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The changing nature and role of vocational education and training in Europe

Volume 6: vocationally oriented education and
training at higher education levels – expansion
and diversification in European countries



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Volume 6

Vocationally oriented education and training at
higher education level

Expansion and diversification in European
countries

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Foreword

This research paper forms part of the Cedefop project *The changing nature and role of vocational education and training (VET) in Europe*.

The purpose of the project is to improve our understanding of how vocational education and training (VET) is changing in the countries belonging to the European Union (as well as Iceland and Norway). Over a three-year period (2016-18) the project has analysed how vocationally oriented education and training has changed in the last two decades (1995-2015) and based on these results investigates the main challenges and opportunities facing the sector today and in the future. Work is divided into six separate but interlinked themes:

- (a) the changing definition and conceptualisation of VET;
- (b) the external drivers influencing VET developments;
- (c) the role of traditional VET at upper secondary level;
- (d) VET from a lifelong learning perspective;
- (e) the role of VET at higher education levels;
- (f) scenarios outlining alternative development paths for European VET in the 21st century.

The study takes as its starting point that vocationally oriented education and training is something more than the traditional VET delivered at upper secondary level (in the form of school-based education or training, apprenticeships, or combinations of these). The need for lifelong learning is driving diversification of VET, with new institutions and stakeholders involved. There is also expansion of VET to higher education areas, partly through reform of existing institutions, partly through the emergence of new institutions. This has been caused by factors internal to the education and training system as well as by external pressures linked to demographic, technological and economic changes.

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⁽¹⁾ <http://www.cedefop.europa.eu/en/events-and-projects/projects/changing-nature-and-role-vocational-education-and-training-vet-europe>

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Executive summary

Vocationally oriented education and training at higher levels

Vocationally oriented education and training at higher levels (levels 5 to 8 of the European qualifications framework) takes many forms. It is not clearly defined in most cases, is usually not considered as a sector on its own, and there is often an overlap with continuing vocational education and training (CVET) or higher education (HE). This paper discusses the developments and change processes in this area during the last two decades in Europe. The analyses are based on the following main research questions:

- (a) to what extent is higher education (academic and professional HE) as defined within the qualifications framework in the European higher education area (QF-EHEA) subject to vocational and/or academic drift?
- (b) to what extent is higher-level vocationally oriented education and training delivered outside higher education (i.e. higher VET)?
- (c) what are the implications of these developments for the content and delivery of programmes and qualifications at higher levels?

A multi-perspective model, composed of essential features of vocational education and training (VET) as seen from three partly overlapping perspectives (an epistemological or pedagogical perspective, a socioeconomic or labour market perspective, and an educational system perspective), was used for analysing change processes in selected countries with a specific focus on nursing and engineering fields: Austria, Estonia, Germany, Finland, France, Italy, the Netherlands, Norway and UK-England. Analysis of change processes also draws on further literature covering other European countries.

Education system perspective

The following observations can be made from this perspective:

- (a) many European countries have introduced a separate strand of higher education (during the past 20 years or even earlier) or have added new vocationally or professionally oriented higher-level degree programmes (professional HE) to their offers. These developments lead to different models of higher education systems in Europe; in most cases, a binary system was adopted. Many countries also offer higher-level vocationally

- oriented education and training outside higher education (higher VET), which includes various programme and qualification types;
- (b) the perception of vocationally oriented education and training qualifications at higher levels varies across countries. They are often valued as lower than academic HE qualifications offered at the same levels but, in some countries, they have an equal, and sometimes even higher, status because of their value for the labour market (such as in Germany, France and Austria). Views are particularly diverging for professional HE;
 - (c) countries have opened up higher education to people with vocational qualifications or/and with work experience, but actual use of this non-traditional access route is still relatively low, also in professional HE. There is some increased tendency for higher education graduates to enrol in lower level professional HE programmes (European qualifications framework (EQF) level 5). In newer professional HE formats students also have the status of employees in enterprises. Higher VET qualifications are generally based on initial VET qualifications and work experience, and there is no evidence that this has changed significantly over time;
 - (d) professional HE provides access to further learning and the labour market. The upgrading of former VET programmes to higher education has strengthened the professional status of graduates. Transition from professional HE to academic HE is sometimes still difficult due to structural barriers. Depending on the type of qualification and programme, higher VET primarily prepares for access to the labour market or provides access to further learning and the labour market.

Socioeconomic or labour market perspective

From this perspective, vocational drift processes can be observed:

- (a) in many cases, strengthened vocational principles in the governance of (vocationally oriented) education and training at higher levels. In higher education, vocational drift refers to strengthened links with the labour market and employer involvement in governance structures (but less strongly in financing). However, no significant changes can be identified in higher VET, which has traditionally had a strong vocational orientation, with strong links to the labour market and employer involvement;
- (b) the rationale and main drivers are often the same for academic drift and vocational drift processes (securing supply of highly skilled labour, innovation and economic growth as well as individual and social progression). However, vocational drift frequently exhibits an even stronger

policy focus on employability of graduates and professional relevance of programmes/qualifications offered at higher levels. The justification of academic drift, on the other hand, puts greater emphasis on the need to meet increased knowledge and skills demands and on attracting prospective students.

Epistemological or pedagogical perspective

From this perspective, both, academic and vocational drift processes can be identified:

- (a) the profiles of vocationally oriented programmes and qualifications at higher levels often include both academic and vocational components. The competent authorities are trying to find the right balance, and seem to have changed their positions more than once in recent years. There is some convergence between different types of higher education programme, while higher VET programmes and qualifications mostly maintain the traditional focus on applied knowledge. Transversal learning outcomes are becoming increasingly important, which also indicates a shift towards broader profiles;
- (b) in connection with the pedagogical-didactic approach and the use of companies as learning sites, most changes are seen in vocational drift. In the last two decades, on-the-job learning has increasingly been integrated into vocationally oriented education and training at higher levels and in different ways; either in the form of internships as part of the programmes or as new formats of dual or apprenticeship training. This development can be observed both in traditional academic HE programmes and in professional HE. Learning in the workplace has traditionally been of great importance for higher VET. There are also indications that academic principles or research competences have been more strongly emphasised in professional HE in some countries.
- (c) professional experience is increasingly important for higher-level teachers, especially in vocationally oriented education and training at higher levels. However, this does not necessarily mean that they do not also need to have a higher academic qualification. Academic requirements have occasionally been emphasised even more in recent years.

Focus on nursing and engineering

While engineering qualifications have mostly been offered within higher education for many years and often clearly have a hybrid character (including academic and vocational/professional elements, with engineering programmes in professional HE sometimes struggling in developing their specific profile), this is not so evident for nursing qualifications. Some countries have recently upgraded their nursing qualifications and there seem to be more discussions in this area on the need for qualifications at a higher level or with an academic profile.

Conclusions and further reflections

There has been expansion and diversification of vocationally oriented education and training offered at higher levels in European countries over the last two decades. Participation has increased and various forms of programmes and qualifications are offered. This is particularly the case for professional HE, but less evident for higher VET. Academic and vocational drift can be considered as power struggles or games; these change processes have an impact on the content and delivery of programmes and qualifications. There is evidence for strengthening vocational principles at higher levels in various ways, as well as for strengthening academic principles. Taking a lifelong learning perspective and using the EQF levels as reference point is suggested. The focus should be shifted from looking at sectors and subsectors to exploring the profile and content of qualifications offered at EQF levels 5 to 8, as well as the extent to which they reflect academic and vocational principles or their combination.

- The following aspects are of pivotal importance to further development:
- (a) juggling between meeting labour market demands and wider societal values;
 - (b) finding the right balance between academic and vocational principles;
 - (c) achieving parity of esteem between academically oriented and vocationally oriented qualifications at higher levels by improving awareness and visibility of the latter.

CHAPTER 1.

Introduction

1.1. Setting the scene

This paper provides insights into developments in vocationally oriented education and training at higher levels in European countries during the last two decades (1995-2015) (²). The programmes and qualifications that are the focus of this paper are often not even labelled as VET or as vocationally oriented at national levels, although they clearly include features that are often commonly associated with vocational education and training (VET). EU-wide statistics about the provision of VET at the higher levels are limited. Although ISCED97 (³) uses the categories vocational (level 4) or professional (levels 5-7) orientation, this categorisation is not always clearly visible in statistical data provided by European countries. Similarly, ISCED11 (⁴) makes a distinction between general and vocational orientation at level 4 (post-secondary non-tertiary education), and between academic and professional orientation at levels 5 to 8 (tertiary education). However, no definitions have been provided so far for the latter and the category ‘unspecified’ may be used instead (OECD et al., 2015); in practice, the distinction between vocational, general, academic or professional becomes increasingly fuzzy at these levels. This distinction is also rarely used by countries at present.

Nevertheless, evidence from previous research conducted as part of this Cedefop project suggests that expansion of vocationally oriented education and training at higher levels (European qualifications framework (EQF) level 5 and above) is noticeable in many countries; this may point to a future model where the inherent qualities of VET, as expressed in its definition (Cedefop, 2017b), are delivered at all qualifications levels and by a broader range of institutions. Further, the topic ‘VET at a higher levels’ is reflected in current policy debates at European level. In 2010, the *Bruges communiqué on enhanced European*

(²) A discussion of definitions of VET (and related terms such as technical and vocational education and training, TVET) can be found in Cedefop 2017a. The challenges of understanding and comparing conceptions and scope of VET and continuing VET in European countries are discussed in Cedefop, 2017b and 2018b.

(³) International standard classification of education approved by the UNESCO General Conference in November 1997.

(⁴) ISCED approved by the UNESCO General Conference in November 2011.

cooperation in vocational education and training for the period 2011-20 explicitly called on Member States to ‘develop or maintain post-secondary or higher VET at EQF level 5 or higher, as appropriate, and contribute to achieving the EU headline target of 40% with tertiary or equivalent education’ (Bruges communiqué, 2010, p. 11). In 2016, the New skills agenda highlighted that ‘higher-level VET provision is steadily expanding and is valued by both learners and employers for providing skills needed on the labour market. Such developments need to be further encouraged and be appropriately integrated into the qualifications frameworks and systems’ (European Commission, 2016a, p. 6). It further calls for ‘supporting the development and visibility of higher VET opportunities through partnerships between learning providers, research and business, with a particular focus on needs for higher-level skills at sectoral level’ (European Commission, 2016a, p. 7).

VET principles are increasingly emphasised in the European higher education sector in the Bologna process. The process was launched to build a European higher education area (EHEA) and was initiated by the Bologna declaration (1999), which emphasised citizens’ employability. This is also clearly visible in the recent *Communication on a renewed EU agenda for higher education*: ‘higher education should also allow students to acquire skills and experiences through activities based around real-world problems, include work-based learning and, where possible, offer international mobility. Cooperation with employers can allow HEIs [higher education institutions] to increase the relevance of their curricula and deliver them effectively, and to increase opportunities for students to access high quality work-based learning’ (European Commission, 2017, p. 5).

This research paper takes a broader perspective than purely programmes and qualifications at higher levels that are explicitly labelled as VET or vocationally oriented. In addition to analysing the development of VET at post-secondary or tertiary levels outside the higher education sector, it explores trends in developments regarding the strengthening or weakening of the vocational dimension in programmes and qualifications offered within the higher education sector. Higher education is considered as the sector ⁽⁵⁾ of national education and training systems governed by higher education policies and laws and possibly

⁽⁵⁾ Some publications refer to higher education as a part of the education and training system and use phrases such as ‘segment’, ‘subsystem’ or ‘subsector’ of the education and training system. In other publications, the terms ‘system’, ‘sector’ or ‘area’ are used; these terms seem to emphasise higher education as individual entity that can be clearly distinguished from other parts of the education and training system.

linked to the qualifications framework of the EHEA (QF-EHEA) ⁽⁶⁾. Countries involved in the Bologna process usually have a system of higher education, as a distinct segment of their education and training system, being more or less distinct from other segments. Qualifications offered in higher education are understood as ‘any degree, diploma or other certificate issued by a competent authority attesting that particular learning outcomes have been achieved, normally following the successful completion of a recognised higher education programme of study’ ⁽⁷⁾. In national contexts, the elements of this sector or system are often formally defined, in terms of legal basis, governance structures, types of provider (universities or non-university HEIs), and stakeholders involved (such as staff, learners, social partners).

With regard to higher education as defined within the Bologna process (EHEA), this research paper mainly focuses on the vocationally oriented strand (non-university higher education subsector in binary higher education systems, such as universities of applied sciences, university colleges) and on vocationally or professionally oriented higher-level degree programmes (such as short-cycle programmes, professional bachelor or master programmes, dual studies) which might either be offered at these non-university HEIs or by universities. The study also aims to explore developments in the vocational orientation of more traditional academic higher education (academic HE) programmes ⁽⁸⁾. There is a further grey zone of programmes or qualifications that might or might not be considered as part of higher education, such as those offered by HEIs but not included in the overarching QF-EHEA ⁽⁹⁾ (such as continuing VET offered at universities).

As shown in Volume 2 (Cedefop, 2017b), definitions of VET differ and have changed over time; developments in the higher education sector, despite the harmonisation triggered by the Bologna process, are also quite heterogeneous. Further, there are increasingly blurred borderlines between both systems and subsystems. However, we use the distinction ‘within’ and ‘outside’ QF-EHEA in

⁽⁶⁾ <http://www.ehea.info/>

⁽⁷⁾ Enic-Naric.Net: <http://ear.enic-naric.net/emanual/glossary/glossary.aspx>

⁽⁸⁾ The distinction between traditional academic and professional is somewhat artificial and does not do justice to the fact that higher education programmes offered at traditional universities can also be professional-oriented, such as programmes for doctors, dentists, veterinary surgeons, teachers, and architects. However, we use the term here to distinguish these programmes from those that are clearly referred to as professional.

⁽⁹⁾ Paris communiqué, 2018 (appendix III – Overarching framework of qualifications of the European Higher Education Area, revised 2018)

structuring analysis of the literature relating to this diverse area, as well as the analysis conducted at national levels in the case studies (where this distinction is still often reflected in governance structures).

In European policy documents and studies, as well as at national levels, different terms are used for vocationally oriented higher-level routes within and outside higher education; the use of different terms itself reflects the content, value and esteem attached to them (Bathmaker, 2017, p. 3). For the purpose of this research paper, and to increase reader friendliness, we suggest the following working definitions in discussing changes to the vocational dimension at higher levels:

- (a) professional higher education (professional HE): this term is used for higher professional and vocational types of programmes that fall under the QF-EHEA, particularly short-cycle and professional bachelor and master degrees. It was coined by EURASHE (founded in 1990)⁽¹⁰⁾, the European Association of Institutions in Higher Education, that offer professionally orientated programmes and are engaged in applied research within the Bologna cycles. EURASHE defines professional HE as ‘a form of higher education that offers a particularly intense integration with the world of work in all its aspects, including teaching, learning, research and governance, and at all levels of the overarching qualifications framework of the EHEA’ (Camilleri et al., 2014, p. 24). This definition clearly goes beyond the type of provision (in terms of length or level) and refers to didactical and governance related aspects as well;
- (b) higher VET: this term is used here for vocationally oriented programme and qualification types that are fully outside the QF-EHEA and are linked to EQF levels 5 to 8 via their inclusion in a national qualifications framework (NQF). The term is, for example, promoted by UEAPME, the employers’ organisation representing crafts and SMEs from the EU and acceding countries at European level⁽¹¹⁾. The inclusion of qualifications into NQFs is an ongoing process and not all qualification types that might fall within the scope of higher VET have been classified so far; many qualifications offered

⁽¹⁰⁾ <https://www.eurashe.eu/>

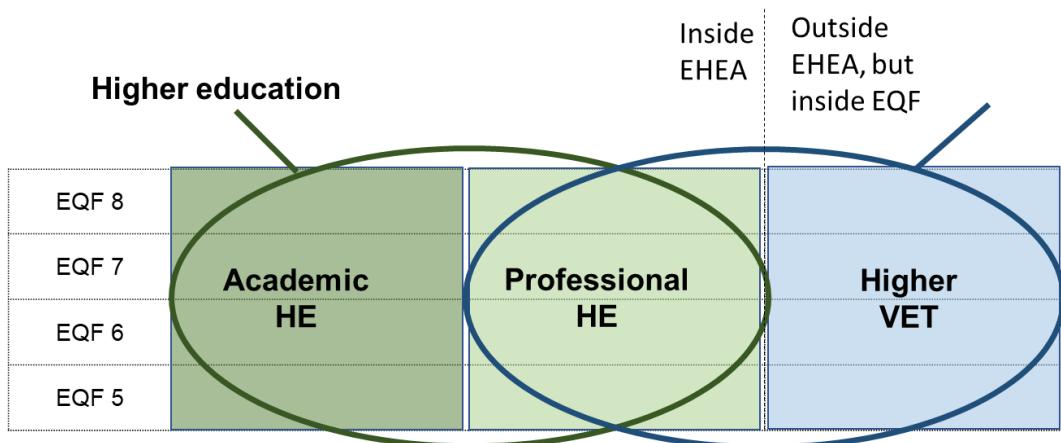
⁽¹¹⁾ UEAPME was involved in the Erasmus+ project QA HiVETnet (quality assurance in higher vocational education and training: <https://www.qa-hivet.net>) that aimed at developing ‘higher VET’ as a brand for higher level VET qualifications offered outside the higher education sector and therefore also outside the Bologna system. Chambers from Germany and Austria strongly support establishing a ‘higher VET’ brand. This term is also already used in some other countries for a specific strand of education, such as in Slovakia or Sweden.

outside the formal system are not yet included in NQFs. Therefore, the size of this area cannot be indicated, but it is expected that the visibility of higher VET qualifications will increase with the continuing implementation of NQFs;

(c) higher vocational and professional education and training (higher VPET): this is the encompassing term for vocationally and professionally oriented education and training at higher levels (EQF levels 5 to 8) and covers both areas described above.

The scope of this study includes higher VPET but also includes changes related to the use of VET principles in programmes offered at traditional academic HEIs (universities) which are not labelled as professional. Figure 1 illustrates the terms and concepts used in this study and how they overlap.

Figure 1. Terms and concepts used and how they overlap



Source: Cedefop.

1.2. Main research questions, methodical approach and structure of the research paper

The aim of this paper is to explore the developments and change processes related to vocationally oriented education and training at higher levels during the last two decades. It focuses on the following phenomena: academic drift and vocational drift.

The analyses in this research paper are based on the following main research question:

- to what extent is higher education (at EQF levels 5 to 8, as defined within the EHEA) subject to vocational and/or academic drift;
- to what extent is higher-level (EQF levels 5 to 8) vocationally oriented education and training delivered outside higher education (higher VET);

- (c) what are the implications of these developments for the content and delivery of programmes and qualifications at higher levels?

In a first step, a literature analysis was carried out to explore the concepts used (particularly for describing vocational and academic drift) and their underlying theories, and to gain insights into related developments in different European countries. In a second step, nine case studies were carried out (based on desk research and interviews with relevant national stakeholders) for an in-depth review of the developments in selected countries: Austria, Estonia, Germany, Finland, France, Italy, the Netherlands, Norway and UK-England. As a complement to analysing these change processes generally, the case studies put a particular focus on nursing and engineering.

- The research paper includes the following sections:
- (a) Chapter 2 introduces the analytical framework and the concepts used for describing and analysing these change processes in vocationally oriented education and training at higher levels;
 - (b) Chapter 3 presents main development trends related to vocationally oriented education and training at higher levels in European countries during the last two decades;
 - (c) Chapter 4 explores the drivers for change and persistence, as well as current debates;
 - (d) Chapter 5 focuses on the particular situation and developments in nursing and engineering in the case study countries;
 - (e) Chapter 6 presents concluding reflections and discusses potential future challenges.

CHAPTER 2.

Concepts and underlying theories

This chapter provides the analytical framework for discussing change processes in vocationally oriented education and training at higher levels. It focuses on the concepts of academic and vocational drift and introduces a model for analysing the associated processes of change, including the expansion of higher vocational education and training (VET).

2.1. Analytical framework

The terms academic and vocational drift are used mainly to describe change processes in higher education but they are used with different notions and referring to different aspects.

As pointed out by Tight, the ‘theory of academic drift appears to have been first identified by Burgess and Pratt in the UK context, expressing the tendency of higher education institutions (HEIs) of lesser status to aspire to higher status’ although ‘the idea (or ideas) of “academic drift” has been around for nearly a century at least’ (Tight, 2015, p. 87-88). This change process often refers to non-university institutions and is understood as ‘the attempt of non-university institutions to strive for an academic status, recognition, and rights associated with university in an upward movement to resemble the university’ (Griffioen and de Jong, 2013, p. 174). Such changes are also reflected in the profile of the programmes offered by these institutions.

Although the term ‘academic drift’ has been coined in relation to higher education, similar phenomena can be identified for higher VET, though with a slightly different understanding. Here, for example, it could refer to:

- (a) increasing the share of (general, abstract, theoretical) knowledge and strengthening theory-based reflection in VET programmes/qualifications offered at higher levels, to facilitate permeability and progression (such as providing access to higher education studies);
- (b) strengthening institutional links between higher VET providers and HEIs.

Vocational drift is generally understood as strengthening VET principles in higher education. Such changes can lead to the development of new forms of cooperation with labour market stakeholders or the introduction of new types of providers and programmes, and may be changes in study contents and profiles of learning outcomes or didactics and assessment. However, it does not make

sense to use the term ‘vocational drift’ for change process related to higher VET because the types of programme or qualification that are part of this area are already considered as VET. Instead, this study uses the term ‘expansion of VET at higher levels’ to describe the introduction of new VET programmes or qualifications, at higher levels outside higher education, and the providers offering them. Although these programmes or qualifications are inherently vocational, in some cases it may be possible to identify processes to strengthen their vocational aspect (described as ‘strengthening and intensification of VET’ in Cedefop, 2017b), for example, by:

- (a) strengthening the focus on professional experience as entrance requirement for learners and/or for obtaining the qualification (such as by introducing or strengthening possibilities for obtaining the qualification based on validation of professional experience);
- (b) increasing the share of practical or work-based learning;
- (c) establishing stronger links to labour market stakeholders, encouraging employer engagement and strengthening the role of social partners (such as by involving employers and industry representatives in designing and delivering qualifications, as well as in certification processes).

However, such change processes in higher VET programmes or qualifications can only be identified by detailed examination.

Researchers emphasise that academic or vocational drift in higher education or the expansion of higher VET are not to be considered as substitutes because these developments can be observed at the same time in Europe or even in the same country (e.g. Hippach-Schneider, 2014). When discussing these change processes and the direction of travel, it is always necessary to indicate which aspects are considered and to specify from which perspective these phenomena can be observed. Further, it is important to specify the object and direction of change, the context and target area, and the key processes observed, as well as their results:

- (a) direction of change: the directions of change to be considered include academic drift, vocational drift in higher education and the expansion of higher VET (as one way of academic drift in VET);
- (b) object of change: we distinguish between higher education and VET, although we are aware of the blurring distinction between these two education sectors. It is a pragmatic decision and oriented on the more

traditional understanding of these two sectors. We specifically look at higher VET (¹²);

- (c) context/target area of change: for higher education we distinguish between professional HE (as an area introduced or developed and expanded on the basis of these processes of change, with or without institutional change) and more traditional or academic HE. With expansion of higher VET, the context of change is identical to the objective of change: higher VET can be located at national level in the formal system or in the non-formal area, in continuing VET or adult education, offered by public or private providers;
- (d) key processes observed: these include changes in:
 - (i) the content and delivery of programmes or qualifications (such as by increasing or reducing the share of practical or work-based learning, strengthening or diminishing the importance of professional experience, and establishing or diminishing links to labour market stakeholders);
 - (ii) institutional transformations (as in upgrading of VET providers to HEIs);
 - (iii) the introduction of new types of professionally oriented programme or qualification at higher levels (upwards or vertical extension or expansion).

