units of competency have been contextualised from units of competency from other endorsed Training Packages, summary information is provided. There may also be a brief second paragraph that describes its relationship with other units of competency, and any licensing requirements.

Employability skills: this sub-section contains a statement that the unit contains Employability skills.

Prerequisite units (optional): captures if any units of competency must be completed before the unit.

Application of the unit: this sub-section fleshes out the unit of competency's scope, purpose and operation in different contexts, for example, by showing how it applies in the workplace.

Competency field (optional): this either reflects the way the units of competency are categorised in the Training Package or denotes the industry sector, specialisation or function. It is an optional component of the unit of competency.

Sector (optional): this is a further categorisation of the competency field and identifies the next classification, for example an elective or supervision field.

Elements of competency: these are the basic building blocks of the unit of competency. They describe in terms of outcomes the significant functions and tasks that make up the competency.

Performance criteria: specify the required performance in relevant tasks, roles, skills and in the applied knowledge that enables competent performance. Critical terms or phrases may be written in bold italics and then defined in range statement, in the order of their appearance in the performance criteria.

Required skills and knowledge: identifies the essential skills and knowledge either separately or in combination. Knowledge identifies what a person needs to know to perform the work in an informed and effective manner. Skills describe the application of knowledge to situations where understanding is converted into a workplace outcome.

Range statement: this provides a context for the unit of competency, describing essential operating conditions that may be present with training and assessment, depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts. As applicable, the meanings of key terms used in the performance criteria will also be explained in the range statement.

Evidence guide: is critical in assessment as it provides information to the registered training organisation (RTO) and assessor about how the described competency may be demonstrated. It does this by providing a range of evidence for the assessor to make determinations, and by providing the assessment context. The evidence guide describes: conditions under which competency must be assessed, including variables such as the assessment environment or necessary equipment; relationships with the assessment of any other units of competency; suitable methodologies for conducting assessment, including the potential for workplace simulation; resource implications, for example access to particular equipment, infrastructure or situations; how consistency in performance can be assessed over time, various contexts and with a range of evidence; and the required underpinning knowledge and skills.

Source: © Commonwealth of Australia, 2016 Artibus Innovation

As noted in Chapter 3, in some forms of standard there is an emphasis on transferable and common skills necessary to become an effective professional in any organisation (transversal competence). For example, there is reference within the literature to the Netherlands moving to put a greater emphasis on these. For example, its reforms have led to 25 transversal competences being identified (UKCES, 2013). These include presenting and communicating information, applying technology, coping with pressures and setbacks (resilience), and entrepreneurial and commercial thinking (the remainder are not recorded by the UKCES nor is the source of this information). However, the similarities with what were known as 'key skills' in England are notable.

Similarly, in some comparator studies core competences are also identified and are viewed as multi-dimensional, which means that it is intended that each VET qualification should encompass to a greater or lesser extent, four sub-types of competencies (see Box 4). As such they provide an organising structure for specifying competence and support equivalence and transfer between VET routes.

Box 4: The four sub-types of common competencies

- Professional, craftsmanship and methodical

- Managerial, organisational and strategic

- Social-communicative and normative-cultural, and

- Learning and shaping.

Source: The dynamics of qualifications (Cedefop)

In Denmark there is also some emphasis on common skills across its 12 vocational routes, which are gained through the completion of basic courses focused on knowledge and skills common to several qualifications within an occupational 'branch'. These studies are followed by main courses which are oriented towards qualification, occupation specific outcomes. Personalisation is achieved through the combination of mandatory and voluntary subjects. Modular achievements are noted in a certificate that is awarded following basic courses, which enables the resumption of VET at any time although is not in itself an accreditation.

While Finland was not prioritised for this study, some information on common, core or transversal competencies can be gleaned from one of its education standards. These are identified as lifelong learning competencies. They are listed in Box 5 (with some example competence descriptions included in the first three bullets). It can be seen that these are generic though occupationally focused. The alignment between these and some aspects of Key Skills in England is notable.