All these aspects need to be reflected in the analytical framework for this study. An analytical model for analysing academic drift was developed by Kyvik (2007). Inspired by Neave's analysis of academic drift in Europe (Neave, 1979) and based on further research undertaken since then, Kyvik (2007) has developed a model that distinguishes six (closely intertwined) levels of academic drift:

- (a) student level (student drift): an increasing number of young people prefer to enrol in higher education programmes rather than in VET programmes (increase in the absolute proportion of an age cohort taking academic qualifications);
- (b) staff level (staff drift): staff members have higher aspirations and wish to pursue their academic/research interests;

(¹²) Although, historically, VET and higher education emerged from opposing traditions, with the university producing systematic scientific knowledge and vocational education providing training for specific occupations, VET and higher education systems are approaching each other (Maclean, 2007) and the borderlines between them are partially blurring (Dunkel and Le Moullour, 2009). Different scenarios have been described for the future development of the relationship between these two segments: academic and vocational career tracks retaining their main characteristics and separate responsibilities, qualitative differences between these two tracks being reduced (unification), or the evolution of a new intermediate sector offering dual qualifications (hybridisation).

- (c) programme level (programme drift): drift towards academic values and practices in relation to the curriculum, degree structure and research;
- (d) institutional level (institutional drift): vocational institutions strive for the status of a HEI or of a university;
- (e) sector level (sector drift): changes in relation to improving the academic status of non-university (higher education) institutions as a whole;
- (f) governmental level (policy drift): policy changes in relation to the purposes of non-university education, the rights and obligations of academic staff, and the status and role of non-university education within the higher education system.

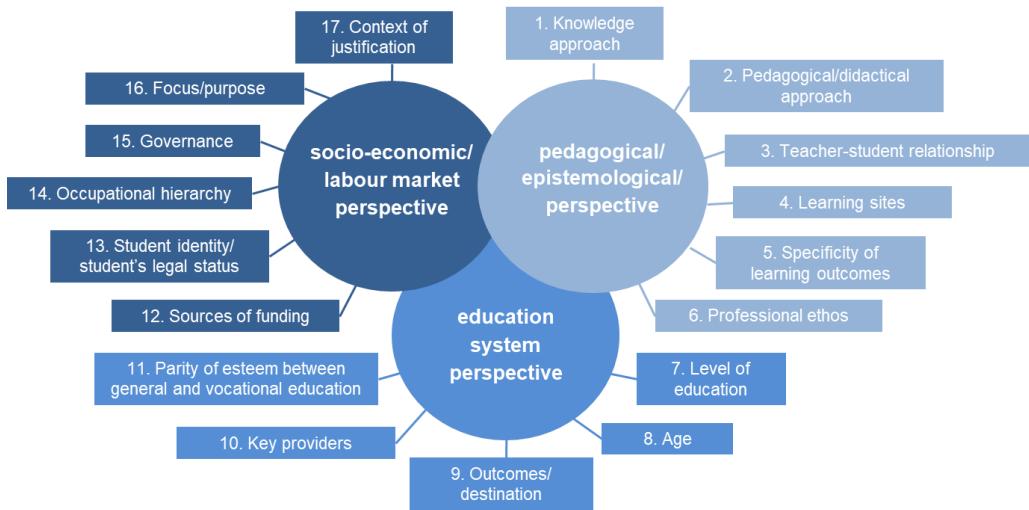
Focusing on different levels seems useful for structuring characteristics and indicators of these change processes. This model could also be used for analysing change processes related to academic drift; however, it focuses on this specific type of change processes only, so other models would be needed to analyse vocational drift and expansion of higher VET. Therefore, we fall back on a model that covers the aspects defined by Kyvik (2007) but can be used for the broader questions in this study and that was developed in an earlier subproject of the Cedefop project *The changing nature and role of VET* (Cedefop, 2017a).

A multi-perspective VET conception model has been developed for analysing national conceptions of VET and their changes over time. It is composed of essential features of VET as seen from three (partly overlapping) perspectives: an epistemological or pedagogical perspective; a socioeconomic or labour market perspective; and an educational system perspective. Each of these emphasises different key features or components of VET. This model (Figure 2) was used as a starting point for the framework for analysing change processes related to vocationally oriented education and training at higher levels ⁽¹³⁾.

In the following sections, this model is used to structure the definitions and concepts for discussing academic drift, vocational drift, and expansion of higher VET in research literature. The results of this literature analysis informed the identification of characteristics and indicators of the change processes examined in the case studies. Since not all dimensions of the perspectives described above are explicitly addressed in the research literature, the three perspectives in the following sections are the essential structuring elements.

⁽¹³⁾ The perspectives and dimensions are explained in Annex 1. Some dimensions had to be slightly changed for this purpose and not all are important or make sense to be included for the purpose of this study. We have also changed the sequence when discussing the three perspectives and their key features.

Figure 2. Analytical framework



Source: Cedefop, 2017a, p. 31.

2.2. Education system perspective

Academic drift often includes institutional changes in the sense of ‘vertical or upward extension of institutions’ (Tight, 2015, p. 95), a formal upgrading of VET to higher education levels (often as non-university type institutions but located at equivalent level). This means a drift into higher education and involves newcomers (non-higher education institutions) entering into advanced level education (Holmberg and Hallonsten, 2015). Upgraded VET institutions/programmes are often governed by higher education policies/authorities/regulations, the same ministry as for universities. They are governed by higher education policies and laws, have to comply with the same quality assurance requirements as universities, and are possibly linked to the qualifications framework of the European higher education area (QF-EHEA). These institutions might also gain the same rights as universities. The status of VET programmes and qualifications may be enhanced by offering them at higher levels or even integrating them into the higher education sector. Academic drift that lifts the academic status of non-university HEIs could lead to equality in status between routes of study such as professional-oriented and academic-oriented higher education programmes. However, this is not necessarily the case, since upgraded programmes, or those offered at non-university types of HEI, might still be considered inferior or second choice. The status of programmes at higher levels with vocational or professional orientation is likely to depend on the overall perception of VET in the country, particularly initial VET (Cedefop, 2017b).

Academic drift could also refer to change in institutional status; for example being 'upgraded' from college to full university. It could refer to the introduction of academic career structures in the non-university sector, the introduction of financial incentive systems to promote academic practice or the tendency of non-university institutions to apply the university label in an international context (symbolic drift) (Kyvik, 2007). It seems that universities of applied sciences (UAS) are particularly encouraged to become research institutions. Common policies might be found but they often have a different focus and are supported with fewer resources than traditional universities (Kyvik and Lepori, 2010). Based on reference group theory (Kyvik, 2007), a driving force for the research drift might be the higher aspirations of staff in the non-university sector who want to pursue the same academic interests as higher education staff.

Academic drift as the process of homogenisation of previously different institutions (¹⁴) is explained in several publications with the concept of (institutional) isomorphism (Riesman, 1956 cited in Reichert, 2009; DiMaggio and Powell, 1983 in Kyvik, 2009; Tight, 2015). Tight, for example, suggests that academic drift may be viewed as a theory of institutional change; he compares it with the notion of institutional isomorphism which refers to 'an institutional theory expressing the idea that organisations operating in the same sector – for example, motor manufacturing or fast food retailing – tend towards increasing similarity of form and practice' (Tight, 2015, p. 88). DiMaggio and Powell define isomorphism as 'a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions' (DiMaggio and Powell, 1983 - cited in Kyvik, 2009, p. 78). They have 'identified three mechanisms through which institutional isomorphic change occurs: coercive isomorphism, which results from both formal (legal) and informal pressures exerted by organisations upon which institutions are dependent and by cultural expectations in society; mimetic isomorphism, which is a response to uncertainty and leads to the imitation of organisations that are perceived to be more legitimate or successful; and, finally, normative isomorphism, which stems primarily from professionalisation and involving two processes – the socialisation through formal education to common knowledge and values, and the subsequent interaction and diffusion of ideas and values through professional associations' (DiMaggio and Powell, 1983 - cited in Kyvik, 2009, p. 87).

(¹⁴) This process of homogenisation was particularly supported by the Bologna process since 'occupation- and application-oriented bachelor degrees and universities of applied sciences as well as master degrees and research universities have to follow the same scientific and discipline-related paradigms according to the politically 'opening' implemented by the Bologna process' (Rein, 2012, p. 3).

The upgrading of specific VET institutions together can be described as sector drift: 'sector drift is related to the non-university institutions as a whole, basically driven by their joint associations and spokesmen to enhance their academic status. Sector drift can also take place when new rules and regulations pertaining to non-university institutions as a whole have an academic direction' (Kyvik, 2007, p. 336).

Implementation theory is used to explain academic drift as policy change (policy drift) related to the mission of non-university institutions. According to Majone and Wildavsky, policy-makers must cope with new circumstances during the implementation process 'that often imply the reformulation and re-design of original intentions and plans. Thus, goals often change over time, partly because of weaknesses in the ideas themselves, partly because of the fact that ideas change, and also because of new circumstances' (Majone and Wildavsky, 1978 cited in Kyvik, 2007, p. 337).

These changes in the higher education landscape and its institutions (by upgrading VET to HEIs or introducing non-university HEIs) can result in a new institutional landscape and the mission and structural diversification of national higher education systems. Higher education systems can be established that are either (fully or partially) unified (traditional academic studies and vocational programmes are offered within universities), have a binary structure (universities and professionally oriented HEIs are regarded as completely separate institutions) or have characteristics of both (mixed) (e.g. Scott, 1996; Kyvik, 2004).

Academic drift is attributed to change processes mainly from the perspective of VET or professional HE. At the same time, from the perspective of the entire higher education sector, the introduction or expansion of professional HE programmes, or even the establishment of a new subsector of higher education, can be regarded as vocational drift (Neave, 1979; Scott et al., 2004; Kyvik, 2009; Camilleri et al., 2014; European Commision, 2016b). Grubb and Lazerson (2004) link the conversion of higher education to professional education to the concept of vocationalism. They refer to 'an educational system whose purposes are dominated by preparation for economic roles, one where there is sufficient access so that many individuals might have reasonable hope of more schooling, and one that is responsive to external demands in this case, to demands for the "essential skills employers want" (Carnevale, 1990) and the skills of the 21st century' (Grubb and Lazerson, 2004, p. 3). Vocationalism refers to occupational intentions – the purpose of higher education is considered as occupational preparation – as well as to related employment, where graduates of vocationalised programmes find employment in the occupational area for which

they have been trained (Lazerson, 2010). According to Grubb and Lazerson (2004), these developments already emerged at the end of the 19th century and ‘accelerated over the course of the twentieth century – the century of vocationalism, the century of professionalisation, or (as economists might say) the century of human capital (Goldin, undated)’ (Grubb and Lazerson, 2004, p. 3).

Academic drift refers not only to the drift into higher education but can also point to processes of change within it (Neave, 1979; Kyvik, 2007). The latter can be seen as vertical extension (¹⁵) by adding higher level degree programmes to their offers (Morphew, 1997, p. 5), or as research drift in relation to professional HE programmes (Kyvik and Lepori, 2010; Harwood, 2010).

Academic drift is sometimes understood as the increase of student enrolments in higher education (¹⁶) (Raffe et al., 2001). This suggests an increasing number of young people who prefer to enrol in higher education programmes rather than in VET programmes outside higher education (increase in the absolute proportion of an age cohort taking academic qualifications). The academic pathway is preferred because young people (and/or their parents) expect better opportunities in the labour market. The conception of academic drift as an aspect of enhancing social status (upward mobility) is linked to theories of credentialism (e.g. Collins, 1979 cited in Kyvik, 2007): ‘according to this school of thought, students compete for credentials in order to enhance their competitive advantage in the labour market and their social and cultural capital. If academic degrees are perceived to contain a higher monetary, social and cultural value than vocational or short-cycle professional degrees, this may lead to student drift towards universities, not necessarily because they are particularly interested in obtaining the technical skills of such a degree, but because they want to improve their competitive advantage when applying for jobs, or because they like the idea of earning a higher degree as a means of enhancing their social status (Jónasson, 2004). Consequently, non-university institutions will try to develop higher degrees, or to copy university programmes, in order to sustain or advance their position in the higher education market’ (Collins, 1979 cited in Kyvik, 2007, p. 334).

(¹⁵) ‘Vertical extension is a term used by higher education researchers to describe the phenomenon whereby colleges and universities make ‘upward extensions in their academic programs’ (Schultz and Stickler, 1965, p. 231, cited in Morphew, 1997, p. 5), e.g. by implementing master or doctoral programmes.

(¹⁶) Or, more generally: increases in the share of young people participating in post-secondary education (Lerman and Rein, 2015).

The concept of vocational drift is also used in this context: it is sometimes understood as the driving force of higher education expansion (mass higher education) (e.g., Lazerson, 2010; Brown et al., 2003) and linked to the theory of social stratification (Shavit et al., 2007). However, this development can lead to downward mobility (in terms of faster routes to degrees at lower level, as in short-cycle higher education (SCHE)) (Kyvik, 2009). Vocational drift can also be understood as diversification of learners: VET programmes/qualifications offered at higher education levels do not only target graduates from secondary education but also young adults and more mature students with professional backgrounds and/or work experience (European Commission, 2016b).

Table 1 summarises the characteristics and indicators of academic drift, vocational drift and expansion of higher VET from the education system perspective, as identified in literature.

Table 1. Education system perspective: characteristics and indicators of academic drift, vocational drift and expansion of higher VET

Dimension	Academic drift (HE and VET)		Vocational drift (HE)/expansion of higher VET
Segment and level of the education system	<ul style="list-style-type: none"> • vertical or upward extension of VET into HE as well as within HE (by adding higher-level degree programmes to their offers); • mission diversification and structural diversification of national HE systems; establishment of (full or partial) unified, binary or mixed HE systems. 		<ul style="list-style-type: none"> • increased provision of vocationally oriented programmes/qualifications at higher levels; • stronger emphasis of VET elements in programmes/qualifications offered at higher levels (including traditional academic HE programmes). • mission diversification and structural diversification of national HE systems; • establishment of (full or partial) unified, binary or mixed HE systems
Number/background of students	Increasing number of young people enrolling in higher-level programmes; they might already have an initial VET qualification and/or work experience		Stronger emphasis on mature students with professional work experience
Outcomes/destination	Possibly in addition to occupational qualifications or rights, graduates may gain access rights to HE and credit transfer may be possible.	↔	Stronger emphasis on obtaining occupational qualifications or rights

Dimension	Academic drift (HE and VET)	Vocational drift (HE)/expansion of higher VET
Institutional landscape	Introduction of non-university HE institutions with strong professional orientation via upgrading of VET institutions/programmes	Introduction of non-university HE institutions: new types of institutions outside HE offering VET programmes/qualifications with strong professional orientation at higher levels (higher VET).
Parity of esteem	Equality in status between routes of study at higher levels is possible but not necessarily the case	Equality in status between routes of study at higher levels is possible but not necessarily the case.

NB: ⇔ indicates that, these drift processes tend to emphasise opposite aspects in relation to the respective dimensions (clear difference in focus can be observed).

Source: Cedefop.

2.3. Socioeconomic or labour market perspective

Vocational drift might be linked to increased engagement of labour market stakeholders in governance arrangements. This can occur throughout the life cycle of programmes/qualifications, starting with the inclusion of labour market information in their design, through consulting or involving employers, to involving employers' organisations and business representatives in the various steps of evaluating these programmes (internal quality assurance mechanisms) or monitoring their outcomes (feedback loops). There may also be employer representation in governing bodies of the provider, advisory boards, or other kinds of councils (European Commission, 2016b).

As an impact of academic drift, the source of funding can change for upgraded programmes that are integrated into higher education, reflecting the same financing conditions as for other higher education programmes. However, academic drift does not necessarily lead to changes and funding can come from the State (education budget) as well as from companies.

Although learners in programmes subject to academic drift might be seen purely as students (even if also be working while studying), vocational drift characterised by a stronger emphasis on work-based learning elements might lead to students (at least for certain periods of their programme) also having the status of interns or trainees. In some cases they are also employees, as when studying and working at the same time or in dual-study programmes where they are employees at companies that cooperate with the HEI as work-based learning provider.

The implications of academic drift can be twofold. Programmes/qualifications might provide progression and access to higher education, possibly credit

transfer; they might also improve professional preparation for the labour market through upgrading of professional competences and acquisition of managerial competence. However, their focus could also be on progression in education or in the labour market; vocational drift might focus more on access to a specific profession.

Political justification, supporting both academic drift and the expansion of higher VET, comes from securing the supply of highly skilled labour, innovation and economic growth as well as individual and social progression. The increasing importance of qualifications at higher levels is based on the assumption that economic performance, competitiveness and development capacity are significantly influenced by the educational level of the population and the proportion of highly qualified people (e.g. Heisler, 2018, p. 1; OECD, 2017). Vocational drift is often linked to an increased policy focus on meeting the challenges of employability. In higher education, the Bologna Process has played an important role in raising awareness of employability (Schubarth and Speck, 2014).

Table 2 summarises the characteristics and indicators of academic drift, vocational drift and expansion of higher VET from the socioeconomic or labour market perspective.

Table 2. Socioeconomic/labour market perspective: characteristics and indicators of academic drift, vocational drift and expansion of higher VET

Dimension	Academic drift (HE and VET)		Vocational drift (HE)/expansion of higher VET
Governance	Reduced labour market engagement in development and delivery of qualifications/programmes at higher levels	↔	Increased labour market engagement in development and delivery of qualifications/programmes at higher levels
Source of funding	In some cases, same funding as other HE programmes	↔	Increased labour market engagement in funding programmes
Student identity/legal status	Preliminary students, in some cases also interns, trainees, employees	↔	Students increasingly also as interns, trainees, employees
Occupational hierarchy	Technicians/professionals		Technicians/professionals
Focus/purpose	Providing progression and access to HE and possibly credit transfer; improving professional preparation for the labour market (upgrading of professional competences, acquisition of managerial competence); professionalisation	↔	Provision of access to a specific profession

Dimension	Academic drift (HE and VET)	Vocational drift (HE)/expansion of higher VET
Policy rationale/ context of justification	Securing supply of highly skilled labour, innovation and economic growth as well as individual and social progression	<ul style="list-style-type: none"> securing supply of highly skilled labour, innovation and economic growth as well as individual and social progression employability by stronger link to labour market demands

NB: ⇔ indicates that, these drift processes tend to emphasise opposite aspects in relation to the respective dimensions (clear difference in focus can be observed).

Source: Cedefop.

2.4. Epistemological or pedagogical perspective

The academic drift in vocationally oriented programmes or qualifications at higher levels can be characterised by accentuation of scientific, theoretical and abstract knowledge, gradual reduction in the emphasis on professional, practical or experience-based knowledge (Neave, 1979, p. 154) and increasingly science-oriented curricula (Harwood, 2010, p. 416) (17).

More emphasis could be placed on linking academic knowledge (disciplinary based) to professional (practical) knowledge. Programmes or qualifications would be drifting in this direction if they deviated from their original vocational, professional and industrial goals. Research and research-based teaching, new and more theoretically oriented curricula, and new entrance criteria for teaching staff would be examples of elements of such drift (Christensen and Erno-Kjolhede, 2011).

From the perspective of the upgraded VET institutions, the reasons for these change processes are often linked to greater emphasis on professionalisation in the respective field, to meet the challenges of the knowledge society (e.g., Smeby, 2006; Elzinga, 1990 cited in Kyvik, 2007; Smeby and Sutphen, 2015). According to Elzinga (1990 cited in Kyvik, 2007, p. 335) ‘professionalisation is characterised by the scientification of the knowledge core through the

(17) Tremp (2018) argues that the difference between the academic scientific world and the non-academic professional world can be seen in different forms of knowledge, each of which is at the centre of attention. He refers to the distinction between professional and scientific knowledge: professional knowledge enables competent action in the profession and corresponds to a consensus on professional courses of action; scientific knowledge means a knowledge stock produced methodically and systematically, is committed to the coding ‘true/false’ but is nevertheless permanently under review. The third form of knowledge is everyday knowledge that is experience-based and unsystematic. These forms of knowledge each have specific functions and occupational activity has a multiple knowledge base.

establishment of a research capability, the introduction of master and PhD programmes, as well as new career patterns based on research and research training, while the role of tacit knowledge in the training process is downplayed'.

Vocational drift can also be observed as an increased combination of academic knowledge (disciplinary based) with professional (practical) knowledge and increased emphasis on the integration of professional and academic knowledge. Entrepreneurship competences may also be more strongly emphasised: this covers initiative, critical thinking and analysis of business situations and identification of solutions, specific knowledge linked to start-ups and business planning, creativity and innovation (European Commission, 2016b, p. 129).

Academic drift could lead to strengthening academic values and practices in relation to didactics and assessment, including theory-based reflection on practice and scientific research as part of a programme (Harwood, 2010). In relation to academic drift into and within higher education, an increasing relative importance of research activities helps position the institution as well as increasing research capacity, by emphasising science-oriented research-aims, strengthening the link between education and research. Newcomers may try to gain institutional legitimacy and prestige by building research activities; this might also be linked to the expansion of research funding, as provision of programmes is linked to research activities (Lepori and Kyvik, 2010).

Vocational drift can be characterised as increased practice orientation in traditional higher education programmes, including applied research, strengthening work-based learning in higher education programmes, and in higher VET. Similar to work-based learning models in initial VET, work-based learning integrated in programmes at higher levels can take the following forms (European Commission, 2013):

- (a) work-based learning integrated in a higher-level programme, through on-site labs, workshops, kitchens, restaurants, simulations or real business/industry project assignments aims to create real-life work environments and to establish contacts and/or cooperation with real companies or clients;
- (b) higher-level programmes can incorporate compulsory on-the-job training periods in companies (internships, work placements or traineeships);
- (c) higher education programmes can be offered as dual-study programmes: students spend alternating learning phases at the HEI and in companies which are considered as training providers (apprenticeship-type schemes at higher education levels).

This study follows the definition of work-based learning proposed by the Organisation for Economic Cooperation and Development (OECD) which

includes only the second and third models described above (referring to authentic workplaces): ‘work-based learning is learning that takes place through some combination of observing, undertaking, and reflecting on productive work in real workplaces. It may be paid or unpaid and includes, for example, institutional arrangements such as apprenticeships, work placements and internships of different types, as well as informal learning on the job’ (OECD, 2015). The first model and ‘learning about work’ (such as through employer visits to the higher education provider) can be considered as work-related learning. Dual study programmes combine governance-related and curricular aspects of both the VET and higher education, while also combining the workplace and HEIs as learning venues. Usually, students have work contracts with the company, and the HEI and companies cooperate closely. However, different forms of cooperation in dual study formats can be observed (Krone, 2015). Vocational drift can also be considered as the increasing use of problem-based learning or case-based learning. Changes can refer to the type of assessment used or the designation of criteria for judging student performance as well as to flexible learning pathways (including part-time study programmes) (¹⁸).

Multiple learning sites could be available, but classroom settings could increasingly be used as under the influence of academic drift. However, this is probably not the aspect that has changed significantly, as in upgrading VET programmes to higher education programmes. It is the teachers’ background that might have changed: they might more often have an academic background and increasing emphasis might be put on their scientific competences (Würmseer, 2010). For example, teaching staff at non-university HEIs could become more academically oriented than originally envisaged, have higher aspirations and wish to pursue their academic/research interests (Kyvik, 2007). This can be observed, for example, in an increase in habitations. The following changes can also be observed in relation to teaching staff in non-university institutions: ‘emphasis upon advanced work, less significance attached to part-timers, or to recurrent education; accentuation of importance of research, failure to recruit practitioner personnel’ (Neave, 1997, p. 155). Further, when ‘the higher education system is regarded as a hierarchy, staff members in programmes or institutions defined to be in the lower part of the ranking scale will be inclined to compare themselves with staff at higher ranked programmes and institutions and will subsequently try to copy the behaviour of these people to obtain the same status or income’ (Kyvik, 2007, p. 334).

(¹⁸) See also Hippach-Schneider, 2012; European Commission et al., 2014; 2016b.

Vocational drift could lead to greater emphasis on employing teachers with comprehensive work experience, possibly in addition to their academic degree. Depending on the work-based learning scheme, higher-level programme teaching is increasingly including part-timers who are also practitioners or teachers with professional experience in industry. Trainers in companies may be involved during compulsory work placements or in dual-study programmes and the master-apprenticeship model can be applied.

Academic drift might lead to programmes with learning outcomes that increasingly refer to broader occupational fields, while vocational drift might be observed as basing higher-level programmes on professional or occupational qualifications.

Table 3 summarises the characteristics and indicators of academic and vocational drift and of expansion of higher VET from the epistemological or pedagogical perspective.

Table 3. Epistemological or pedagogical perspective: characteristics and indicators of academic drift, vocational drift and expansion of higher VET

Dimension	Academic drift (HE and VET)		Vocational drift (HE)/expansion of higher VET
Knowledge approach	Accentuation of theoretical and abstract knowledge, a gradual reduction in the emphasis attached to practical or experience-based knowledge; increased emphasis on the integration of professional and academic knowledge.	↔	Greater emphasis on the integration of professional and academic knowledge Strengthening the importance of professional experience
Pedagogical/didactical approach	Strengthening of theory-based reflection on practice and scientific research	↔	Increased practice orientation of traditional higher education programmes, including applied research Strengthening work-related learning within institutions (on-site labs, workshops, etc.) and work-based learning in companies (for conducting real business/industry projects, on-the-job training periods, apprenticeship-type schemes at higher levels)
Teacher-student relationship and background of teachers	Teachers more often have academic background (increasing importance of their scientific competence)	↔	Increasing emphasis on employing teachers with comprehensive work experience in addition to their academic degree
Learning sites	Classroom settings are increasingly used; however, there can be multiple learning sites	↔	Increasing use of work-related learning sites within institutions and of companies

Dimension	Academic drift (HE and VET)		Vocational drift (HE)/expansion of higher VET
Specificity of learning outcomes	In some cases, occupation/profession-specific (e.g., nurse, social worker, teacher), but also increasingly referring to broader vocational fields	↔	Increasingly focusing on specific occupations/professions

NB: ↔ indicates that, these drift processes tend to emphasise opposite aspects in relation to the respective dimensions (clear difference in focus can be observed).

Source: Cedefop.

2.5. Reflections on the literature analysis

The literature review has revealed many different theoretical explanations for academic and vocational drift tendencies and for the expansion of higher VET; it has helped to identify characteristics and indicators for these developments. However, the analysis also shows that these metaphors only partly explain developments in vocationally oriented education and training at higher levels. For example, whether certain developments are regarded as academic drift or vocational drift depends on the specific perspective from which these phenomena are observed. The upgrading of former VET institutions and programmes to higher education can be considered as academic drift; the same development can be regarded as vocational drift if considering these developments from the point of view of the higher education sector. It is not possible to link all developments relating to the strengthening or weakening of the vocational dimension in programmes and qualifications offered within the higher education sector with academic or vocational drift. Considering these limitations, these metaphors and their characteristics and indicators were used as a starting point to analyse relevant developments in European countries over the last two decades, without overstraining the attempt to categorise such developments as academic or vocational drift.

CHAPTER 3.

Main European development types and trends over the last two decades

This chapter first briefly explores the use of statistical data (available at European level) to study trends in vocationally oriented education and training at higher levels from 1995 to 2015. The core of this chapter is discussion of developments in academic and vocational drift and the expansion of higher VET in European countries, as discussed in literature and in the case study countries. We also use the multi-perspective model presented in the previous chapter to structure this discussion. However, to improve readability and avoid repetition, some key features or components are discussed together rather than in separate sections. We concentrate on those dimensions for which significant change processes have been observed over the last two decades (in particular in the case study countries).

3.1. Statistics on higher-level vocationally oriented education and training

Statistically, vocationally oriented education and training at higher levels can be defined, with reference to the international standard classification of education (ISCED), as at levels above ISCED97⁽¹⁹⁾ and ISCED11⁽²⁰⁾ level 3. Table 4 presents the programmes at the relevant ISCED levels and indicates the possible distinction based on the programme orientation.

⁽¹⁹⁾ ISCED approved by the UNESCO General Conference in November 1997.

⁽²⁰⁾ ISCED approved by the UNESCO General Conference in November 2011.

Table 4. Correspondence between ISCED97 and ISCED11

ISCED97	ISCED11	
Level 4: post-secondary non-tertiary education (general, pre-vocational, vocational)	Level 4: post-secondary non-tertiary education (general and vocational)	
Level 5: first stage of tertiary education <ul style="list-style-type: none"> • 5A: theoretically based/research preparatory/giving access to professions with high skills requirements; • 5B: practical/technical/occupationally specific 	Tertiary education (academic and professional)	Level 5: short-cycle tertiary education
		Level 6: bachelor or equivalent
		Level 7: master or equivalent
		Level 8: doctor or equivalent
Level 6: second stage of tertiary education		

Source: UNESCO, 1997; 2012.

The aim of this section is to show how enrolment and attainment in vocational education at higher levels varies between countries and has changed over time (as far as is possible from available data). Making comparisons across time is complicated by the move from ISCED97 to ISCED11 in compiling education statistics in the European Union. Data are generally available from the early 2000s to 2012 using ISCED97 and for 2013 to 2015 using ISCED11, so the capacity to provide a single time series from the early 2000s to the present day is limited. In most cases, data are more readily available for tertiary education (ISCED11, 5 to 8) than for non-tertiary education (ISCED11, 4). The statistics also do not allow a proper indication of the amount of vocationally oriented education and training that forms part of tertiary education, nor the amount of academic HE that includes workplace learning. Data on the extent to which courses or enrolments at the higher education level are vocational/professional or general/academic are not well developed for various reasons. In some respects, the distinction between vocational and academic may be artificial, especially at the tertiary level. Therefore, it is only possible to give an estimate of the percentage of activities at the higher level that might be considered vocational and only limited insights into developments over time (²¹).

Estimates of activities at the higher level that might be considered vocational are based on the numbers reported for vocational/professional courses at ISCED11 levels 4 to 7 (doctorates are excluded). EU figures are estimates based on summing the countries that provided data. For each ISCED11 level an estimate is provided of the extent to which all enrolments at that level are vocational. Two overall estimates are provided:

(²¹) Some additional information is available in the Annex.

- (a) based on ISCED11 levels 4-7 (level 6 is excluded because of missing data for this category);
- (b) based on ISCED11 level 4 and level 5 short-cycle (more data available for these levels).

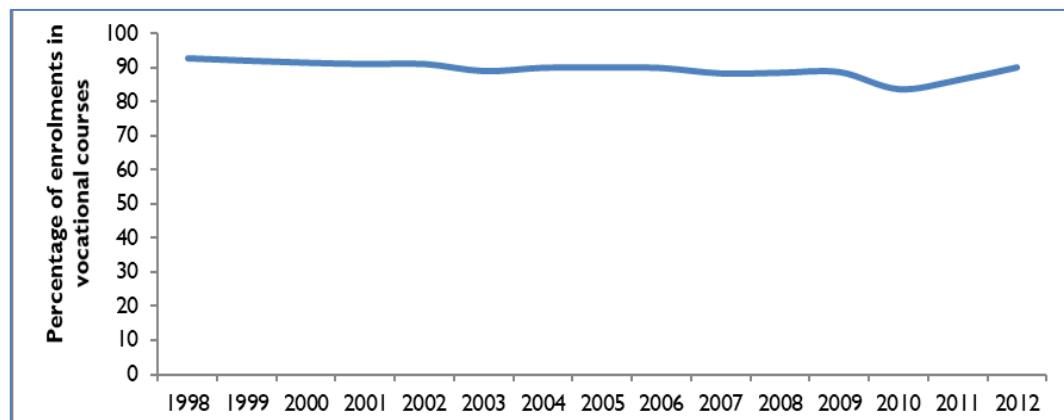
The first estimate indicates that around a fifth of all provision is vocational/professional in the EU. The second estimate indicates that if only ISCED11 level 4 and level 5 short-cycle are considered, the percentage that is vocational/professional is 94%. These are estimates and should be regarded as indicative rather than definitive. In the Directorate-General for Employment *Study on higher vocational education and training in the EU* (European Commission, 2016b) an estimation finds that around 20% of higher-level education provision is vocational or professional in the EU.

Substantial variation can be discerned from the relatively few countries that provide information: this covers around 61% of higher-level students engaged in vocational studies in Latvia, to 9% in the Czech Republic.

Historical data for the period from 1998 to 2012 provide a disaggregation of post-secondary non-tertiary education (ISCED97 level 4) by academic and vocational orientation. Figure 3 reveals that the orientation of education at this level is predominantly vocational and this has not changed much over time. From the data for 2012 it is apparent that there is not much variation between countries, with nearly all recording around 80 to 100% of students at post-secondary non-tertiary level pursuing vocational courses in 2012. The exceptions are:

- (a) the Czech Republic: 56%;
- (b) France: 63%;
- (c) Slovenia: 60%.

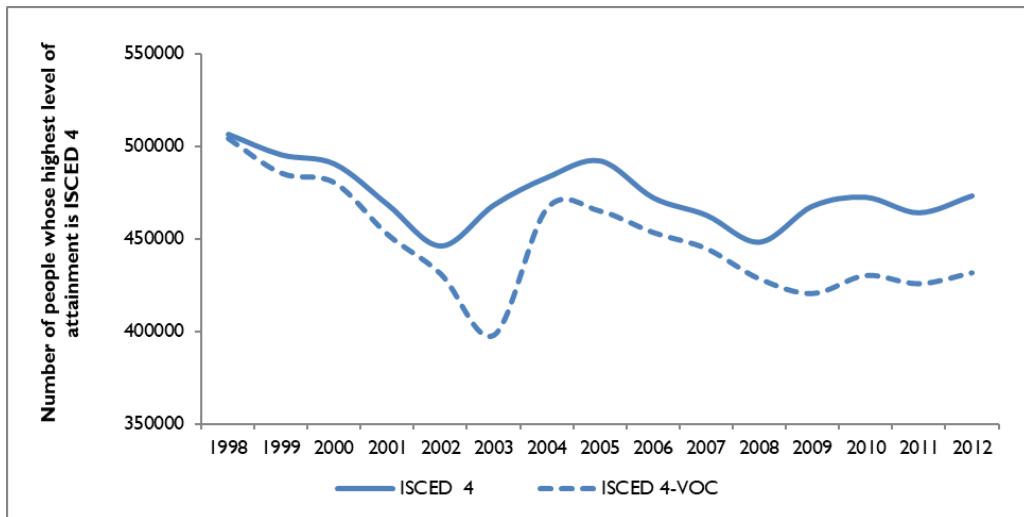
Figure 3. Orientation of education at post-secondary non-tertiary level (ISCED97 level 4) in the EU, 1998-2012



Source: Eurostat educ_ipart_s.

Figure 4 shows how levels of attainment in post-secondary non-tertiary attainment have changed over the recent past. It reveals that levels have not changed much over time and that most of those concerned have a vocational qualification.

Figure 4. **Levels of attainment in post-secondary non-tertiary education (ISCED97 level 4), 1998 to 2012**

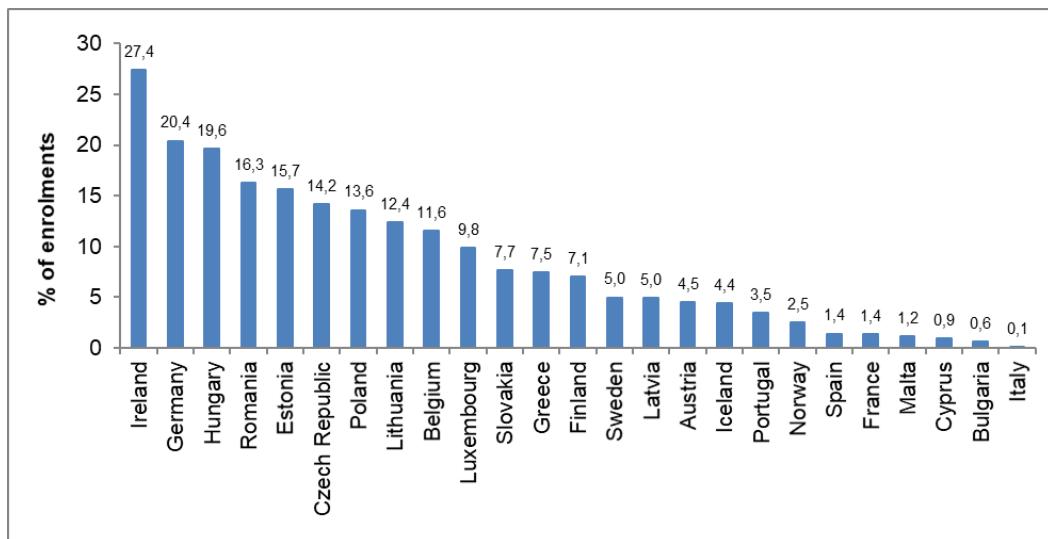


NB: Data for Croatia, Cyprus and the UK not included.

Source: Eurostat educ_grad2 plus own calculations.

Figures 5 and 6 show the extent to which individuals enrol in various forms of post-secondary and tertiary education. The figures reveal that there is substantial variation in enrolment rates which are likely to reflect the differing education structures across Europe. Figure 5 gives enrolments in post-secondary education as a percentage of all enrolments at ISCED11 levels 4 to 8. It reveals substantial variation across the EU: from just over a quarter of individuals enrolled in this form of education in Ireland, to virtually none in Italy. Figure 6 shows enrolments in short-cycle tertiary education as a percentage of all tertiary education enrolments (ISCED11 levels 5 to 8). Again, substantial variation across Europe is observed from around a fifth of all tertiary level enrolments being accounted for by short-cycle provision in France, to a negligible amount in Germany.

Figure 5. Enrolment in post-secondary education by country, 2015 (as a percentage of all enrolments in post-secondary and tertiary education)

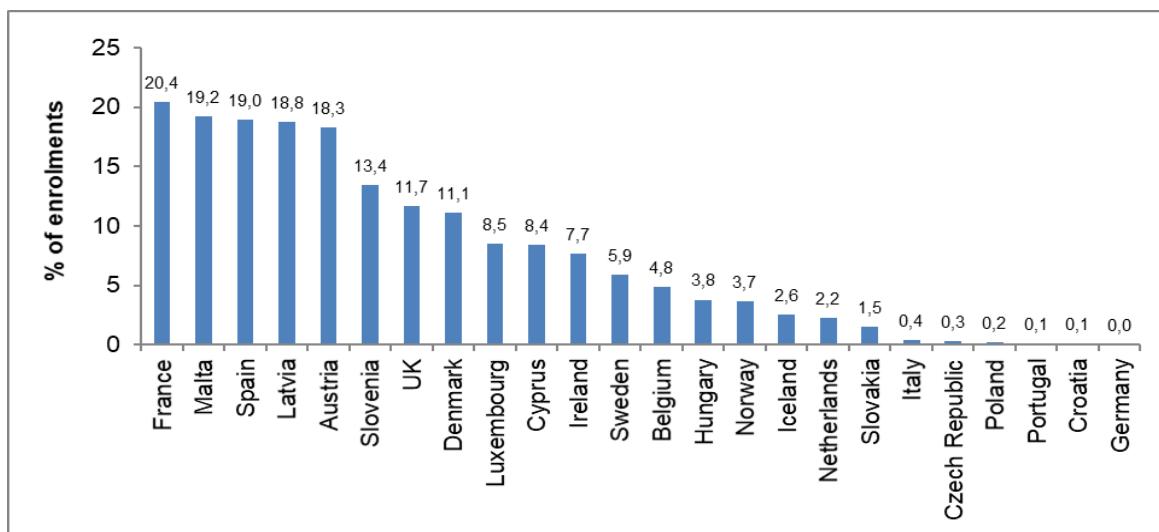


Base: All in post-secondary and tertiary education.

NB: Data for post-secondary non-tertiary education are missing for DK, HR, NL SL, and the UK. In the denominator, where data are not available for enrolments in short-cycle tertiary, a value of 0 has been assumed. This affects the denominator for BG, EE, EL, LT, RO, and FI.

Source: UOE database – educ_uoe_enra01.

Figure 6. Enrolments in short-cycle tertiary education by country, 2015 (as a percentage of all enrolments in tertiary education)



Base: All in tertiary education.

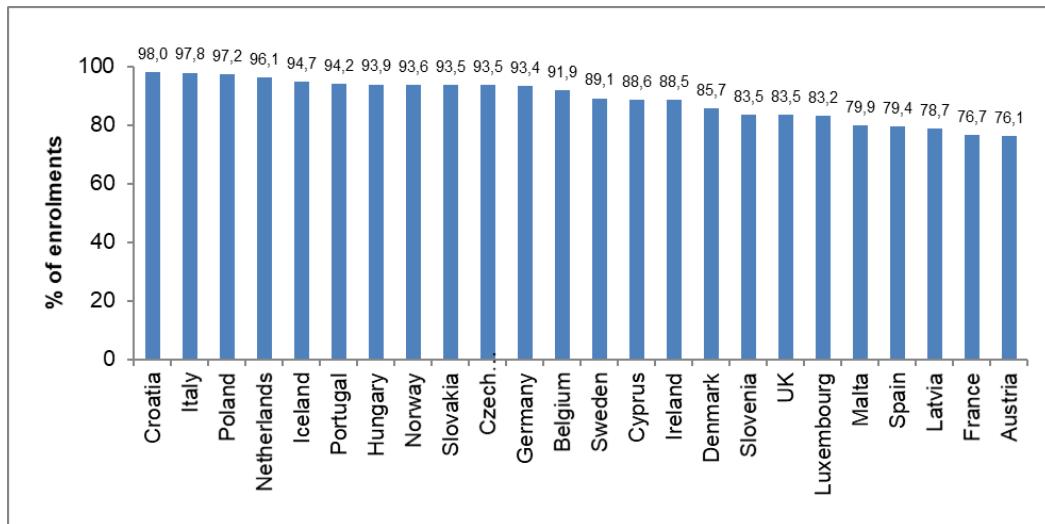
NB: Data are missing for several countries.

Source: UOE database – educ_uoe_enra01.

The largest share of enrolments at tertiary level is accounted for by those enrolled in bachelor and master programmes, but even here there is variation from around nearly all enrolments at this level in Croatia, to around three quarters

in Austria. Several factors may affect the distributions provided in Figures 5 to 7. Perhaps the most important message to be taken from the data is the variation in enrolments rates: talking about post-secondary and tertiary education in Europe is covering heterogeneous behaviour across countries.

**Figure 7. Enrolments in bachelor and master tertiary education by country, 2015
 (as a percentage of all enrolments in tertiary education)**



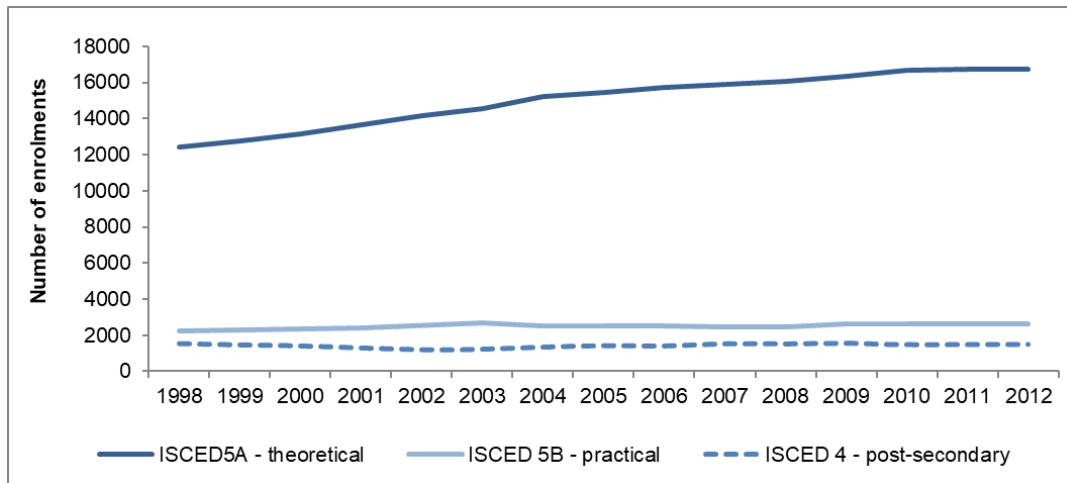
Base: All in tertiary education.

NB: Data are missing for several countries.

Source: UOE database – educ_ue_enra01.

The shift from ISCED97 to ISCED11 education level classification causes a break in the statistical series of interest, so attention is focused on the period up to 2012 using ISCED97. Figure 8 shows changes in the number of people enrolling in post-secondary non-tertiary education and in first stage tertiary education classified as theoretical (ISCED97 level 5a) and as practical (ISCED97 level 5b). The figure shows that there was sustained growth at ISCED97 level 5a but less obviously so at ISCED97 levels 4 or 5b. This can be seen more clearly from Table 5 which shows the overall and annual percentage growth rates in each type of education. It reveals that growth at ISCED97 level 5a was particularly strong over 1998 to 2005 and even thereafter still shows strong growth relative to ISCED97 levels 4 and 5b. Over the entire period from 1998 to 2012, enrolments in education at ISCED97 level 5a grew at a rate of around 2.2% a year, compared with 1.1% for ISCED97 level 5b and -0.2% for ISCED97 level 4. The result is that the number of enrolments for ISCED97 level 5a grew by 35% over the period from 1998 to 2012, much more than for either ISCED97 levels 5b or 4.

Figure 8. Enrolments at ISCED97 levels 4, 5a and 5b in the EU-27, 1998 to 2012



Source: Eurostat educ_enrl1tl.