Box 5: Finnish Lifelong learning competencies

Competences for Lifelong learning comprise what may be considered transferable skills.

1. **Learning and problem solving:** The student or candidate plans his/her activities and develops himself/herself and the work. He/she assesses his/her own competence, solves problems and makes decisions and choices in his/her work. Student/candidate is adaptive, innovative and creative in his/her line of work, acquires information and analyses, assesses and applies it.

2. **Interaction and cooperation:** The student or candidate acts appropriately in different interactive situations and also expresses different views clearly, constructively and in a way that creates confidence. He/she works cooperatively with different people and as a member of a team and also treats all people equally. He/she observes common rules of behaviour and regulations. He/she makes use of the feedback given.

3. **Vocational ethics:** The student or candidate observes the value basis of the profession. He/she is committed to his/her work and acts responsibly following the contracts made and work ethics.

4. Health, safety and ability to function

5. Initiative and entrepreneurship

6. Sustainable development

7. Aesthetics

8. Communication and media skills

9. Mathematics and natural sciences

10. Technology and information technology

11. Active citizenship and different cultures.

Source: © Finnish National Board of Education

Of those reviewed, only the Finnish standards appear to use graded competencies – which were also used in the English Trailblazer Apprenticeship Standards. Their use leads to debates on whether competence is binary – either an individual can or cannot do the required action, or whether it can be more nuanced. An extract from the Finnish standard provides further insight on this with differing proficiencies arising from training packages (see Figure 6). While this study does not propose a definitive approach, being able to do something successfully under supervision is very different from being able to do it successfully and independently; the latter might arguably be considered the competency required for fully professional conduct, rather than initial labour market or job entry competence, perhaps.

Figure 6: Graded competence within the Finnish standard

Target of assessment	Criteria of assessment		
Mastering the work process	**Satisfactory**	**Good**	**Excellent**
	The student or candidate…		
Planning own work; drawing up plans	Plans work under supervision	Plans work according to given instructions	Designs a workable working plan independently
Master of the work as a whole	Adheres to work times and acts according to instruction under supervision	Adheres to work times and given instructions	Adheres to work times and instructions and discusses possible deviations
Economical and high quality performance	Works under guidance according to set quality targets	Works according to set quality targets	Acts according to set quality targets and develops own actions to reach them

Source: © Finnish National Board of Education

4.6 Strengths and challenges

The evidence gathered on the various international settings, including on VET policy reform, speak to the strengths of different approaches as well as the challenges encountered within international VET systems generally, and some of these have implications in respect of occupational and educational standards used. Others relate to the system for provision which also has some relevance to the new technical routes planned for England.

Drawing out those reforms related to standards and system structures, and as noted earlier, the Danish standards have been reformed to increase the recognition of transversal (transferable) competencies. This has helped to rationalise the number of qualifications as well as to create consistency across sectors. This in turn allows for greater movement of individuals between subjects, courses and work. Likewise, in Denmark, vocational qualifications were broken down in order to introduce some elements of modular or unitised accreditation. This is seen to support weaker students, since it recognises interim achievements; it supports later full qualification through accreditation of prior learning; and can support transfer between qualifications (Cedefop Panorama, 2009). This issue may require greater consideration under the technical routes since their limited number implies a need for greater equivalence and transferability within and between standards.

It is notable in this context that the OECD records an international challenge to be credit transfer in a discussion of the challenges faced by the Canadian apprenticeship system. It finds that in Canada, as elsewhere, despite attempts to embed systems to recognise prior achievements it is an ongoing challenge faced in respect of movement between training colleges as well as between vocational and academic routes.

The introduction of preparatory training (with some equivalence to the planned transition year in England) has been a feature in some countries as well, such as Australia, in order to address concerns about the needs of weaker students within VET systems. In addition, in Australia, the establishment of group training (which coordinates demand between multiple employers for apprenticeships) is seen as a particular strength of this country's VET system because it coordinates employer engagement while also creating conditions to leverage work placements alongside apprenticeships (Evans, 2014).