Table 5. Growth rates in enrolments at ISCED97 levels 4, 5a, and 5b in the EU-27, 1998 to 2012

ISCED97 level	Overall percentage change			Annual percentage change		
	1998-2005	2005-12	1998-2012	1998-2005	2005-12	1998-2012
5A	24.7	8.3	35.0	3.2	1.1	2.2
5B	12.7	3.5	16.6	1.7	0.5	1.1
4	-6.8	4.6	-2.5	-1.0	0.6	-0.2

Source: Eurostat educ_enrl1tl.

These statistics give an insight into changes in the provision of higher-level vocational education. However, relevant data are limited and, according to Hippach-Schneider et al. (2017), statistical data based on ISCED provide either an oversimplified or erroneous picture. Changes to the classification used for ISCED11 compared with ISCED97 result in a completely different picture of provision in individual countries, even when nothing has changed. Without a robust statistical understanding of the provision of vocationally oriented education and training at higher levels, it is difficult to make comparisons across countries with respect to enrolment or attainment numbers.

However, from the available data it can be concluded that the focus of education on ISCED97/11 level 4 (post-secondary non-tertiary education) is predominantly vocational and shows few differences between countries; the situation is less clear and quite different between countries when looking at the higher ISCED 97/11 levels.

The following sections look into change processes in the EU, particularly the case study countries, to shed light on to developments that cannot be derived from available European statistical data.

3.2. Education system perspective

3.2.1. Education system segment/level and institutional landscape

According to Bathmaker, the development and expansion of post-secondary higher vocational education ‘forms part of an overall expansion of tertiary education that has occurred across the Western world since the late twentieth century (Brown et al., 1997), and increasingly across other countries at the start of the 21st century’ (Bathmaker, 2017, p. 3).

In higher education, a non-university sector has emerged in various European countries since the 1960s supporting clearly marked inter-institutional diversification (Teichler, 2008). In the 1990s, several countries introduced a separate strand of higher education (as non-university higher education subsector) or added new vocationally or professionally oriented higher-level degree programmes (professional HE) to their offers ⁽²²⁾. In some cases, this is based on upgrading vocational education and training (VET) institutions. In some countries, such as Poland, this development is also linked to growth in private higher education institutions (HEIs), which mostly offer vocationally oriented programmes. These developments also became noticeable in education statistics as an increase in the number of higher education students ⁽²³⁾. Different policies supported this development: increasing emphasis on labour market demand or attempts to widen access to higher education programmes. However, countries have taken different approaches and these developments lead to different higher education models in Europe ⁽²⁴⁾:

⁽²²⁾ However, identifying ‘academic institutions with highly theoretical courses and professionally oriented institutions and programmes with practical skills development or training means to disregard the fact that the comprehensive universities have offered and continue to offer vocational training such as for prospective physicians, dentists, veterinary surgeons and architects, which are all professionals in their own right’ (Delplace, 2013, p. 33).

⁽²³⁾ The report *2015 trends* published by the European University Association (Sursock, 2015) also observes a shift in students’ interests towards professional degrees.

⁽²⁴⁾ Based on Kyvik, 2009 and Camilleri et al., 2014. Kyvik (2009) distinguishes also the dual system and the stratified system. The latter is mainly a characteristic of the American system and is, therefore, not described. A dual system is considered a pre-formalised version of a binary system, and most European countries have already

- (a) university-dominated system: the provision of higher education is exclusively reserved for universities. This model is now rare. Italy may be said still to have a university-dominated system, since the introduction of vocationally oriented education and training at higher levels started only recently (Kyvik, 2009, p. 8);
- (b) binary system: in which, there are two separate strands of higher education, whereby academic HE is provided by universities and professional higher education is often provided by specialised institutions (such as universities of applied sciences or university colleges) ⁽²⁵⁾. A binary structure can be observed in Austria, Belgium, Croatia, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Ireland, Latvia, Lithuania, Malta, the Netherlands, Norway, Portugal, Slovak Republic, and Sweden. The binary structure, however, has variations: in Finland and Austria, there are clear dividing lines between the subsystems, while Sweden belongs to those countries where the dividing lines have become vague either in legislation and/or in practice. Dividing lines of different types can also be observed in Belgium-Flanders, Denmark, Germany, France and the Netherlands (Huisman and Kaiser, 2001), while Norway is moving towards a unified system.
- (c) unified system: 'in unified systems, the vast majority of higher education programmes – traditional academic studies as well as vocational programmes – are offered within universities' (Kyvik, 2009, p. 10). This classification applies to Iceland, Spain and the UK. The UK is of particular interest because a development towards a binary system started in 1965 but the distinction between universities and polytechnics was abolished in 1992. The transition to a unified model took place during the time when many other European countries started to introduce binary structures.

taken steps towards the binary system. Camilleri et al. (2014, p. 24) do not distinguish between dual and binary systems and use the terms synonymously.

⁽²⁵⁾ Some countries, such as Lithuania, use the term 'university of applied science' to paraphrase their own denominations in an international context, but never at home, as their own legislation exclusively reserves the term university for a research institution. The same holds true for countries such as Portugal (where the native term is *polytechnico*) and Ireland (where the native term is institute of technology). In both countries, universities of applied sciences (UAS) is considered a suitable translation in an international context. Others, such as Denmark and Belgium (mainly Flanders), continue to use the term 'university college', as the term 'applied sciences' seems to exclude the human sciences (except for economics) and also the schools of arts. Croatia appears to adopt a middle-of-the-road solution by choosing the term 'university colleges of applied sciences' (Camilleri et al., 2014, p. 14).

Some countries cannot clearly be placed within one of these categories. The French and Slovenian higher education systems are sometimes classified as partial unitary systems, where professional HE is provided within specialised institutions located within universities (Camilleri et al., 2014, p. 24). The French higher education system is also described as fragmented or multi-type (Kyvik, 2009, p. 11). Camilleri et al. introduce the category ‘mixed higher education system’: ‘mixed systems do not make a clear-cut distinction between universities and other institutions (i.e., universities may offer PHE or PHE institutions may offer academic education as in Poland)’ (Camilleri et al., 2014, p. 9).

This classification of higher education systems is closely linked to the type of higher institutions in place and the change processes in relation to HEIs that can be observed. Numerous countries are displaying a tendency to enlarge the higher education sector in overall terms by reclassifying vocationally oriented programmes or the institutions which offer such provision as part of the higher education system (institutional upgrading). Several countries established universities of applied sciences (UAS) or similar institutions to promote vocationally oriented education and training to the same degree as conventional academic programmes: this is the case in the binary systems in the higher education area presented above). UAS are described as belonging to a subsector which pursues the objectives of combining VET and applied research, supporting regional developments and promoting relationships with trade and industry (Machado et al., 2008). Establishing UAS or other non-university institutions for higher education leads to interinstitutional diversity in the area (Teichler, 2008). However, according to Camilleri et al. (2014) the professional HE sector is still in flux and has not achieved the same level of integration into the higher education area. They notice lack of consensus on the characteristics of professional HE, which limits overarching attempts to strengthen this sector at European level.

Tendencies to merge HEIs can be also observed during the last two decades. In the early 1990s, for example, polytechnics in the UK were upgraded and integrated into the university system (Cedefop, 2011); since then, all HEIs enjoy university status. In the Czech Republic, Poland and Romania, higher education underwent fundamental reform after 1990. These countries introduced a two-part higher education system in which vocational schools were upgraded to HEIs or institutes were unified and accorded a new function as a single institute of higher education. Countries such as Finland, France, Ireland, Norway and the UK are also showing a propensity to merge HEIs, with a view to gaining greater strength and visibility in terms of international competition. In Ireland, for example, the aim is to reduce the number of HEIs and give institutes of

technology the opportunity to merge and attain the status of a technological university (Hippach-Schneider and Schneider, 2016; Hippach-Schneider, 2017).

There is relatively little literature available on higher VET, which makes it quite difficult to draw a comprehensive and meaningful picture of this area based on desk research alone. For several qualifications or programmes across countries, it is difficult to judge whether they form part of higher education or not.

The *Study on higher vocational education and training in the EU* (European Commission, 2016b) has identified three key qualification and programme types in this area (²⁶):

- (a) post-secondary level VET, offered outside higher education; most of these qualifications are linked to EQF level 5, some to EQF level 6. These programmes might build on secondary general education and offer the acquisition of vocational competences to complement the previous education. Others aim at upskilling holders of VET qualifications linked to lower levels. For example, they offer job-related knowledge and skills and further technical specialisation to graduates of VET programmes at secondary level to prepare them for jobs in middle-to-upper management, as skilled specialists or to enhance their prospects of progression to other studies (such as in higher education). Such types of qualification are offered in Bulgaria, the Czech Republic, Germany, Estonia, Ireland, Greece, Italy, Cyprus, Hungary, Austria, Romania, Slovenia, Slovakia and Sweden;
- (b) higher-level continuing VET (CVET) offered within or outside the formal education system (usually after entry into working life); qualification here often gives access to nationally recognised qualifications but the target is adult learners; qualifications are often based on professional experience and examinations (competence tests). They include master craftsperson qualifications linked to EQF level 5 (in France, Hungary, Luxembourg) or level 6 (such as in Austria or Germany) or that have yet to be levelled (such as in Norway). Some are linked to licensed professions, where successful completion of the exam is legally required to work in the profession, to run a small business or also to train apprentices. Master craftsperson qualifications usually build on trade or journeyman's certificates. There are also other vocational/professional/occupational qualifications based on

(²⁶) There is an overlap with the area of continuing VET analysed in the sub-project on VET and lifelong learning (Cedefop, 2018b): continuing VET is understood differently in European countries and might be offered at both lower and higher levels. The latter would belong to the area of higher VET. There is no clear separation between continuing VET and higher VET. For a discussion on the distinction between formal and non-formal education and training see Cedefop, 2018b.

- competence tests and/or validation of non-formal and informal learning but they are not considered master craftsman qualifications: examples are *ingenieur* qualifications in Austria, professional qualifications in Belgium-Flanders, vocational qualifications in the Czech Republic, occupational qualifications in Estonia, specialist vocational qualifications in Finland, and national vocational qualifications in the UK);
- (c) higher-level CVET provided outside the formal education system (by adult education centres, public employment services or private companies), which do not fall into the above categories. In Ireland, for example, second chance and adult learning programmes provide qualifications up to EQF level 5. Most of these have been installed into the system to support unemployment through upskilling and reskilling, as well as to reach early school leavers. In the Netherlands, some non-regulated professional/vocational oriented qualifications offered by private providers or by branch/sector organisations are linked to NQF levels 5 to 7.

Although there is no clear statistical evidence, there are some indications that, during the past 20 years, countries have increasingly offered higher VET. Sweden introduced higher vocational education at post-secondary level in 2001, offering two awards: higher vocational education diploma (EQF level 5) and advanced higher vocational education diploma (EQF level 6). Norway also established vocational college education (offering qualifications linked to EQF level 5) as part of the tertiary sector in 2003. The VET certificate level 5 (EQF level 5) in Estonia was introduced in 2012 and the post-secondary certificates and diplomas (linked to EQF level 5) in Cyprus in 2013.

The OECD pointed out (2014a) that, although higher VET is smaller in scale in some countries, it is growing rapidly: examples mentioned include Romania and Sweden, and this area is also growing in Greece.

Box 1. Increasing interest in higher vocational education in Sweden

Higher vocational education in Sweden is post-secondary education that combines theoretical and practical studies in cooperation with employers and industry. Programmes are offered in specific fields where there is explicit demand for competence. Every year the Swedish National Agency for Higher Vocational Education publishes statistics on their programmes, students and students' work situations one year after graduation. In 2013, 42 500 students were enrolled in higher vocational education programmes compared to 357 000 students in the higher education system. Figures from 2013 show how the interest in higher vocational education programmes has increased among education providers, labour market and potential students. Between 2010 and 2013, applications per study place had increased by 25%, although the number of study places had only increased by 4%.

The most popular programmes (number of applications per study place) were in transport services, healthcare, nursing and social care. The number of funded programmes and study places has been further increased in recent years.

Source: Myndigheten för yrkeshögskola, 2018; Cedefop news, 9.2.2018.

Box 2. Growing enrolment figures in higher VET in Greece

Recent efforts to upgrade post-secondary VET programmes offered by public vocational training institutes (IEK) in Greece have led to increased enrolment in the first semester of 2017/18. This increase is credited to an improved link between IEK programmes and the labour market, and to a new VET upgrading scheme. Students who had successfully completed the new up-to-date IEK specialisations had, for the first time in autumn 2017, the opportunity to participate in practical and theoretical vocational training certification examinations, conducted under the jurisdiction of the National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP). As a result, 10 232 IEK graduates (79% in new specialisations) took part in certification exams to gain an upper secondary VET certificate and an EQF level 5 occupational specialisation diploma.

NB: The number of applicants in the first semester of 2017/18 was 22 000, with enrolled students reaching 20 000, an increase of more than 3 000.

Source: Cedefop news, 26.1.2018.

EQF level 5 is of particular interest in this context, as the examples above show. Short-cycle tertiary education qualifications, which are aligned to EQF level 5 or ISCED11 level 5, are sometimes considered part of the higher education sector and are sometimes assigned to the field of VET outside of higher education (higher VET). In some cases there is cooperation but an institutional divide between higher education and VET institutions persists in many countries, with few links between the two (Høst et al., 2017, for Norway; BEEHiVES, 2015a, for the Czech Republic). This divide was also emphasised by Cedefop (*Cedefop news*, 2.11.2016), arguing they often exist as parallel universes that could be enriched by greater cooperation and convergence. However, at EQF level 5, the qualifications often seem to have a double function. The primary functions are to facilitate access to the labour market and to improve continuing training opportunities for those who have completed VET and are already in employment (Cedefop, 2014). VET qualifications at EQF level 5 from within and outside higher education are increasingly emerging across Europe. A previous study focusing on higher VET (European Commission, 2016b) analysed the specificities of such programmes or qualifications identified in EU Member States and found that more than one third (22 of 63) have been introduced in the last 10 years. Most of these recently introduced types of programmes/qualifications (19 out of 22) are offered at EQF level 5.

It can be concluded from this that most European countries have developed a binary higher education system. However, there seems significant variation between countries with respect to the relationship between the two strands and also regarding the landscape of higher VET. This can be illustrated by a closer look at the situation in selected case study countries.

The higher education systems in Austria, Estonia, Finland, Germany, the Netherlands and Norway are classified as binary systems. Finland and Austria have very clear dividing lines between the two strands of higher education (Huisman and Kaiser, 2001) and established UAS (professional HE: *Fachhochschulen* in Austria and *ammattikorkeakoulu* in Finland) around the same time in the early 1990s. This was done in Finland largely by upgrading post-secondary vocational colleges (academic drift of VET), but in Austria this was limited (such as registered nursing, training of primary and general lower secondary teachers and social work)⁽²⁷⁾ and UAS were mainly established as a new type of higher education (vocational drift within higher education) (Lassnigg, 2011, p. 19). Austrian UAS aim to provide professionally oriented higher education to enable graduates to solve vocational tasks based on scientific knowledge (Haberfellner and Sturm, 2014, p. 30); according to the law, they 'shall offer degree programmes at university level, providing a scientifically rigorous professional education' (Republik Österreich, 1993). UAS focus on vocational preparation of young academics; their profile is thus different from academic universities and they can provide research infrastructure to a lesser extent. However, the distinction is sometimes blurry, as education and training in traditional professions, such as medical education, is located at universities and study programmes at technical universities are often close to applied sciences (Haberfellner and Sturm, 2014). During the past 20 years, different aspects of vocational and academic drift have been observed: the vocational aspect of UAS was strengthened by the introduction of dual studies in 2000 (based on the example from Germany, see further below); and attempts to achieve more academic standing expressed by trying to extend study programmes to doctoral grades, putting stronger emphasis on scientific research in their curricula or aiming to bring their junior researchers into scientific structures (Sterrer et al., 2015).

⁽²⁷⁾ While teachers are trained at specific university colleges of teacher education, registered nursing and social work was transferred to UAS programmes. For these fields, the transfer to higher education does not only represent an institutional change but also a much stronger implementation of basic research (Haberfellner and Sturm, 2014, p. 76).

Another difference can be seen in enrolment numbers: the number of students in at UAS in Finland is nearly as high as those in programmes at universities, while the share of UAS students of all higher education students in Austria is below 20%. These differences can be explained by looking at the landscape of higher VET in these countries. While the number of students enrolled in programmes leading to Finnish specialist vocational qualifications (EQF level 5) is about one fifth of those enrolled in bachelor programmes at UAS (professional HE), the number of students enrolled in Austrian VET colleges (higher VET, Box 3) is nearly twice that for students enrolled in UAS programmes (professional HE) ⁽²⁸⁾.

Box 3. Austrian colleges for higher vocational education

Colleges for higher vocational education (VET colleges) have been discussed as a major influence on the development of VET at higher levels in Austria. Reflecting French educational ideals (based on full-time school-based VET) from the 19th century, VET colleges were institutionalised in the 1960s and have been growing strongly since the late 1970s, supported by social-democratic education policies (Graf, 2015, p. 5). Having the status of hybrid qualifications incorporating both vocational and academic education (Graf, 2013), they provide a professional qualification (diploma) and a higher education entrance certificate. They became an important pathway for young people with low-educated family background to higher forms of education.

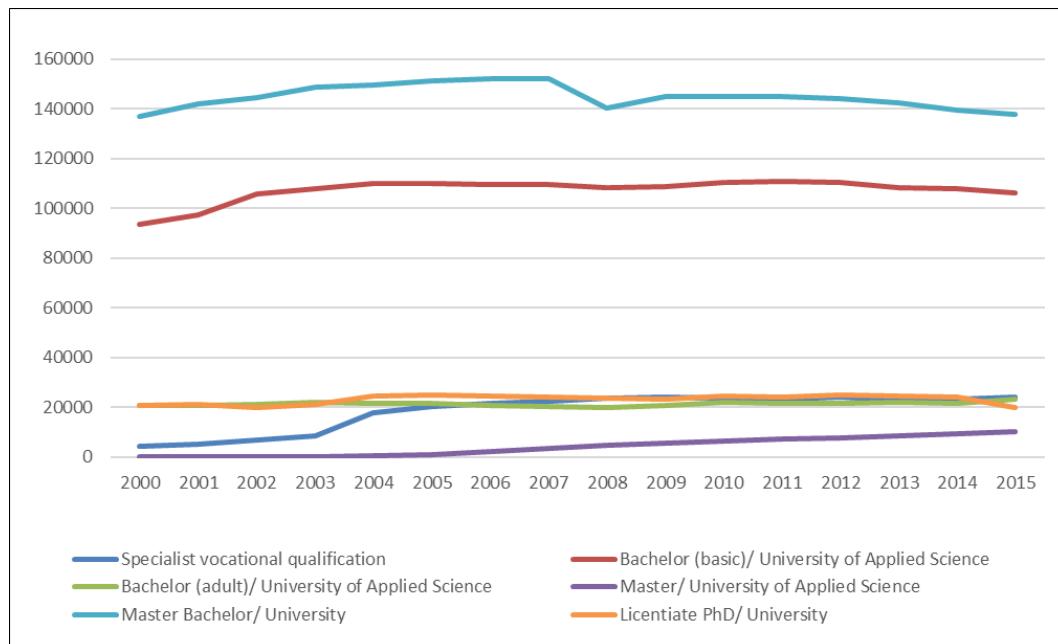
At the same time, their role within education structures reinforced the divide between vocational and academic education. As higher VET was covered anyway by these upper secondary schools, universities could insist on their role as academic elite institutions (Haberfellner and Sturm, 2014, p. 66). Although basically having the option of accessing higher education, take-up rates among graduates of VET colleges are still lower than among graduates from academic schools; this is also due to their stronger orientation to the labour market. Beyond that, their study choices tend to stay monothematic, mainly continuing their former fields and disregarding other, more academic, study fields (Haberfellner and Sturm, 2014, p. 67). While several UAS accredit parts of the colleges' learning outcomes to their programmes (and thereby shorten their studies for VET college graduates), universities (and even some UAS) are still reluctant to accredit (parts of) learning outcomes from VET colleges.

Source: Austria case study.

Figures 9 and 10 present the available data on enrolment of students in vocationally oriented education and training programmes at higher levels during the past 20 years for Finland and Austria.

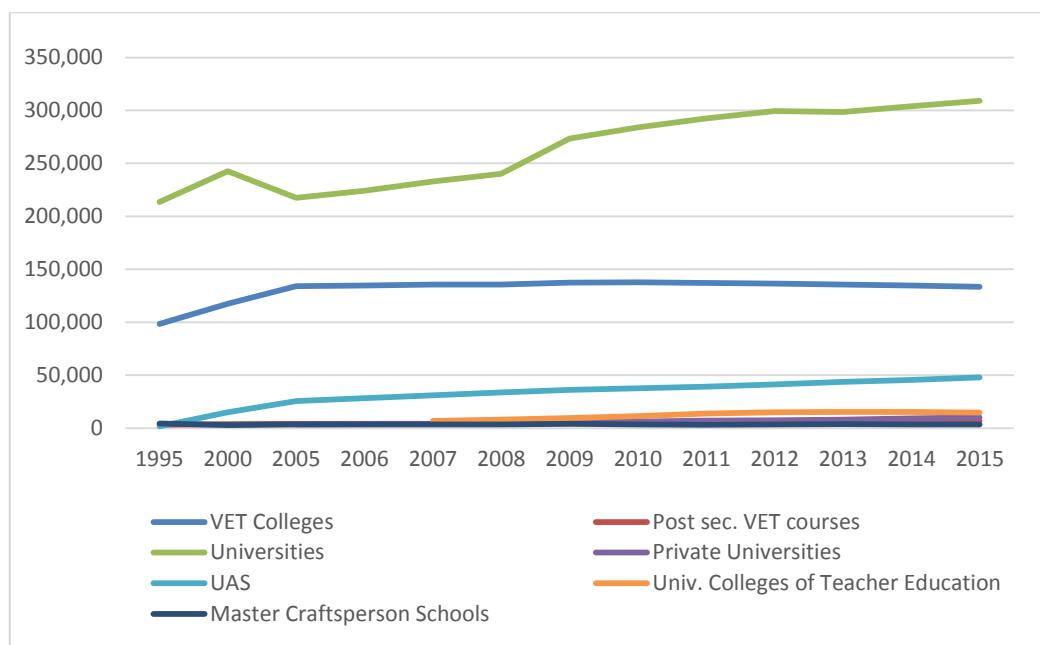
⁽²⁸⁾ In Austria there is also a wide variety of other VET offers at higher levels that are expected to gain increasing visibility through the implementation of the NQF.

Figure 9. Students enrolled in all higher degrees in Finland (2000-15)



Source: Finland case study.

Figure 10. Students enrolled in main vocationally oriented education and training programmes at higher levels and in university programmes in Austria (1995-2015)



Source: Austria case study.

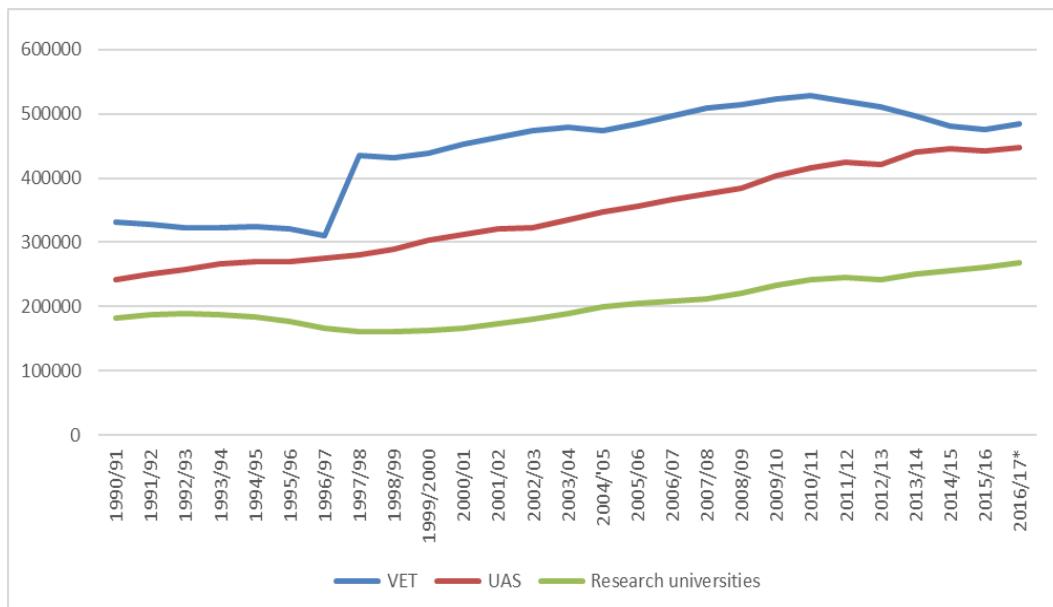
The UAS reform in Finland has been multidimensional and has affected the content of all degrees. New degrees were also introduced through the reform.

That was partly due to the process of homogenising the Finnish education system. For instance, the Finnish national broadcasting company Yle was educating media personnel in its own school. That school was closed and new media degrees were established at two upper secondary colleges which were later transformed into UAS. Later, similar degrees were launched in several UAS. In a similar process UAS have absorbed previously private post-secondary colleges and incorporated their degrees with new UAS degrees.

In the Netherlands, the title UAS has been used since 2006/07 for *Hoger beroepsonderwijs (hbo)* (professional HE). The historical roots of *hbo* can be traced back over many years (²⁹), but their tertiary education history dates to the 1960s, when colleges for higher professional education were brought under the same legal framework as universities (de Weert and Leijnse, 2010). In 1986, they were legally acknowledged as a higher education subsector alongside the university sector. This was further formalised in the 1993 Comprehensive higher education and research Act. In 2002, *hbo* bachelor programmes were introduced and UAS now also offer master programmes; PhD programmes are at the moment only offered at universities (there are UAS that have PhDs, but these work under supervision of the universities). In 2006, the associate degree (short-cycle higher education, SCHE) was introduced as part of a *hbo* bachelor programme; from 2018 onwards, it will be considered a self-standing qualification (Ministerie van OCW, 2017). Its introduction can be considered both as academic drift (in terms of improved progression routes) and as vocational drift (it is closely linked to labour market needs). Outside higher education, non-regulated qualifications are currently offered at NLQF levels 5 to 7 (higher VET). These professionally or vocationally oriented qualifications are offered by private providers or by branch/sector organisations. So far, they are few in number (though there is no record of the number of learners enrolled on programmes preparing for these qualifications) but – similar to Austria – the higher VET qualifications might gain further visibility with the continuing implementation of the NQF. Currently, it is more interesting to compare enrolment numbers in UAS programmes with those in research universities or secondary-level VET programmes (*middelbaar beroepsonderwijs, mbo*; they offer qualifications up to EQF level 4), as presented in Figure 11. It can be clearly seen that the UAS have the higher share of all higher education students and that they have almost the same numbers as *mbo* programmes.

(²⁹) Van Bemmel (2006) mentions 1682 as the start of the first art academy (which would be UAS now). An important year is 1963 and the introduction of the Law on secondary education. The education that would be referred to now as UAS is brought under government financing.

Figure 11. Student numbers in secondary-level VET, UAS and research universities in the Netherlands



Source: The Netherlands case study.

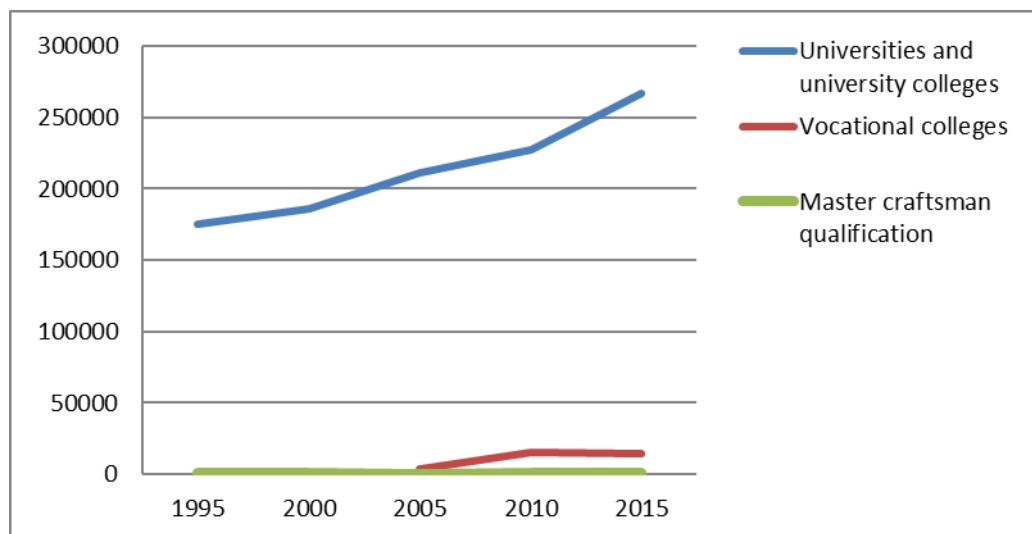
Norway is another country with a binary higher education system but with developments towards a unified system. University colleges (professional HE) have existed since before 1990. The last decade has seen large institutional changes, where university colleges have become universities, have merged with one another or merged with existing universities. Both universities and university colleges are regulated by the relevant 2005 Act. These restructuring processes have fundamentally transformed higher education and the binary system is considered to be breaking down (Kyvik, 2016, p. 169) ⁽³⁰⁾. Professional HE qualifications, mostly at EQF level 6, but some at EQF level 7, have traditionally been offered by university colleges. These qualifications include nursing, teacher, engineering qualifications and various others. Due to the current restructuring and merging of higher education, such professional HE programmes are increasingly offered by universities, although often at the college campuses and with the same college staff. In 2016, there were about 100 000 students in university colleges and 173 000 in universities or specialised university institutions (including more general programmes) (Statistics Norway, 2017). Since there is no clear distinction between academic and vocational qualifications

⁽³⁰⁾ Kyvik (2016) sees academic drift in the college sector as the most powerful driving force in breaking down the binary system and bringing the two sectors, universities and university colleges, closer together.

and programmes at higher education levels, and no clear distinction based on the type of HEI, it is not possible to indicate the number of learners enrolled in professionally oriented higher education programmes.

Outside academic and professional HE, vocational colleges offer qualifications at EQF level 5; they were established as part of the tertiary sector in 2003. A tendency towards academic drift can be observed through institutional changes and through establishment of higher education programmes (EQF 6) within vocational colleges; this has led to a less clear distinction between vocational colleges and higher education (Bakken, 2014). There are also post-secondary vocational qualifications (*Mesterbrev* qualification is the most important of such qualifications, established in 1987) which are not (yet) part of the NQF or linked to a particular EQF level. As can be seen in Figure 12, the number of learners enrolled in vocational colleges or the number of master craftsman qualifications granted is low; separate numbers for students enrolled in universities and university colleges are not available.

Figure 12. Students enrolled in universities, university colleges and vocational colleges (1995-2015) and master craftsman qualifications granted (Norway)



NB: The graph for master craftsman qualifications shows the number of master craftsman qualifications granted in 1995 (487), 2000 (787), 2005 (406), 2010 (562), and 2015 (566).

Source: Statistics Norway (SSB), NSD-DBH-fagskoler, master craftsman committee.

Professional HE has a quite long tradition in Germany, with UAS in place since 1970/71. The UAS share of all higher education students is growing (³¹)

⁽³¹⁾ In 2015 42% of all new higher education students went to Universities of applied sciences (Authoring Group Educational Reporting, 2016, p. 127).

but, at 34% in 2016/17, is still lower than in university programmes. Dual study programmes were introduced at UAS in 1974. The most common format of dual study programmes is the acquisition of a bachelor degree and an initial VET (IVET) qualification. In 2012, 3.4% of all higher education students were enrolled in these programmes and the numbers are increasing.

Higher VET plays quite an important role, although the enrolment numbers are slightly declining: advanced vocational qualifications are offered (EQF levels 5-7, such as master craftsperson or technician qualifications) as well as vocational qualifications obtained in trade and technical schools. These qualifications are highly respected in Germany and attract substantial social acceptance and good levels of pay, making them very attractive (Edeling and Pilz, 2017). Holders of *Meister* (master craftsperson) and *Fachwirte* (specialist) qualifications with work experience are now able to take up a course of study at a German university without holding the higher education entrance certificate (*Abitur*); increasing numbers are making use of this opportunity. Between 2011 and 2014, the number of university students admitted by this route doubled to more than 50 000 (CHE, 2016) ⁽³²⁾. In Germany it is also expected that these higher VET qualifications will gain increasing visibility through the NQF.

In Estonia, changes in the immediate post-socialist period had a major impact on the situation in higher education. Between 1989 and 1991, professional HE was established at several former specialised secondary schools, under pressure from economic and political insecurity; it was modelled on German *Fachhochschulen*. In 2001 a reform of degree structures was adopted in accordance with the Bologna Process. Diplomas of professional HE (*rakenduskõrghariduse diplom*), bachelor level degrees providing access to employment in a particular profession and to master programmes, can be offered by universities or professional HEIs (*rakenduskõrgkool*):

- (a) universities provide professional HE, bachelor, master and doctoral programmes.
- (b) professional HEIs and some vocational education institutions provide professional HE. A professional HEI may also provide master programmes.

⁽³²⁾ A resolution adopted by the Standing Conference of the Ministers for Education and Cultural Affairs of the *Länder* in 2009 includes recommendations for easier access to university programmes without holding the higher education entrance certificate; all federal States committed themselves to implementing this. However, the share of these students in higher education is still only 1.85% in 2015 (Nickel and Schulz, 2017, p. 5).

Over recent years, the number of students in higher education has decreased from nearly 70 000 in 2009/10 to just below 60 000 in 2013/14 (³³). This is a result of demographic changes and the reduced number of students admitted to the places not financed from the State budget. The share of students in professional HE is around one third of all higher education students and has also fallen slightly during this period, from around 32% to around 30%.

A new type of programme was launched in 2013, leading to the VET certificate, level 5 (5. taseme kutseõppõ lõputunnistus) linked to EQF level 5 (higher VET). Such programmes prepare learners for technical and associate professional occupations and are provided by VET schools or, in some cases, by professional HEIs. In 2014/15, around 1 100 students were enrolled in these programmes. Another type of qualification has been offered outside the formal education system in Estonia since 2008, the occupational qualifications (*kutsekvalifikatsioon*).

Box 4. Estonian occupational qualifications system

The occupational qualifications system forms a part of the Estonian qualifications system that links lifelong learning and the labour market. Occupational qualifications are associated with a trade, occupation or profession. They are linked to EQF levels 2 to 8: at EQF levels 6 to 8, they require mostly higher education qualifications as a basis. Competences and activities related to specific occupations are defined in occupational qualification standards (^a), which are also a basis for study programmes and curricula. Occupational qualifications are stand-alone and can be acquired via an education programme as well as via validation of non-formal and informal learning. According to the Professions Act of 2008, both VET and HEIs, which have curricula based on professional standards and are accredited against quality standards, could apply to become awarding bodies for occupational qualifications. The validation process varies from one profession to another but might include elements of reviewing educational qualifications, in-service training, further training, passing examination, interview, and providing a letter of recommendation from the employer. An occupational qualification certificate is mandatory to work in some occupations, but it is not always the case. As of summer 2016, 110 156 occupational qualification certificates have been issued by the awarding bodies (^b).

(^a) Estonian Qualifications Authority: Sihtasutus Kutsekoda: *Occupational qualification standards* https://www.kutsekoda.ee/en/kutsesysteem/tutvustus/kutsestandardid_eng

(^b) Estonian Qualifications Authority: Sihtasutus Kutsekoda: *State register of occupational qualifications*: <https://www.kutsekoda.ee/en/kutseresister>

Source: Estonia case study.

(³³) Republic of Estonia, Ministry of Education and Research: *Higher education: studying in Estonia*. <https://www.hm.ee/en/activities/higher-education>

The higher education sector in UK-England has exhibited swings in provision: from the two-tier system where the former polytechnics fulfilled an important vocational function, to a single-tier one (following the conversion of polytechnics to university status in 1992) that has been predominantly academic in its orientation but where the need to deliver employability, *qua* vocational skills, within traditional academic courses has been increasing prioritised by HEIs (Hogarth et al., 2016). There have been attempts to create a vocational stream in higher education through, for example, foundation degrees and via the development of higher-level apprenticeships. Although universities are the principal providers of higher-level education, it has also been provided in further education colleges since the 1950s (Scott, 2009). The Further and Higher Education 1992 Act created a clearer division between the higher education and further education (FE) sectors. This 'led to a two-sector tertiary system with the assumption that colleges would primarily concentrate on courses below degree level' (BEEHiVES, 2015b, p. 7). There is some overlap between the two, with some higher-level VET delivered by further education colleges under licence from an HEI. Some further education colleges deliver higher-level VET with their own recognition. While some higher-level VET provision in the further education sector is at bachelor level and higher, much of it is at the sub-degree level (such as SCHE). There is a range of sub-degree courses (higher national diplomas, higher national certificates, foundation degrees) typically – but not exclusively – delivered in further education colleges. The foundation degree 'introduced in 2001 to widen higher education opportunities and experiences by involving employers and the FEC (further education colleges) sector in England, with a focus on workplace learning, has been given new emphasis under the current Conservative government along with degree apprenticeships. Since 2012, FECs have responded to new regulations by expanding from franchised arrangements with universities to become directly funded by HEFCE (Higher Education Funding Council for England) to provide higher education' (Webb et al., 2017, p. 155) (³⁴). Provision of higher vocational education in the further education sector has increased over recent decades such that commentators and policy-makers now refer to a distinct sub or hybrid sector: higher education in further education (or HE in further education). This hybrid sector accounts for around 8% of all students studying towards a higher education qualification (2015/16). Outside the

(³⁴) HEFCE (Higher Education Funding Council for England) closed at the end of March 2018. In the early 2010s was a main policy push to implement higher and degree level apprenticeships. At the time of writing it is not clear whether the education element of the apprenticeship will be delivered in the higher education sector, in the higher education within the further education sector, or in a combination of both.

higher education or further education sectors, there is continuing professional development which is sometimes certificated and delivered at the equivalent to EQF levels 5 to 8 (and lower) by a range of public and private providers. The size of this market is far from clear.

In France, there seems a less clear distinction between VET and higher education compared to other countries. The higher education system is classified as fragmented or partly unitary and VET at higher levels has a long tradition. Higher education describes all post-secondary tracks including VET programmes. The tertiary education architecture can be described as a multi-track system mainly composed of universities, *grandes écoles* (elite university-level schools) and specialist public or private-sector schools (Hippach-Schneider et al., 2017). The growth of the French tertiary education segment since the 1960s is attributed largely to the massive increase in vocational higher education courses (Givord and Goux, 2007). This development is mainly due to the introduction of SCHE (Giret et al., 2011; Hippach-Schneider and Schneider, 2016). Types of SCHE have been offered since 1966 within universities (DUT, *diplôme universitaire de technologie*) as well as in *post-baccalauréat* classes in upper secondary schools (BTS, *brevet de technicien supérieur*). Licences professionnelles (professional or vocational bachelors; EQF level 6) were created in 1999. They are organised mainly within universities or in *post-baccalauréat* classes of some high schools (third year after a BTS), or, in a few cases, in other institutions through apprenticeship (*centres de formations d'apprentis*, CFA); steady, moderate progress in enrolment can be observed⁽³⁵⁾. Since 2014, the distinction between the professional masters (*masters professionnels*) and the research masters (*masters de recherche*) has been suppressed because of evolution of all university degrees towards curricula more oriented to a professional goal and defined in terms of learning outcomes and competences. Doctorate programmes (EQF level 8) can also be regarded as professional degrees in a broad conception of professional higher VET, to the extent that they are highly specialised and generally prepared while working at a university, or a research institute, or an enterprise or a public administration. Some qualifications are offered outside higher education, at EQF level 5, but they are considered as less important in terms of enrolment numbers. The *brevet de maîtrise supérieur* (BMS) and the *brevet technique des métiers supérieurs* (BTMS) are provided by the 107 chambers of trades and crafts (the total number of BMS delivered in

⁽³⁵⁾ 38 700 students in 2007, 52 708 in 2015 and 52 821 in 2017 (RERS-DEPP, 2017, p. 158).

France in 2011 was 130); further, there are about 500 graduates of diplomas of applied arts (*diplômes des métiers d'art, DMA*) each year.

Vocationally oriented programmes at higher education levels in Italy do not have a long tradition and are mainly linked to the university system. University masters (levels I and II) (EQF levels 7 and 8) have been offered by universities or specialised university institutions since 2004 and are aimed at specialising participants in a selected job; many are technical and vocationally oriented and include a mandatory traineeship. Higher specialisation diploma (EQF levels 7 and 8) have also been offered by universities since the 1990s (duration can last from three months to one year), but the enrolment numbers are low. Higher technical institutes (ITS) ⁽³⁶⁾ have offered SCHE since 2007 and professional bachelor programmes were introduced in 2016; these have been offered by universities since 2018 ⁽³⁷⁾. There are no VET qualifications at higher levels outside higher education.

Table 6 gives an overview of programmes offered in the case study countries that are classified as higher vocational and professional education and training (VPET) in this study.

⁽³⁶⁾ ITS are foundations made by schools, vocational training agencies, employers, universities and other stakeholders which cooperate in designing and providing the courses. In 2014/15, 0.4% of all Italian students enrolled in ISCED 5-8 programmes participated in ITS (ISCED 5) programmes (European Commission et al., 2018, p. 95). They are part of the Bologna structure and considered part of higher education (European Commission et al., 2018, p. 101) but not of the Italian qualifications framework for the higher education (<http://www.quadrodeititoli.it/Index.aspx?IDL=2>). They are generally recognised within first-cycle studies in the same field, but only partially.

⁽³⁷⁾ In Italy, the introduction of bachelor programmes was also considered as promoting vocational principles in higher education.

Table 6. Higher VPET in the case study countries: overview

Country	Professional HE	Higher VET
Austria	UAS: bachelor and master, dual study programmes	Formal education system: colleges for higher vocational education (EQF level 5) Outside the formal education system: <ul style="list-style-type: none">• <i>ingenieur</i> qualifications (EQF level 6)• other qualifications not yet included in the NQF
Estonia	Diploma of professional HE: bachelor level degree	VET certificate, level 5 (EQF level 5) Occupational qualifications (EQF levels 5-8)
Finland	UAS: bachelor and master programmes	Specialist vocational qualifications
France	SCHE (DUT, <i>diplôme universitaire de technologie</i> ; BTS, <i>brevet de technicien supérieur</i>), bachelor (<i>licences professionnelles</i>), master, doctorate programmes	<i>brevet de maîtrise supérieur (BMS)</i> , <i>brevet technique des métiers supérieurs (BTMS)</i> diplomas of applied arts
Germany	UAS: bachelor and master, dual study programmes	Advanced vocational qualifications, trade and technical schools (EQF levels 5-7)
Italy	Part of the Bologna structure: <ul style="list-style-type: none">• SCHE (higher technical institutes, ITS) (EQF level 5)professional bachelor programmes Not part of the Bologna structure: <ul style="list-style-type: none">• university masters (levels I and II) (EQF levels 7 and 8)• higher specialisation diploma (EQF levels 7 and 8)	—
Netherlands	UAS: SCHE associate degree), bachelor and master programmes	Non-regulated qualifications (currently: EQF levels 5-7)
Norway	Universities and university colleges: bachelor and master programmes.	Vocational college education (EQF level 5) Qualifications not yet included in the NQF
UK-England	Further education colleges and universities: SCHE, bachelor and master programmes	Continuing professional development (EQF levels 5 to 8)

Source: Cedefop, based on case studies.

3.2.2. Perception of VET at higher education levels

The study on higher VET in Europe reported the low image of vocationally oriented education and training at higher levels (second best choice for those who failed to access traditional academic universities) as the most frequently cited issue in this area (European Commission, 2016b, p. 136). However, this image varies from country to country. The 2011 Cedefop study on *VET at higher qualification levels* found that in terms of learning opportunities, there is more parity of esteem in countries where progression from more vocational to more academic study programmes is supported. Examples include countries in which

validation of non-formal and informal learning is better developed, such as Ireland, France and UK-England. In other countries (Denmark, the Netherlands and Finland), the study noted lack of educational parity of esteem, tracing it back to the limited permeability between qualifications attributed by higher professional institutions and universities (Cedefop, 2011, p. 8). However, increased equality accompanying widening participation apparently cannot be considered as a given. Bathmaker (2017, p. 3) argues that while expansion may succeed in opening up higher education, the status and value of resultant different forms are not equal in relation to one another. As a result, expansion could both reduce or conversely maintain and produce new forms of inequality⁽³⁸⁾. The PROCSEE (2017a, 2017b) project, for example, analysed professional HE in central and south-eastern Europe, particularly in the Czech Republic, Croatia, Hungary, Romania, and Slovenia. It concluded that this type of higher education – as part of the European higher education area (EHEA) and as an independent but equivalent form of higher education – in this region is often considered inferior to academic HE.

The perception of vocationally oriented education and training at higher levels also varies across case study countries. The issue is whether these programmes and qualifications are considered as second choice, equivalent to more academic HE programmes, or higher value compared to these programmes.,.

The same or even higher appreciation of higher VPET is reported for Germany, France and Austria and is linked to its value in the labour market⁽³⁹⁾. In Austria, UAS graduates are often valued more highly by employers than university graduates; the same applies for VET college graduates in comparison to upper secondary academic school graduates⁽⁴⁰⁾. Within higher education,

⁽³⁸⁾ Bathmaker (2017, p. 3) further raises the question how different forms of VET at higher levels contribute to the distribution of life chances and rewards, and in what ways they may help to narrow or widen inequalities. One line of thought suggests that when higher VET routes are positioned as high-quality routes, they might become increasingly desirable to academic high achievers. This might potentially lead to a situation where vocational pathways become colonised by those from advantaged backgrounds, squeezing out those from less advantaged backgrounds. A UK longitudinal national study found that there was ‘little evidence to suggest that the expansion of higher education has favoured those social categories which have low rates of participation in higher education’ (Webb et al., 2017, p. 5).