The effective means to coordinate industry engagement is a recognised strength of Denmark, Germany and the Netherlands and all are known for highly consensual processes which value equally the perspectives of different types of employer as well as the views of employees/employee representatives. The Dutch system receives praise for its sector bodies through which this engagement is achieved. While recent policy reforms have reduced the number of sector bodies from 17 to 8, the approach to engagement remains strong and is viewed to be a critical success factor of the system (Evans, 2014). Equally, strong and consensual engagement is a central feature of the Danish system, with trades committees formed of all social partners being financed by participating organisations. The ability to engage industry in the widest sense in developments is a critical success factor, and a challenge for England to achieve.

5 Discussion and conclusions

This concluding chapter identifies some key points and issues arising from this review, along with some ideas for further work that could be completed to support the development of the new technical routes in England.

5.1 Key points

- The varying purposes of standard, ways in which occupations are conceived and the emphasis on describing skills and training packages within the educational standards hindered a like for like review of competence descriptions.

- Nonetheless, the evidence supports the implementation of a staged process where occupational competency is first defined and then training designed to meet these needs.

- Successful standards are characterised by strong support from industry and other social partners.

- There is a trend towards transversal competence which can support both partial accreditation approaches and equivalence and transfer between routes.

5.2 Key issues and implications

A key finding from this rapid, exploratory study has to be that the differing configurations and purposes of the range of international standards do not readily lend themselves to comparison. This in turn means they do not easily allow for good or common practice in providing the specifics of defining occupational competence to be identified. Occupational profiles are often not available as separate from packages of training; rather, occupations may be described through their requisite and optional units of training which may not be the direction of travel in England given its move away from the NVQ system which did this to a degree.

While there is evidence on a range of different types of standard, and evidence of which is most common, there is no clear picture on which approach is best in supporting labour market transitions. Success in this regard appears much more closely linked to traditions of VET and to industry engagement with training and involvement in standards specification.

Nonetheless, the available evidence is supportive of a staged process to define the new technical routes to be introduced. Undertaking an occupational analysis and specification in conjunction with industry stakeholders is a key first step since training and assessment packages can then be developed around these profiles.

Within the evidence reviewed, there is a trend towards unitised descriptions within standards which provide the building blocks to occupational specialisms. This can support partial accreditation as well as movement between tracks and pathways. In addition, there is a trend towards the identification and specification of a limited range of transversal competences that apply to professional competence which provide the foundation to technical specialisms. These also support movement between qualifications, occupations and routes.

Finally, there is strong evidence of positive and collaborative engagement with a full range of social partners in the development of standards. While there is no detailed evidence on how they are engaged, it is apparent that this connection with industry and training providers, amongst others, are strong supports to an effective VET system.

5.3 Areas for further work

While an aspiration for this research was to gather direct evidence on how occupations and competence are described in different international settings, it was not possible in the relatively short time period for this project to achieve this. For the most part, standards are available, however their form and structure did not allow for a comparative analysis within a limited timeframe. A crucial point is that standards cover different ranges of occupations and specialisms in different ways. It was thus not possible to make clear selections of equivalent units across those available. In most cases, the occupational profile element was not distinct and instead was infused throughout the description of training.

The literature reviewed demonstrated that the most common form of standard internationally is educationally oriented; this type of standard provides a detailed description of the knowledge, skills and in some cases behaviours/attributes that individuals should be able to demonstrate following training. Most break this down into a unitised packages of training. The most immediate task at hand for the development of the technical route is to achieve consensus on the occupational specification for each. This means educational standards are at this point of limited assistance.

However, with more time and resource it may be possible to the access occupational profiles for a range of countries to inform the work of panels. It may be possible to access these through liaison with relevant national VET bodies, or via the relevant large-scale, multi-year studies that Cedefop supports (Refernet). In conjunction with other development work that the Department is funding to begin to define the range of occupations within each route, this could assist in the identification of key occupational competences.

A further consideration, based on the evidence reviewed for this study, would be to conduct a cross-routes review once initial development has been undertaken. The aim would be to identify and ensure common specification of transversal, key skills competency to ensure transferability and equivalence between routes.

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