⁽³⁹⁾ Particularly for Austria and Germany, the NQF classification that started during the last couple of years is an important signal for the equivalence of VET at higher levels with academic degrees.

⁽⁴⁰⁾ E.g., Aigner, 2012; based on Statistics Austria’s monitoring of employment careers.

both universities and UAS are considered part of the academic field. The transferability of qualifications into prestigious and well-paid jobs is often taken as a benchmark in public discussions. In this respect, UAS graduates have not only closed the gap to their university counterparts but have – in some fields – even surpassed them. Similarly, the attractiveness of university bachelor graduates in Germany, especially in research connected study courses for the companies is lower compared to graduates from UAS (Bergs and Konegen-Grenier, 2005). Further, UAS bachelor graduates and holders of advanced vocational qualifications seem to have the same value in the labour market and equal career chances (⁴¹). However, both groups are very heterogeneous: there are big differences in employment and career perspectives between economic sectors, occupational sectors, branches and job areas (Flake et al., 2016).

In France, there has been a more positive perception in recent years of some vocationally oriented programmes at higher levels because they are a relevant response to the technological, digital and ecological transition.

The situation regarding the two strands of higher education in Finland is different. Although UAS degrees are nowadays officially equal to university bachelor degrees and the master degrees are comparable, the two higher education pathways are not considered completely equal. For example, there is confusion in the names of the degrees in the Finnish language. In the English translations, the UAS degrees are called bachelor and master degrees; those terms are not used in Finnish but are reserved for university degrees. UAS would like to start using the title ‘master’ (*maisteri* in Finnish) also for the Finnish names of these degrees but this is objected to by the universities (Arene, 2016). University degrees generally have higher status.

Vocational courses in England do not have the same esteem as those considered to be general. This is partly driven by the fact the entry requirement has been lower than for some general courses, and that the more elite HEIs have been reluctant to offer vocationally oriented education and training programmes that historically have been associated with other types of HEIs. They have also had little financial incentive to do so. That said, some of the more elite institutions have shown an interest in higher-level and degree apprenticeships, especially for engineering degrees, as noted by an interviewee.

(⁴¹) The Main Board of the Federal Institute for Vocational Education and Training (BIBB) stated in an official legal document in 2014 that the federally regulated advanced vocational education provides equivalent options for professional development compared to higher education.

In the Netherlands, the research universities are traditionally perceived as having a higher status than the UAS. However, the introduction of the two-cycle-structure (bachelor, master) and the maturing process of the UAS have strengthened the profile of the UAS bachelor. At the same time, the restructuring of degrees offered at research universities in bachelor and master degrees has resulted in a weaker position of the bachelor degree, which is not regarded as having a stand-alone value: it does not provide a good entry-point in the labour market and only is of value when the graduate also completes its master programme. The value of this bachelor degree might diminish further in the future and research universities might become smaller and more selective (de Zwaan, 2017, p. 210-211).

In Norway, professional HE programmes generally enjoy high esteem; vocational college education and qualifications such as the *Mesterbrev* are less well known. Potential students often become aware of many of these programmes only after having gained work experience in the relevant field. The gradual institutionalisation of the vocational college sector is probably helping this type of education to become more well-known. Efforts are currently being made by policy-makers to present vocational colleges as a distinct alternative to (academic) higher education and to raise their esteem by referring to vocational higher education. The parliament decided in May 2017, on the basis of the government white paper *Skilled workers for the future* (Norwegian Ministry of Education and Research, 2017) that a two-year vocational college education should give general entry to higher education (⁴²). It also decided to give students in vocational colleges more rights (such as to vote on boards) and benefits (such as grants for student exchanges abroad).

Table 7 summarises the perception of higher VPET programmes and qualifications compared to academic HE programmes in the case study countries (⁴³).

(⁴²) Lovdata: *Forskrift om opptak til høgre utdanning [Regulations for admission to higher education]* <https://lovdata.no/dokument/SF/forskrift/2017-01-06-13>

(⁴³) This information is not available for Estonia.

Table 7. Perception of higher VPET in the case study countries: overview

Country	Perception of higher VPET compared to academic HE programmes
Austria	Equal and sometimes higher status
Finland	Professional HE: lower status ^(a)
France	Equal and sometimes higher status
Germany	Equal and sometimes higher status
Italy	Lower status (low number of students enrolled in professional HE; no higher VET offers)
Netherlands	Professional HE: changing perception from lower to equal/higher status ^(b)
Norway	Professional HE: high status; higher VET: not well known
UK-England	Lower status

^(a) This information is not available for the specialist vocational qualifications (higher VET).

^(b) This information is not available for the non-regulated qualifications (higher VET).

Source: Cedefop, based on case studies.

3.2.3. Background of learners

There is change in the background of higher education students linked to efforts to broaden access for non-traditional students. This has been on the European policy agenda for several years. The Council of Europe project (1992-96) on access to higher education in Europe focused on increasing and widening participation rates of those from under-represented groups. Further, the social dimension in the Bologna process was adopted to encourage countries to develop strategies to widen overall access and increase participation and completion of underrepresented groups in higher education ⁽⁴⁴⁾. This includes the development of alternative access routes for non-traditional students. There seems to be a long way to go to achieve this aim: the latest *Bologna process implementation report* states that regarding ‘alternative access routes, little or no progress had been made between 2012 and 2015 in introducing frameworks for the recognition of prior non-formal and informal learning or to open higher education for non-traditional learners’ (European Commission et al., 2018, p. 153). This study is interested in whether the background of learners has changed over the past 20 years, in the sense that more people with vocational qualifications or/and work experience have access to higher education (a process that can be considered as vocational drift).

Countries have opened up higher education for people with this background by implementing specific measures:

⁽⁴⁴⁾ The social dimension in the Bologna process has been explicitly emphasised since the *Prague communiqué* (European ministers in charge of HE, 2001), and the *Yerevan communiqué* (European ministers in charge of HE, 2015) reaffirmed this commitment (European Commission et al., 2018, p. 153).

- (a) definition of new entry requirements and, in some cases, introduction of specific examinations: in Austria, for example, non-traditional access to higher education for people holding vocational qualifications was introduced in 1997 with the *Berufsreifeprüfung*. This exam provides general access to all types of higher education. Admission to UAS programmes without any kind of higher education entrance examination is also possible, based on VET qualifications and relevant professional experience. Several UAS offer preparation courses for these applicants, specifically designed for access to study programmes in these institutions. Typically, entry to higher education in UK-England required at least two A-levels (general, upper secondary education qualifications). This was thought a potential disadvantage for social groups who were less likely to enter the general track in upper secondary education. There was recognition that alternative pathways into higher education needed to be developed or expanded and there has since been less emphasis on possessing relatively high-level academic qualifications to gain entry;
- (b) implementation of bridge courses: in Norway, completed general upper secondary education gives general entry qualifications to higher education, while completed vocational upper secondary education does not (⁴⁵). However, those with a vocational upper secondary qualification (trade certificate) may take a one-year course of general subjects to obtain a general higher education entrance qualification. Also, vocational students at upper secondary level can take this course during their education to bridge across to the general, academic track;
- (c) procedures to validate and recognise professional experiences: in Norway, admittance on the basis of assessment of real competence is possible for applicants 25 years or older. Between 1 500 and 2 500 applicants have entered higher education each year through assessment of real competence between 2014 and 2016 (⁴⁶). In France, one of the main innovations during the past 30 years has been the introduction of new procedures to consider informal learning and experience for delivering formal qualifications. France first introduced legislation to support validation of prior learning in 1984. This system, which is now referred to as validation of learning and experiences (*validation des acquis de l'expérience*, VAE) has evolved significantly over recent years. Successful applicants may earn partial or full certification at all

(⁴⁵) There are alternative pathways into higher education in engineering and (as a pilot project) in nursing.

(⁴⁶) The data are collected from the database Statistikkbanken at Kompetanse Norge.

EQF levels through the VAE procedure (Michel and Looney, 2015). The ‘recognition and validation of informal and non-formal learning through professional or other experience’ was established by the Social Modernisation Act of January 17, 2002. According to this law, any person having at least three years’ experience in any kind of activity (professional activity or volunteering in a non-profit organisation) has the right to undertake a VAE procedure to validate informally acquired competences. In 2015, about 4 000 degrees or diplomas of vocationally oriented education and training at higher levels were obtained through VAE (RERS-DEPP, 2017) (47).

In Finland, the emphasis on work experience as an entry requirement for higher education has changed over the years.

Box 5. Changed emphasis on work experience as an entry requirement for higher education in Finland

The main trend in Finland is harmonisation of access requirements to allow people from different educational backgrounds to apply for various programmes. This reform was initiated in the 1990s, when upper secondary vocational school graduates were allowed to apply for all higher education programmes (Meriläinen, 2011). The changes have led to more people with VET starting higher education and later to a higher number of graduates with vocational and academic competences (a). The admission requirements for the UAS have changed in comparison with former post-secondary vocational colleges. For UAS, the only entry requirement is completing upper secondary level education. Although work experience gives additional points in the selection of students, the emphasis of work experience has declined and grades from previous education and the entrance exam weigh more in admission requirements. This development began earlier than in the 1990s and can be understood as academic drift.

The UAS master degree programmes introduced in 2005 differ in this respect. Three years of relevant work experience (after a bachelor degree) are required and the master programmes are designed in such a way that they can be carried out part-time. Typically, students carry out the tasks associated with the study programme for their employer. These degrees are intended for adults and are more professional than all other degrees in the Finnish education system (Arene, 2017).

(a) From the point of view of the whole education system, that was more an academic shift because it increased general subjects in all vocational degrees, including those at secondary level.

Source: Jørgensen, 2017.

(47) At higher VET levels, the diplomas most often obtained through the VAE are the professional bachelor and the master degrees.

There are differences as to whether alternative entrance routes into higher education only allow access to professional HE programmes or also to higher education in general; examples of the latter can be found in Finland or Norway and partly in Austria. Countries also differ in the extent to which these alternative pathways are actually used (⁴⁸). Evidence from UK-England demonstrates that higher education in further education has been able to attract a more diverse population of students (Parry et al., 2012), while in Austria, these alternative pathways into higher education still count for the minor part of access routes and the original aim of UAS to provide simplified pathways into their programmes for alternative target groups has only partly been fulfilled (⁴⁹). In Denmark, the target group of vocationally oriented education and training at higher levels has changed from secondary-level VET graduates to general education graduates as a result of an increased emphasis on academic principles.

Box 6. Changed target group in vocationally oriented education and training at higher levels based on academic drift in Denmark

Higher education in Denmark has a binary structure with a horizontal division between academic and vocational sectors. Professional HE is offered by university colleges, which mainly offer bachelor degrees aimed at the public sector, and by vocational academies, which offer a combination of further education, short-cycle and professional bachelor programmes aimed at the private sector.

In the 1950s, a diverse range of post-secondary vocational or technical programmes emerged, most of 1-3 years duration and aimed at journeymen. They were delivered by the vocational schools that also organised the school-based part of apprentice training. While in this first phase the main trends were fragmented growth and differentiation, from the 1960s on the main trends were horizontal integration, systematisation and academic upgrading. Later they were recognised as part higher education and fitted into the Bologna structure. The welfare professions (such as nurses, kindergarten teachers) were integrated in 2000 into centres for higher education and later renamed university colleges. Reform in 2009 established the vocational academies and some of the post-secondary programmes were upgraded to the bachelor level.

Instead of promoting progression from (secondary-level) apprenticeship to professional HE, the changes made to vocationally oriented education and training at higher levels have, in the end, reduced permeability between the apprenticeship

(⁴⁸) According to the latest *Bologna process implementation report* (European Commission et al., 2018, p. 178) alternative access routes are still marginal in most countries with available data.

(⁴⁹) With around 10% of students accessing via non-traditional routes, such as *Berufsreifeprüfung*, private universities show higher rates in this respect than universities or UAS. Also, the share of foreign students is higher at private universities (Schmid et al., 2017).

system and higher education. The process of academisation of vocationally oriented education and training at higher levels is considered one of the reasons for the low progression rate. As a result, the recruitment base for professional HE has shifted from apprentices to students from the gymnasiums, and the learning environment has become characterised by the academic culture. The gap between apprenticeships and professional HE has been widening.

Source: Jørgensen, 2017; OECD, 2014a.

A relatively new phenomenon can be observed in some countries. Graduates of higher-level degree programmes are enrolled in professional HE at lower levels. In Italy, for example, some students enrolled in higher technical education programmes (SCHE, professional HE) already have a bachelor or master degree. The main reason is that these programmes offer students more specific preparation adapted to the needs of the labour market. This increases their chances of finding a job compared to their situation after graduation from the university pathway. Similarly, in the Netherlands, associate degree programmes (SCHE, professional HE) are developed based on labour market demand and offer specialised courses to fill the knowledge gap between VET at secondary level (*mbo*) and professional bachelor (*hbo*) programmes. In line with this aim, most first-year students hold a *mbo* degree (70%) and have either recently completed a *mbo* degree (31%) or are already part of the workforce (25%). However, the group enrolling from the workforce has decreased in recent years, while those entering directly after finishing a degree in higher education has increased: around 31% enter the associate degree from a different higher education background (SEO, 2015).

New higher education programme formats (such as dual study programmes in Germany and Austria or apprenticeship programmes in France, Italy and UK-England) lead to a change in the status of learners: they are not only higher education students but also employees in enterprises. In Germany, for example, dual study programmes were created as a form of educational provision offering both an academic and a practical vocational qualification. Depending on the type of dual study programme, the students have a specific contract with a company as well as the education institution ⁽⁵⁰⁾. In France, some professional bachelor programmes (*licences professionnelles*) are offered in the form of

⁽⁵⁰⁾ This is also the case in the few dual study programmes offered in Austria. In Germany, despite the increasing number of students and programmes, the rate of students participating in dual study programmes is still comparatively small: for example, the rate of students in dual study programmes related to students in total (first-study students) increased from 2.5% in 2006 to 3.4% in 2012 (Wissenschaftsrat, 2013, p. 45).

apprenticeships. The number of learners obtaining their qualification at EQF levels 5 to 7 through the apprenticeship path (and through the VAE) is increasing and this trend is expected to continue in the near future as it is a goal of the current French government. In Italy, vocationally oriented education and training in higher education has been available as higher education and research apprenticeship programmes since 2011.

Higher VET programmes and qualifications traditionally build on initial VET qualifications and work experience, with the exception of those that have a close link to IVET qualifications (such as the VET college qualifications from Austria).

Master craftsman qualifications, for example, usually build on IVET qualifications and professional experience (such as in Austria, Germany and Norway). This is also the case for the specialist vocational qualifications in Finland and the Estonian VET certificate level 5, which is intended for people who have already acquired professional skills competences. In Germany, a completed course of vocational training and/or appropriate vocational experience is generally required to be admitted to an advanced vocational examination. However, the relevant regulations have recently been updated and access has been explicitly opened to university graduates with related work experience. An IVET qualification is no longer a prerequisite for the advanced vocational examination. This is a signal of greater permeability between higher education and higher VET and is seen as a good example of reciprocity.

The major segment of the vocational college sector in Norway also recruits students with a vocational qualification (from upper secondary VET) and often with relevant work experience. This includes the technical, maritime and health colleges/programmes. In this segment, the vocational colleges function as further education institutions; alternatively, students with completed upper secondary VET transit directly to vocational colleges (in maritime programmes). A smaller segment of vocational colleges recruits students with general upper secondary education. This includes creative studies, business and various other programmes. These programmes have a less tight relationship to employers and work life, and students do not necessarily have previous education in the field or relevant work practice (⁵¹).

⁵¹) In Sweden, some students in higher vocational education programmes also have work experience: their average age is 29.7 and while some begin their studies directly after upper secondary education, others have worked before enrolling in higher vocational education programmes and use these programmes for upskilling or reskilling purposes (based on data from 2013, Cedefop news, 9.2.2015)

In summary, there is no clear statistical evidence as to whether the background of learners has changed in the past 20 years, but some trends can be indicated, as shown in Table 8.

Table 8. **Student backgrounds**

Sector	Student backgrounds
Higher education	Countries have opened higher education to people with vocational qualifications or/and with work experience, but actual use of this non-traditional access route (also in professional HE) is still relatively low in many cases; There are some tendencies for higher education graduates to enrol in lower level professional HE programmes (EQF level 5); In new formats of professional HE, students also have the status of employees in enterprises.
Higher VET	Higher VET qualifications are generally based on IVET qualifications and work experience; there is no evidence that this has changed significantly over time.

Source: Cedefop, based on literature and case studies.

3.2.4. Outcomes/destination

The Bologna declaration (1999) on higher education had a strong influence on the debate on the relationship between higher education and professional life (Haug and Tauch, 2001, p. 24). The employability of bachelor graduates was widely discussed, particularly whether this degree is more of a springboard to a master degree or offers access to the labour market as an independent qualification. This study focuses primarily on the outcomes of VET at higher levels with a view to obtaining occupational or education-related access rights: the extent to which graduates are prepared for access to the labour market (for employability) or to further learning.

The *Study on higher vocational education and training in the EU* found that the key function of 50 out of 63 qualifications analysed in-depth was ‘preparation for employment, [...] followed by upskilling (improving or updating one’s knowledge, skills and competences) with 29 responses and reskilling (acquiring new skills for a career move, progression or retraining)’ (⁵²). The study further noted that ‘preparation for further learning or training seemed to play a much less prominent role since it has been mentioned only in 14 cases as a key focus of the programme or qualification’ (European Commission, 2016b, p. 74).

Looking at vocationally oriented education and training at higher levels in the case study countries, depending on the type of qualifications and programmes (and the specific target groups), they seem to serve various key purposes:

- (a) relevant professional preparation to enable graduates to enter a profession;

⁵²) Slightly less than half of these programmes or qualifications were offered outside higher education.

- (b) to give persons already in employment the opportunity to develop in their profession;
- (c) to give individuals the opportunity to advance to a higher level of education.

Most vocationally oriented programmes and qualifications at higher level aim at supporting access to further learning and the labour market, but these pathways are used to varying degrees. In UK-England, for example, higher national certificates and foundation degrees (professional HE linked to EQF level 5) can be important stepping stones to further study; more so than when students complete a first degree. Austrian VET colleges (higher VET linked to EQF level 5) provide their graduates with a double qualification allowing, direct entry to the labour market and access to higher education. Around 55% of all graduates currently opt for a higher education programme (compared with around 85% of graduates from academic upper secondary schools). After an increase in the corresponding transfer figures in the 1990s and early 2000s, they have tended to decline slightly since about 2010 (⁵³).

In France, at all higher levels of vocationally oriented education and training (EQF levels 5 to 7) there are graduates entering the labour market and others continuing their studies to obtain a higher-level qualification. Over the last 30 years, the total number of students in higher education has increased and the proportion of EQF level 5 graduates attending a bachelor programme, particularly a professional bachelor programme, has increased significantly. Recently, there has also been an increase in the proportion of bachelor graduates who have studied in part-time master programmes (*enseignement en alternance*) directly or after one to two years in the labour market. Such trends can be observed in all types of qualification, even in some sectors where employers do not automatically prefer master graduates to bachelor graduates (⁵⁴).

The destination of UAS graduates (professional HE) in the Netherlands depends on the type of degree and specialisation. Graduates of associate degree programmes (linked to EQF level 5) have higher employment rates than bachelor and master programme graduates (⁵⁵). The degrees offered by UAS also come

(⁵³) See Statistics Austria's publications on education indicators from 2006 to 2015:
http://www.statistik.at/web_en/statistics/PeopleSociety/education_culture/index.html

(⁵⁴) A specific issue has arisen in medicine where an increasing proportion of students choose to study three or four more years after their medical diploma to become specialists, so that there is now lack of generalists, mainly in rural areas.

(⁵⁵) The associate degree is also intended to be combined with employment and further promote the careers of employees. Recent graduates do not always find a job that corresponds to their level of education. However, the number of students finding

with opportunities for further studies; following the associate degree, graduates can enrol in a professional bachelor programme. Institutional data from the Rotterdam Academy (Hogeschool van Rotterdam, the largest provider of associate degrees) show that, on average for 2014-16, 28% of associate degree graduates continue further learning in the bachelor programme⁽⁵⁶⁾. The professional bachelor degree enables graduates to enrol in a professional master programme as well as in a bachelor or master programme offered at a research university. However, research universities can make additional demands (such as an additional preparatory year) to increase academically oriented knowledge, skills and competences. The transition from a UAS (professional HE) to a university programme and vice versa is also possible in Austria. Sometimes applicants who are not accepted into one sector temporarily switch to the other⁽⁵⁷⁾. Apart from that, such changes are rare: due to the resistance of the universities there are still some structural barriers. For example, graduates of specific master programmes at UAS can expect an extension of the study period for doctoral studies at a university⁽⁵⁸⁾.

Higher VET programmes and qualifications, as well as dual study programmes (professional HE) in the case study countries, focus strongly on preparing for access to the labour market⁽⁵⁹⁾. In Germany, for example, the goal of advanced vocational education (higher VET) is to extend occupational proficiency and obtain career promotion (Section 1 paragraph 4 BbiG). Advanced vocational education as a *Meister* entitles the holder to practise a craft trade independently and to employ and train apprentices⁽⁶⁰⁾. Graduates are prepared

suitable jobs has increased over time; in 2016, around 80% of graduates were employed at the level of their degrees (ROA, 2016).

⁽⁵⁶⁾ Institutional data from Rotterdam Academy.

⁽⁵⁷⁾ The direction of these *detours* has changed several times. Years ago, for example, unsuccessful applicants for medical programmes at UAS completed a year of medical studies at the university. Since the entrance test for medicine was established, it has sometimes been the other way around.

⁽⁵⁸⁾ Österreichische Hochschülerinnenschaft Bundesvertretung [Austrian University Students Union]: *Doktoratsstudium für FH-Absolvent_innen* [Doctoral studies for FH graduates] <https://www.studienplattform.at/doktoratsstudium-fuer-fh-absolvent-innen> [accessed 3 July 2017].

⁽⁵⁹⁾ This is also the case with higher VET qualifications in other countries, such as in Sweden: higher vocational education programmes in Sweden are very much tailored to the needs of the labour market and thus offered in specific fields where an explicit demand for competence exists (Skolverket, ReferNet Sweden, 2016).

⁽⁶⁰⁾ This qualification also offers access to courses at craft academies and universities of applied sciences or even universities.

for intermediate company level jobs. Similarly, the trade and technical schools (higher VET) provide qualifications to assume more extensive responsibility and management functions in the workplace. Graduates from dual study programmes are also usually prepared for intermediate level jobs in companies. Similarly, the main objective of the Norwegian higher VET programmes and qualifications (vocational college education as well as post-secondary qualifications such as the *Mesterbrev*) is to support access to the labour market (⁶¹). The Estonian VET certificate level 5 also prepares mainly for access to the labour market (medium skilled workers and technicians). However, it is possible that some parts of this qualification may be credited to higher education in the same field.

In Italy, there are different experiences with the labour market access of graduates from vocationally oriented education and training at higher levels. The bachelor degree introduced in 2007 was conceived as a professionally oriented course of study designed to support graduate access to the labour market but expectations were not fulfilled. However, the professional bachelor degree introduced in 2016 should change this situation: 80% of graduates should be employed one year after completing their studies. This rate has already been achieved with the – still relatively young – higher technical education diploma (ITS; linked to EQF level 5): access to the labour market generally takes place immediately on completion of the degree programme, although it is also possible to enrol in another higher education programme (⁶²).

There are indications that the introduction of professional HE through the upgrading of post-secondary VET has strengthened the professional status of graduates and supported their career path. This is the case in Finland, where former post-secondary level colleges have been upgraded to UAS. There are no reliable results, but some expert opinions point to the fact that the degrees offered at UAS are more helpful for a career than the previous post-secondary vocational qualifications (⁶³). This means that the graduates of UAS are considered higher qualified than those of former colleges. This usually does not apply to those who are already employed, but finding a new job can be a challenge for those who have graduated from former college.

(⁶¹) Recently, it has been decided in the Parliament that a two-year vocational college education will give general entry qualification for universities or university colleges.

(⁶²) Analysis of the 2015-17 monitoring data provided by INDIRE (2017) shows that 79.5% of all graduates were employed 12 months after completing a higher technical diploma. In many cases, they are employed as senior technicians in companies.

(⁶³) This effect cannot be observed for the master degrees. It seems that it takes time before the status of these degrees will be recognised in the labour markets (Ojala, 2017).

In Austria, the upgrading of upper and post-secondary VET to professional HE has also been accompanied by changes in the professional status of graduates. These are sometimes implemented through new professional regulations. For example, the recently introduced Health Care and Nursing Act introduced a new structure of professions that also improves the status and responsibilities of their highest class, the registered nurses (for which the programmes are now offered in professional HE). Professionals with the new status are replacing those with the old status step-by-step. For a time, however, they will exist in parallel, as they usually perform the same tasks and receive the same salary.

In summary, some trends can be observed in connection with the outcomes of vocationally oriented education and training at higher levels, as Table 9 shows.

Table 9. **Outcome/destination**

Sector	Outcome/destination
Professional HE	<ul style="list-style-type: none"> • provides access to further learning and the labour market; • upgrading of former VET programmes to higher education has strengthened the professional status of graduates; • transition from professional HE to academic HE is sometimes still difficult due to structural barriers.
Higher VET	Depending on the type of qualifications and programmes, they initially prepare for access to the labour market or provide access to further learning and the labour market.

Source: Cedefop, based on literature and case studies.

3.3. Socioeconomic or labour market perspective

3.3.1. Governance and funding

Looking at the current European landscape of vocationally oriented education and training at higher levels, public institutions continue to play an important role in governance but there are indications that labour market actors are involved in different ways and to different degrees (⁶⁴). For example, the *Study on higher vocational education and training in the EU* (European Commission, 2016b) observed that almost all programmes and qualifications analysed in detail (63 in total) rely on some form of public funding; private funding through companies was mentioned for less than one fifth, but always in combination with other forms of funding. In all cases some form of partnership and cooperation with business and

⁽⁶⁴⁾ This is also supported by the Cedefop study *VET at higher qualification level* which points out 'that there is still some progress to be made for the inclusion of labour market organisations' (Cedefop, 2011, p. 54).

industry was identified. However, the forms of cooperation differ greatly and refer to aspects such as work-based learning, cooperation in provision (professionals from the field as teachers/trainers), or participation of employers in assessment/certification processes.

Analysis of governance characteristics of vocationally oriented programmes and qualifications at higher levels in the case study countries shows that the traditionally strong participation of social partners or other actors in the labour market in education is usually also reflected in governance structures at higher levels (⁶⁵).

In Germany and in Austria, social partners are involved in education institutions providing VET programmes and qualifications at higher levels. In Austria, they run VET colleges (higher VET) and UAS (professional HE) and are the major providers for continuing VET qualifications (higher VET). Social partners are entitled to express their opinion on the preparation of curricula for VET college. This is also true, on a voluntary basis, for UAS programmes. In France, vocationally oriented education and training at higher levels is mainly governed by the competent Ministries and by the regions, in cooperation with representatives of employers and employees through consultative commissions which also include experts in education and training. With the development of apprenticeship training (especially at higher levels) and the introduction of professional bachelor and professional master programmes at universities in 1999, the role of labour market actors has increased. The latest project (announced in November 2017) to reform VET in France and develop apprenticeship training will strengthen their role. The role of the State and the regions in financing VET is important. However, the share of enterprises in financing vocationally oriented education and training at higher levels has slightly increased in the last years.

The governance characteristics of higher VET are usually vocationally oriented (with strong links to the labour market and employer involvement) and few changes have been taken place during recent decades in this regard. However, some attempts were made to intensify vocational orientation, as the example from Norway shows.

Norwegian vocational colleges regulated by the act relating to tertiary vocational education from 2003, need accreditation for all qualifications/education programmes by NOKUT. There is also a provision that NOKUT can grant a college self-accreditation rights to establish new programmes within a particular

(⁶⁵) Norway is an exception in this regard since social partners usually play a strong role in VET but have a weak influence at higher levels.

field, which a few colleges have acquired. National legislation requires all colleges to have boards that are accountable; there are no requirements for representation of enterprises or labour market organisations in these boards. However, NOKUT requires vocational colleges to have a formalised agreement with labour market representatives to ensure that the content of programmes is relevant to labour market needs. An advisory tripartite body for the vocational college sector, called *Nasjonalt fagskoleråd*, was established at national level in 2010. It has a broad mandate focused on developing the sector at large. Establishing this body was a strategy to strengthen the vocational college position within the education system and in society at large, and to coordinate the diverse sector, as well as to ensure their relevance to working life. The body is inspired by the tripartite body for upper secondary education and has majority representation of the social partners (employer organisations, trade unions) in addition to representatives from the vocational colleges.

Vocational drift in the governance structures of higher education in Europe was already identified in 1996 as a result of the economic crisis, which brought greater tolerance for employer intervention into the curriculum: ‘the power balance in higher education has thus moved in favour of the employers – now recognised as one of its largest stakeholders, increasingly represented on the governing bodies of universities and brought in to advise on national policy’ (Woodrow, 1996, p. 15). However, this was not accompanied by a significant increase in private sector investment in higher education; the latest *Bologna process implementation report* states that ‘European higher education institutions are funded predominantly from public sources’ (European Commission et al., 2018, p. 31).

As the analysis of the trend reports by the European University Association⁽⁶⁶⁾ shows, employer engagement in higher education has been growing over the years (Sursock and Smidt 2010, p. 20). However, a longitudinal analysis reveals that ‘the proportion of institutions that consult professional bodies and employers peaked between 2003 and 2007, i.e. during the most active period of curricular reform to implement the Bologna degree structure. It has remained essentially stable since then, despite the policy discussions at European and national levels calling for further enhancement’ (Sursock, 2015, p. 81). Currently, in about two thirds of the education systems in the EHEA there is a requirement for the governing bodies of HEIs to involve representatives of other

⁽⁶⁶⁾ EUA:
https://eua.eu/resources/publications.html?&search=Trends&filter_year=&filter_issue_s=0&filter_category=0&limit=10&filter_order=a.created&filter_order_Dir=DESC

organisations that might include unions and business/industry; in nearly four fifths of the education systems, employers are most commonly consulted regarding the development of new study programmes (European Commission et al., 2018, p. 43-44).

Most of the case study countries with a binary higher education structure experienced a kind of vocational drift in connection with governance characteristics.

There have been no significant changes in Germany in the last 20 years but in some degree programmes, for example at the universities of cooperative education, employers or certain large employers play a decisive role in curriculum development. In some cases they contribute to financing. This development is also critically reflected upon because the direct influence of individual enterprises ‘represents a destandardisation of the traditional collective governance mode’. Work-based programmes are designed that meet their firm-specific skills demands and ‘national VET standards have been dismantled as dual-study programmes are implemented in very different ways throughout Germany’. This ‘puts at risk polyvalent and transferable skills as a collective good. Furthermore, as firms now play a key role as gatekeepers for access to high-quality work-based HE programmes, this partly reduces the capacity of the German skill formation system to help youth from disadvantaged socioeconomic backgrounds to secure relatively well-paid jobs. Thus, the stakes for the renowned traditional dual-apprenticeship training system are high’ (Graf, 2017, pp. 2-3).

In the Netherlands, the strengthening of vocational principles in higher education had already begun before the phase which is the focus of this study. UAS programmes are regulated like all higher education programmes; they are covered by the Comprehensive Higher Education and Research Act of 1993, which increased the autonomy of all HEIs. Within the framework of the accreditation procedures of the last decade, the introduction of a new education programme is placing increasing emphasis on proving the needs of the labour market (⁶⁷). The UAS receive State funding but households (students) and companies also contribute. Companies provide funding for mentoring of interns and research activities that they commission from the UAS. The government is by far the main contributor, responsible for 63% of the funding, but the percentage of

(⁶⁷) NVAO: *Toets nieuwe opleiding Nederland* [Initial assessment of new programmes in the Netherlands]: <https://www.nvao.net/beoordelingsproceduresnederland/toets-nieuwe-opleiding-nederland> The labour market relevance of higher education programmes is controlled by the *Commissie Doelmatigheid Hoger Onderwijs* (CDHO): <https://www.cdho.nl/>

government funding has decreased over the years (from 68% to 63%) while household and company funding increased slightly between 2000 and 2015 (⁶⁸).

In Norway, universities and university colleges are both regulated by the act relating to universities and university colleges of 2005. Since 2011, each university and university college are required to have a council for cooperation with working life. In a recent evaluation (Tellmann et al., 2017), these councils are said to have strengthened cooperation with working life institutions, especially on the strategic level. This could be considered as vocational drift; however, these councils are still in an early phase of operation. Traditionally employer and employee organisations have had a weak or no role in the governance of higher education. Funding for HEIs is also public (national State budget). They do not rely on funding from enterprises but receive private funding from them for tailor-made continuing and further education courses; however, in most cases these are non-formal courses. The main general trend in recent years (visible in accreditation procedures and government policy on institutional change) has remained academic drift, despite the establishment of local councils for HEIs aimed at strengthening links with labour market stakeholders and local businesses.

In Austria, the most striking changes of the last two decades have been the introduction of UAS organised according to a new public management approach. This new approach was reflected in various aspects, including the fact that there were no legal ownership restrictions, academic and non-academic staff were recruited and appointed directly by the UAS, and curriculum decisions were made by the academics in collaboration with institutional management. At the same time (around 1993), the universities were also to be converted to a new public management governance that would grant them more or less full autonomy. In 2002, important steps were taken to strengthen university autonomy with a new university law. The move towards new public management also has an impact on financing issues, but more on the process than on sources: a more autonomous approach has been adopted from the outset for the UAS by providing them with a fixed sum based on student numbers. The UAS also receive funding from several public sources, such as provinces and municipalities, and, in some cases, also from chambers (Pechar, 2005, p. 9). The University Act of 2002, which holds the federal government as the main party responsible for basic funding, goes in a similar direction, but the universities receive a flat-rate budget at their own

(⁶⁸) Between 2010 and 2015, household funding increased from 20% to 25% and company funding decreased from 14% to 12%, probably as a result of the economic crisis.

discretion. As a basis for this regulation, performance agreements are implemented and about 20% of the budget is allocated according to specific indicators (Pechar, 2005, p. 10). This changed governance approach requires stronger acquisition of third-party funds (for all institutions of higher education) and so can be regarded as vocational drift.

There have also been administrative changes in Finnish higher education during the last few years. Previously, universities used to be owned by the State and vocationally oriented institutions, including UAS, were owned by the municipalities. Recently, UAS have adopted the organisation structure of companies. The major shareholders are still the municipalities but the 'limited company' structure enables new kinds of ownership and funding channels; as an example, a UAS has more freedom to sell its services to public markets including continuing education (Mikkola et al., 2017). The collaboration between industry and education institutions, both UAS and universities, has grown in recent years. In principle, degree-orientated education is funded by the government. Industry representatives may have access to education institutes board and they may have an impact on the decisions made on education content. However, the programmes are not tailored directly to company needs and industry does not provide significant direct funding, though it may sponsor professorships or there may be similar small-scale funding. This is done to guarantee important research and education for the companies but is not considered as a primary source of funding. According to the Finnish Ministry of Culture and Education (2015), UAS are meant to be kept publicly funded.

In countries with a university-dominated (Italy) or a unified higher education system (UK-England) some strengthening of vocational aspects related to governance characteristics can also be observed.

In Italy, this is the case for the three main types of professional HE programme:

- (a) university master degrees (level I and II) were established in 2004 and are provided by a partnership between universities and employers association;
- (b) the higher technical education system (ITS) was launched in 2007 and implemented in 2010. Regional Authorities are responsible for the financial management and coordination of the programmes while new legal entities called 'technological poles' (*poli tecnologici*) are responsible for designing and providing the courses. The technological poles are an organisational mode of sharing available public and private resources, also for more efficient and effective use of the spaces and laboratories of schools and training institutions, with the full use of the tools (financial, human,

technological) provided by the Italian government (⁶⁹). ITS are foundations created by schools, vocational training centres, employers, universities and other stakeholders that cooperate in designing and providing the courses. ITS are financed by the Ministry of Education, University and Research (MIUR), the Regions and the ESF;

- (c) professional bachelor degrees were introduced in 2016 and are also financed by the ministry. Universities offer them and they also define agreements and collaborations with employers, employers' associations and other stakeholders to design learning pathways that are closely linked to the needs and requirements of the labour market.

In UK-England, stakeholders are often represented on the boards of governors of universities and further education colleges. Some further education colleges also deliver professional HE and often do so under the umbrella of an HEI, in which case governance of the course falls under the authority of the HEI (⁷⁰). Where employers perhaps have most influence is in the design of apprenticeship standards and the content of foundation degrees. Funding derived from government is channelled through the Higher Education Funding Council for England (HEFCE) to universities. Some universities have demonstrated a vocational shift by promoting the employability skills of their students and by appointing business engagement positions and placement departments across all faculties. The role of such departments within the overall university institution is to engage stakeholders, employers and local businesses to address gaps in work experience provision and promote the university's growth. Such structures are deemed mutually beneficial for universities and employers, as employers are able to access and train higher-level students, and universities can build partnerships and benefit the local economy in which they are based (⁷¹).

(⁶⁹) To ensure the coherence of the ITS learning pathway, the Regions prepare specific inter-institutional agreements including all actors involved in the functioning of the 'technical poles' (enterprises, employers' organisations and social partners as well as vocational schools, universities and research centres located in the Region).

(⁷⁰) Much professional HE is actually delivered in the further education sector but, given the competition for students and funds, there is some indication that universities are increasingly looking to take the delivery of this training in-house in some instances.

(⁷¹) To identify what can be learned about effective approaches to the development and delivery of employer-sponsored, work-integrated higher education programmes, the Quality Assurance Agency for Higher Education (QAA) recently commissioned a literature review (Bravenboer and Lester, 2016). The review points to several principles that have broad agreement for developing and delivering degrees that include integration with workplace activity, with particular relevance for degree apprenticeships. These include, for example, the need for effective collaboration between the HEI and the employer, including understanding of how the workplace

Educational policy in France during recent decades, but particularly with the laws on higher education of 2007 and 2013, has emphasised reinforcing links between education institutions and enterprise, and cooperation between different types of institutions, such as universities and other schools or research institutes.

The harmonisation or differentiation of quality assurance in academic and professional HE varies from country to country. In the Netherlands, one agency has been responsible for quality assurance in higher education since 1993; in Austria this has been the case since 2012 (⁷²). However, despite this change in quality assurance structures, the regulations in Austria still differ. While UAS quality regulations always showed clear labour market orientation, the ones for universities have not emphasised this to date.

Norway also has different regulations. Universities can establish programmes at all levels while university colleges need accreditation from the national accreditation body NOKUT (established in 2003) for master or PhD programmes (with a few exceptions) but have self-accreditation rights for bachelor programmes. The NOKUT accreditation and review processes have been seen as inducing academic drift in the university colleges, especially in the percentage with research competence in the teaching staff.

This unification of quality assurance bodies in higher education cannot be identified in Italy, where a new body was introduced that is responsible for the newly established ITS system (2007), INDIRE (⁷³). Monitoring and evaluation in the university system is the responsibility of ANVUR (⁷⁴). There are attempts to

works and the flexibility to tailor programme design and delivery to it, and commitment to supporting learning that goes beyond the minimum needed to do the job. Following on from this, they include effective partnership agreements that will normally clarify roles and responsibilities for recruitment, workplace support, teaching and assessment.

(⁷²) Before this, the final responsibility for quality within the Austrian UAS-sector was in the hands of an external professional body, the *Fachhochschulrat* (UAS council). This organisational entity guaranteed minimal standards of quality (Pechar, 2005). The Austrian Accreditation Council (ÖAR) was a non-ordained authority in the Ministry of Science for the accreditation and supervision of public and private universities. In 2012, these two bodies were merged into AQ Austria (Agency for Quality Assurance and Accreditation Austria) which now fulfils accreditation duties and conducts audits for all institutions of higher education in Austria.
<https://www.aq.ac.at/en/> [accessed 15 June 2017]]

(⁷³) Istituto Nazionale Documentazione Innovazione Ricerca Educativa (national institute for documentation, innovation and educational research).

(⁷⁴) Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca (national agency for the evaluation of universities and research institutes).

coordinate and harmonise better ITS and professional bachelor programmes but it is not yet clear how this would influence quality assurance arrangements (⁷⁵).

In summary, in many cases the vocational principles of governance characteristics of (vocationally oriented) education and training at higher levels have been strengthened, and vocational drift can be observed in this respect.

Table 10. Governance and funding

Sector	Governance and funding
Higher education	In many cases vocational drift: strengthened links to the labour market and employer involvement in governance structures (but less strongly in financing)
Higher VET	No significant changes: usually strong vocational orientation, with strong links to the labour market and employer involvement

Source: Cedefop, based on literature and case studies.

3.3.2. Policy rationale

There is a range of common external influences that affect the development of vocationally oriented education and training at higher levels; countries respond to these influences in different ways. These influences include demographic change, globalisation/offshoring, technical change/digitisation/robotics, organisational change within workplaces and sectors (including sectoral restructuring) affecting the structure of work and outflow from other policy areas (Cedefop, 2018a). Countries' different reactions to such influences have resulted in an increasing diversity of programmes and qualifications, including vocationally oriented education and training offered at higher levels. The different education policy objectives on which these changes are based include (see also Hippach-Schneider and Schneider, 2016, p. 8):

- (a) strengthening the relationship between higher education and the economy to ensure that labour market needs are considered: the alignment of programmes and qualifications at higher levels with labour market needs played an important role for change processes in all case study countries. The rationale for strengthening vocational principles at higher levels emphasises ensuring cost-effectiveness, economic growth, employability of graduates, and combating unemployment (⁷⁶);

(⁷⁵) In February 2017, a national steering committee was established for coordinating and harmonising the ITS system and professional bachelor degrees. The committee agreed that a unitary design is required and that it is necessary to create arrangements to support students to transfer from one system to the other, within a formal and stable collaboration between different actors and stakeholders.

(⁷⁶) However, the employment rate of tertiary level graduates in most European countries is traditionally higher than for their peers with lower educational attainment (Eurostat:

- (b) improving social and geographic access to higher education (such as providing possibilities for progression from VET at secondary level to higher education). Supporting individual progression by widening participation at higher education, providing entry pathways for non-traditional students (as in Austria) and equality and social inclusion (such as in Finland and UK-England⁽⁷⁷⁾) are further reasons for offering professional HE⁽⁷⁸⁾:
 - (i) in England, the widening participation agenda has given an impetus to the development of a more vocational pathway through higher levels of learning. This had always been in place to a degree, but it has gained much more traction over recent years with the introduction of foundation degrees in the late 1990s and now the push to increase participation in higher and degree level apprenticeships;
 - (ii) in Finland, the development of VET (at all levels) was based on two key drivers: the need to expand the educational base when Finland was internationally lagging behind in higher education as well as the rationale for lifelong learning. The reform took place at the same time as the 1990s recession and its aftermath, with rapid growth of the Finnish telecom sector. This drove the expansion of the UAS system, though not without criticism. One of the points of criticism was that previously work-oriented degrees were transformed into too theoretical studies that did not meet the requirements of the labour market;
- (c) improving professional preparation for the labour market, ensuring its competitiveness globally and securing a supply of highly skilled labour (also with innovation skills)⁽⁷⁹⁾. This has, for example, been reported for Estonia, France, Finland and UK-England. The development of a knowledge society with perceived increased in skills demands is also used for justifying the strengthening of academic principles in vocationally oriented programmes

Employment rates of recent graduates http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_rates_of_recent_graduates

- (⁷⁷) In early 2017, the UK Conservative government proposed new wave of reforms, to create a system of technical education that would 'benefit the half of young people who do not go to university', as one pillar in a new industrial strategy (Bathmaker, 2017, p. 3; HM Government, 2017, p. 11).
- (⁷⁸) Finnish governments, however, have made budget cuts in education at all levels from upper secondary VET to universities. For that reason, there have been lay-offs in many education institutes, schools have been merged and many study programmes have been discontinued. The downsizing of education systems coincides with worries about competitiveness and social inclusion through education.
- (⁷⁹) Some researchers refer to global academisation of labour markets (e.g., Baker, 2014).

- and qualifications (as in Norway) (⁸⁰). These developments cannot be explained simply by the current thinking of institutions and graduates; they are also based on clear ‘real’ requirements of the labour market or employers;
- (d) considering the increasing diversity of qualifications and expectations of students, as well as attracting them. In Norway, for example, academic drift observed in the vocational college sector (their transition into university colleges and so into the higher education system) is believed to be linked to the prestige of being a HEI, and as a way to attract students (⁸¹).

Box 7. Alignment to labour market needs in UK-England

In England, concern about levels of overqualification in the workforce has increased the need for education at higher levels to have a labour market focus. Universities have responded to this through the provision of employability training within general/academic courses. But it has also led government to attempt, once more, to revitalise the provision of vocationally oriented education and training at higher levels, this time via apprenticeships.

The increase in tuition fees has reinforced the alignment with labour market needs. For students, it has become more important to get more from degrees, which includes gaining skills to enhance their employability so that they will obtain the type of employment that will have made the financial investment worthwhile. This has led to a vocational shift in higher education provision, through placement services, improved careers advice, and employer input into curriculum and course design.

Source: Case study UK-England.

The drive towards higher-level (general and vocational) knowledge, skills and competences has become a dominant policy narrative at European level in recent years. Cedefop’s 2016 skills forecast (Cedefop, 2016; 2017c) identified an increasing need for high qualifications, defined as ISCED 97/11 level 5 and above, as one of the key drivers expected to impact employment, occupations and qualifications in all sectors across the EU until 2025: ‘all sectors are expected to employ more highly qualified people, reacting to a combination of demand and

⁽⁸⁰⁾ In Norway, professional unions and university college staff are said to have contributed to the strengthening of the academic aspect of these professional HE programmes. The professional ambitions of unions and colleges seem to have fitted in well with increasing knowledge rhetoric in the political arena. There has also been criticism of the increasing academisation of university college programmes, both from within the colleges and from employers.

⁽⁸¹⁾ Not all vocational colleges have been subject to such academic drift. Colleges with technical, maritime and health programmes, which recruit students with upper secondary vocational education, have remained as vocational colleges.

supply factors. Technology, by replacing routine tasks, is making jobs more demanding and requiring higher skills' (Bathmaker, 2017, p. 1). This quest for higher knowledge, skills and competences is not exclusive to higher education nor to VET. It is also supported by EU policy, particularly by the Europe 2020 strategy, which has set a headline target of increasing the number of people in the EU aged 30 to 34 attaining tertiary education to at least 40% (European Commission, 2010).

The social dimension of education and training is also an essential conceptual feature and objective of many education policy documents at national and European levels. The reference to the social dimension is considered important for both higher education and VET; in many areas it is seen as an important asset for market-relevant product development, service quality and innovation. However, the relevance of vocationally oriented education and training at higher levels does not seem to have been sufficiently recognised for a long time. The Organisation for Economic Cooperation and Development (OECD) *Skills beyond school* review (OECD, 2014a), for example, acknowledged that post-secondary VET (defined by the OECD study as ISCED level 5 and above) plays an under-recognised role in a country's skills system, calling it a 'hidden world of professional education and training'. It pointed out that, although inadequately understood, this world is of key importance to the skills systems of OECD countries.

Vocational aspects are addressed not only in European policy documents related to VET but also in those related to higher education. The Bologna declaration (1999) emphasised citizens' employability' ⁽⁸²⁾ and the entrepreneurial university became a contemporary paradigm of the 21st century (Mihajlovic et al., 2016). The strong emphasis on employability also had an impact on the development of professional HE because it 'provided new impetus for the further development of the college/polytechnic sector and for its creation in a few more countries. In nearly all countries with a binary system the declaration opened a renewed debate on the respective roles of various types of higher education institution and on the profile of their degrees' (Haug and Tauch, 2001, p. 26).

European policy initiatives, particularly the Bologna Process, have played a key role in driving national change. In Austria, for example, the introduction of UAS in the early 1990s is clearly linked to the country's accession to the EU,

⁽⁸²⁾ University education that prepares students for employment (as well as for other aspects of their lives) is not a new phenomenon: 'Vocationalism in university education is as old as the western university itself' (Rospigliosi et al., 2016, p. 206).

responding to overstressed universities as sole providers of (formal) higher education. Reforms such as the establishment of the UAS or greater autonomy for universities were legitimised by arguments of cost effectiveness and labour market relevance of study programmes. Implementation of the Bologna Process has triggered reflections on blurring boundaries between different types of higher education due to harmonisation (in Finland and Norway). In France, the Bologna Process is considered as the main cause for the increasing share of students looking to achieve a bachelor degree after obtaining a BTS (*brevet de technicien supérieur*) or DUT (*diplôme universitaire de technologie*)⁽⁸³⁾.

The rationale and main drivers are often the same for academic drift and vocational drift (securing supply of highly skilled labour, innovation and economic growth, as well as individual and social progression). However, in the case of vocational drift, there is often an even stronger policy focus on graduate employability and professional relevance of programmes/qualifications offered at higher levels (by emphasising a stronger link to the demands of the labour market, de Weert, 2011). The justification of academic drift, however, puts a stronger emphasis on the need to meet increased knowledge and skills demands and on attracting prospective students.

3.4. Epistemological or pedagogical perspective

3.4.1. Vocationally oriented education and training at higher levels

The tension between disciplinary and vocational or professional models of curricula development is discussed within different types of higher education (academic and professional HE). In the disciplinary model, programmes are traditionally developed based on research-generated disciplinary knowledge (Rein, 2012) and methodologies, and there is emphasis on student acquisition of theoretical knowledge (Karseth, 2006, p. 259). The vocational or professional model refers to multidisciplinary knowledge and the emphasis on the integration of theory and practice (Karseth, 2006, p. 260). Karseth (2006, p. 257-258) further argues that the disciplinary model has been dominant in the university curriculum, while the vocational model has been traditionally linked to the professional HE

⁽⁸³⁾ The DUT no longer really fulfils its original function of providing direct entry to the labour market. In 2011, only 12% of graduates entered the labour market directly, while 80% undertook an additional year of study to obtain a vocational bachelor degree. The latter has progressively replaced the DUT for labour market entry (Hippach-Schneider et al., 2017, p. 35).

programmes⁽⁸⁴⁾). However, this dichotomy is also questioned⁽⁸⁵⁾ and vocational and academic drift processes have been observed, along with convergence developments. Barnett et al., for example, state that ‘the production of knowledge has shifted from within the epistemological development of the disciplines, to sites outside of the university where knowledge is applied’ (Barnett et al., 2001, p. 445). Harwood analyses academic drift processes in professional HE, ‘whereby knowledge which is intended to be useful gradually loses close ties to practice while becoming more tightly integrated with one or other body of scientific knowledge’ (Harwood, 2010, p. 413).

With the implementation of the qualifications framework of the EHEA (QF-EHEA) and the EQF, a shift to learning outcomes can be observed in all education sectors and the profiles of qualifications and programmes are increasingly oriented towards these qualifications frameworks or the NQFs referenced to them. Academic and professional HE programmes are based on the level descriptors of the QF-EHEA (Dublin descriptors); higher VET qualifications refer to the descriptors for EQF levels 5 to 8. The QF-EHEA’s respective cycle descriptors are understood to be compatible with those for levels 5 to 8 of the EQF⁽⁸⁶⁾. While the terminology used is different⁽⁸⁷⁾, there is a close conceptual and terminological relationship between the two framework level descriptors. Nevertheless, the main difference is that the EQF descriptors focus on the relevance of learning outcomes in study as well as in work situations, while the Dublin descriptors mainly refer to study and research situations: ‘while some indirect references are made to the labour market relevance of qualifications (...candidates are expected ‘to apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation...’), this is not done systematically’ (Cedefop, 2013, p. 14-15). These

⁽⁸⁴⁾ This dichotomy or tension can also be observed between higher education and VET in general: the predominant focus in VET is on action-oriented capability in functions, tasks and processes (Rein, 2012, pp. 2-3).

⁽⁸⁵⁾ Rein, for example, argues that ‘occupation- and application-oriented bachelor degrees and universities of applied sciences as well as master degrees and research universities have to follow the same scientific and discipline-related paradigms’ (Rein, 2012, p. 3) since they are both part of the Bologna process.

⁽⁸⁶⁾ This is formally stated in the EQF recommendation, Annex II (Council of the European Union, 2017).

⁽⁸⁷⁾ The Dublin descriptors refer to the following five dimensions: knowledge and understanding; applying knowledge and understanding; making judgements; communication; and learning skills. The EQF level descriptors are structured as: knowledge; skills; and autonomy and responsibility.

qualifications frameworks provide some variations in reference points for the development of higher education and higher VET programmes.

Vocationally oriented education and training at higher levels clearly has a strong orientation on vocational learning outcomes, as the study *Higher vocational education and training in the EU* reveals. The study analysed the balance between academic (general) and vocational learning outcomes in the profiles of the 63 programmes or qualifications studied (belonging to professional HE and higher VET) and observed that the majority (38) 'are considered to have a focus on vocational learning outcomes (i.e. with a share of more than 50% related to vocational learning outcomes). For one third of the cases, the balance between academic (general) and vocational learning outcomes is considered equal' (European Commission, 2016b, p. 75).

Several changes in the case study countries during the last two decades indicate vocational drift in the content or profile of vocationally oriented programmes and qualifications at higher levels. Academic drift can also be observed.

In some cases, universities aim to change curricula to strengthen the vocational components, and thereby the employability, of graduates. However, the results and the success of these developments differ.

For example, developments towards a vocational drift at Austrian universities can be observed as a result of introducing the Bologna structures, albeit with different consequences for different fields of study. Study programmes in social sciences, humanities or arts have shifted those learning outcomes that are clearly transferable to the labour market (such as in connection with the application of methods) to the early phase of the study programme to give bachelor programmes more value. In the technical field, the bachelor programmes were (over)loaded with content to strengthen their position in relation to higher VET and so became more demanding.

The introduction of the bachelor degree at Italian universities in 2007 aimed at providing technical skills and faster access to the labour market. However, these aims were not reached and the programmes were considered as overemphasising theoretical aspects. This led to the introduction of professional bachelor degrees in 2016. University masters (levels I and II), introduced in 2004, which are specialised higher education courses with a strong vocational component in their profile, as well as the 2007 higher technical education (ITS), which offer SCHE, seem to be more successful in this regard. ITS, for example, offer programmes in which academic contents and vocational elements are integrated to develop high level professional skills and guarantee easier and faster access to the labour market.

The vocational shift of curricula across higher levels, based on employer input, can also be observed in UK-England. This reflects the recognition that employer input is essential to ensuring that the taught educational material is relevant, and that students acquire the necessary skills to improve their employability. In the case of apprenticeships, the standard, which essentially specifies what the apprenticeship is meant to deliver, is designed with substantial employer involvement. Employers can propose to government a standard for an occupation that is not already covered by an apprenticeship. The employer – or employers – can then work with government to develop the standard for that occupation, ensuring that the needs of the employer and labour market will be met. There has to be an educational element that provides the theoretical underpinning knowledge to meet the required standard.

In some countries, both vocational and academic principles have been strengthened in higher education programmes, leading to a blurred distinction between different types of programme⁽⁸⁸⁾. General convergence of higher education programmes (formal and non-formal) in France can be observed due to academic and vocational drifts. For example, short-cycle VET programmes (EQF level 5) have increasingly included more general and interdisciplinary approaches and the more traditional long-cycle academic programmes (EQF levels 5 to 7) have introduced learning outcomes and competences approaches (as well as more internships and more teaching by industry/enterprise professionals). The most obvious change is within universities, which have taken much more account of the need to develop the knowledge and skills (including transversal or soft skills) required for the labour market without abandoning academic knowledge and general cultural approaches, in particular through greater interdisciplinarity (cross-fertilisation between traditional disciplines).

Norway has experienced harmonisation. Vocational programmes such as teacher training, nursing and engineering have been restructured and upgraded from upper secondary or intermediate levels to bachelor programmes in university colleges (professional HE) over recent years. Changes can also be observed in the content and profile of these vocational programmes. The general tendency is towards greater emphasis on theoretical and abstract knowledge. Smeby (2011, p. 2) describes the development in curricula as a movement from a craft model towards an academic model. In the new bachelor programmes, greater emphasis was put on theoretical knowledge at the expense of more

⁽⁸⁸⁾ This is also due to the fact that graduates of all higher education programmes (of whatever kind) are expected to be able to develop new research-relevant questions at the end of their studies.

practical elements (Smeby, 2011, p. 3). The connection between vocational programmes and the occupational sectors was weakened⁽⁸⁹⁾. State authorities have also emphasised that professional HE should be research-based; this has been one of the requirements to obtain institutional accreditation (Heggen et al., 2010). The university college sector in Norway is thus considered among the most theory- and research-oriented in Europe (Heggen et al., 2010). Despite the ideal of research-based education, however, the ‘belief in [the merits of] research-based education is not research-based itself’⁽⁹⁰⁾. Previous research and critical public debate seem to indicate that the programmes have become theoretically oriented in a way that relates less to the practical tasks that students face during practice. However, a recent book chapter (Messel and Smeby, 2017) compares the curricula for these programmes in recent decades and presents a mixed picture in which what they call research drift in higher education does not automatically lead to academic drift in curricula.

, UAS and research universities in the Netherlands have adopted the Bologna structures and grown closer, including an overlap in research topics⁽⁹¹⁾. At first glance, it seems that the UAS are moving towards an academic approach, while the research universities are pursuing a practical approach that meets the requirements of an increasingly changeable labour market. Nevertheless, the development of programmes at research universities continues to be based predominately on the academic or subject-specific model. Nor have UAS simply become more academic. The developments could be better characterised by strengthening of their profile in practice-oriented research. UAS differ from research universities in their practice-oriented profile, although they have also strengthened their research component (with an application-orientation rather than an academic one). Some have warned against excess of academic structures in the UAS, especially requiring a thesis from each UAS student⁽⁹²⁾.

⁽⁸⁹⁾ Another tendency was that relevant occupational practice was removed as a requirement for enrolment (Smeby, 2006, p. 6). While there is a general tendency towards academic drift or research drift in the university college sector, there are also differences between programmes regarding their content and profile. Academic drift seems to have been stronger in some programmes, such as teaching and nursing, than in others, such as engineering.

⁽⁹⁰⁾ According to the researcher Jens-Christian Smeby (interview).

⁽⁹¹⁾ Gaps remain in skills levels between bachelor programmes offered by UAS and research universities: the latter have introduced bridging programmes for bachelors from UAS who want to enrol in their master programmes.

⁽⁹²⁾ HogerOnderwijs.nu: Nieuws, 3.11.2015. *HvA-docent: Hbo-scriptie is te academisch geworden* [Lecturer at Amsterdam University of Applied Sciences: The professional bachelor thesis has become too academic]:

However, the thesis is also work-practice to demonstrate the ability to perform practice-oriented analyses, self-management, writing skills, and presentation skills. While the format is academic, and may not be directly useful for all students, the skills, if developed correctly, can be beneficial to students as they enter the job market and explore practical issues in their profession.

Different phases of strengthening academic and vocational principles in professional HE can be observed in Finland. The UAS reform marks an obvious academic shift for all former post-secondary colleges. The form of the shift has varied from field to field, but theory-based learning has increased in every field: as example, a thesis has become compulsory in every degree. Academic study methods have generally become more popular in the UAS. During the 2000s, the academic orientation was further strengthened when research, development and innovation (RDI) activities became an integrated part of the UAS programmes, increasing the emphasis on innovativeness and research orientation in all degrees. However, there have been arguments that abstraction of the knowledge taught in UAS has gone too far, creating a demand for more working-life orientated degrees. The Bologna process has changed the direction from 2008 onwards, increasing the orientation towards working life needs in UAS education and introducing more skill-based curricula.

Increased focus on transversal learning outcomes can be observed in most vocationally oriented education and training programmes at higher levels, as the examples from the case study countries show (⁹³).

In France, at all EQF levels, there has been an increasing search for a balance between occupation-specific and transversal learning outcomes, particularly soft skills such as the capacity to adapt oneself to new situations or new issues to solve. However, in most cases, the higher the level of a qualification or programme, the more specialised knowledge is required. In Austria, most of the programmes at higher levels in the formal field (professional HE and higher VET) generally include transversal learning outcomes such as (subject-specific) language and social skills; non-formal higher VET programmes are often more focused on their professional field. VET colleges (higher VET,

<http://www.hogeronderwijs.nu/2015/11/hva-docent-hbo-scriptie-is-te-academisch-geworden/>

⁽⁹³⁾ Transversal learning outcomes (communication and learning skills) are also emphasised by the Dublin descriptors and some NQF level descriptors. The labour market relevance of NQF descriptors is often sought by emphasising transversal skills and competences relevant to study and work. Some countries, such as Finland and Iceland, have even included key competences in the NQF level descriptors (Cedefop, 2013, p. 17).

formal education sector) have a specific role in this respect as they provide a double qualification. While the vocational learning outcomes refer mostly to broader vocational fields, colleges also include a relevant share of general and transversal skills in their curricula.

Both the research universities and UAS in the Netherlands offer their students a transversal skillset that can be used in academic and professional environments to ensure their employability. Although the UAS remain professionally oriented, their practical research component has been strengthened and they aim at developing competences on how to apply transversal (communication, team work, entrepreneurship, taking responsibility) and research skills in a practical environment (as seen in the nursing degree). Despite the fact that professional knowledge is still a key aspect of the training, the focus may shift depending on the discipline and school. UAS generally offer higher education programmes (at EQF levels 5-7) and so include broader skills sets than VET programmes (at EQF levels 2-4).

New curricula for master craftsman education in Norway (higher VET) were adopted in 2016, with three main elements: business management/entrepreneurship, professional management, and vocational specialisation. The curriculum for business management is common for all master trades. Professional management is adapted to various trade groups, while vocational specialisation is for a specific aspect within the particular trade. The new curricula represent a shift in emphasis from the general to the occupation-specific by establishing a stronger link between the education and the specific trades (Espelien et al., 2016).

Higher VET programmes and qualifications traditionally have a strong focus on practice-oriented knowledge and less on academic or discipline-based knowledge. Few changes have occurred in this regard during the last 20 years. The following observation from Norway seems to be an exception: some of the two-year technical vocational colleges offer courses with greater emphasis on academic knowledge. A main motive is to attract more students, with preparation for an institutional change of status to higher education (Kyvik, 2016, p. 175).

To sum up, the profiles of vocationally oriented programmes and qualifications at higher levels often include both academic and vocational components. The competent authorities are trying to find the right balance and seem to have changed their positions on this spectrum more than once in recent years. There is some convergence between different types of higher education programme, while higher VET programmes and qualifications mostly maintain the traditional focus on applied knowledge. Transversal learning outcomes are becoming increasingly important, which indicates a shift towards broader profiles.

3.4.2. Pedagogical/didactical approach and learning sites

The strong focus on practice-oriented learning methods, and particularly on workplace learning, is a key characteristic of vocationally oriented education and training at higher levels. However, its presence varies. This is confirmed by the study *Higher vocational education and training in the EU*: ‘in 47 out of the 63 higher VET programmes/qualifications studied, the extent of work-based learning is considered ‘medium’ or ‘large’. ... Work-based learning plays an important role across all segments of education and training. In many cases, it is not possible to make a general statement about the type and extent of WBL [work-based learning] within one type, due to significant variations across providers and/or programmes’ (European Commission, 2016b, p. 76).

Work-based learning is traditionally of high relevance in higher VET programmes or qualifications, as the examples from the case study countries show. However, this does not necessarily mean that internships are included: in some cases learners must have several years' work experience to enter the programme or gain access to the relevant exam. In others, programmes are offered part-time and can be combined with full-time employment, either as evening courses or as a combination of seminars and online courses (such as the master craftsperson education and training in Norway).

The more school-based types often include different forms of internship but there are some indications that this element will be strengthened. While internships for most fields in Austrian VET colleges had already been mandatory (and were often taken during summer holidays), commercial VET college compulsory internships were introduced in 2014, to strengthen their vocational orientation, which had occasionally been criticised as too weak. A study of practice periods in vocational colleges in Norway found that only 15% of the programmes had practice placements with supervision at a workplace outside the school (Storm, 2012). One reason for this is that many vocational college programmes are aimed at students with prior work experience (some programmes are also offered as part-time programmes for workers). In programmes with work placements (most common within health care studies), practice periods typically account for 20-30% of the education. A government committee set up to examine the tertiary vocational sector suggested introducing mandatory practice in all programmes in the vocational college sector (Norwegian Government, 2014). The committee stated that undertaking relevant projects in cooperation with a workplace should count as practical training (Kyvik, 2016, p. 166).

There is usually a strong focus on practice-oriented teaching and learning methods in professional HE; this includes conducting development projects and applied research in cooperation with companies. In Finland, for example,

research, development and innovation (RDI) activities are an integrated part of UAS activities. Development projects carried out for real companies are an important part of the studies in many degrees. Typically, the different project work is presented at the school and graded according to UAS requirements. The development projects are also carried out as multidisciplinary exercises that bring together students from different fields, such as engineering and nurses working together with health care technologies (⁹⁴).

Workplace learning or internships are increasingly included in higher education programmes as recommended by the Leuven communiqué (2009) which encourages work placements embedded in study programmes as well as on-the-job learning (⁹⁵). It is generally acknowledged that gaining relevant work experience during higher education studies supports seamless transition into working life and graduates' employability, enhancing career prospects (⁹⁶). For example, according to the Confederation of British Industry, the attributes of employability are a positive attitude, a strong ability to self-manage, the capacity to act as a team player and to think in an entrepreneurial way, problem-solving and communication competences, arithmetic skills and technical understanding. A study undertaken by the Scottish Centre for Research in Education revealed that companies particularly value higher education graduates who exhibit these properties. Graduates should also be able to display management competence while still being able to accept leadership. There is consensus between employers and graduates that work experience, practical placements and activities outside the institute of higher education promote the desired attributes (Lowdon et al., 2011, p. 12).

How, and to what extent, work experience is integrated into higher education programmes and qualifications differs widely. In UK-England, for example, there is much evidence that academic courses, or at least the participants on academic courses, are now expected to take part in a wider range of vocational activities,

(⁹⁴) Most of the UAS are multidisciplinary and have emerged through several merges of former colleges. That helps support the multidisciplinary approach in many cases.

(⁹⁵) As acknowledged by the latest *Bologna process implementation report*, most 'EHEA countries have regulations or incentives to include practical training and work placements for at least some higher education institutions and/or programmes' (European Commission et al., 2018, p. 234).

(⁹⁶) This has been demonstrated by analyses of empirical data on a large-scale study of Portuguese first-cycle study programmes (Silva et al., 2016). Other research, however, suggests that the impact of work placements is not so clear and more needs to be understood about the relationship between work placements and graduate outcomes before claims about their positive impact can be made (Wilton, 2012; Calvo, 2011).

such as sandwich placements or summertime work experience placements. This tends to be delivered under the umbrella of employability measures (Hogarth et al., 2016). Sometimes these are delivered within courses (and have become part of the curriculum) but more commonly they are likely to be optional activities in which students are expected to participate.

In academic HE (usually offered at universities), the internship approach differs across programmes and there is no comprehensive overview. However, mandatory internships that are clearly integrated into curricula do not seem to have a strong tradition at universities and there is no unambiguous evidence that the situation has changed substantially in recent years (⁹⁷).

No general increase of mandatory internships can be recognised in Austrian universities where there is a complex and unclear situation in this respect, despite an ‘overall increasing practice-orientation’ (Eichmann and Saupe, 2011, p. 32). In Finland, it is up to each faculty at a university to decide whether internship is a compulsory part of the degree. That means that education institutes have some freedom on where they place themselves on the academic and vocational axis. Bachelor degree programmes in Italy include voluntary internships in two forms (⁹⁸):

- (a) those carried out during the course that aim to integrate the knowledge acquired through the acquisition of professional experience;
- (b) internships following the completion of the degree programme; these aim at supporting graduates in making their professional career choices, providing them the opportunity to obtain additional skills for accessing the labour market and/or supporting them in preparing for the enrolment exams for regulated professions.

However, in some countries there is an increasing emphasis on workplace learning and in particular internships in higher education programmes. In Norway, several bachelor and master programmes offered at universities have recently introduced practice periods in their study programmes to increase the employability of their graduates (Kyvik, 2016, p. 164). One example is the master programme in cultural heritage offered by the Norwegian University of Science and Technology. This includes an eight-week training period with a further two-

⁹⁷) For a discussion on the challenges of integrating the workplace as learning venue for universities and academics in general see, e.g. Boud and Salomon, 2001; Salomon, 2001; Winter, 2001.

⁹⁸) The highest number of internships is found in the health and medicine sector, while the others are distributed between public institutions and administrative national bodies, schools for teachers, legal and regulated professions.

week period of complementary work and report writing. Internships are also offered in disciplinary programmes; in political science at the University of Oslo, a practical module has been offered as an optional component of the master programme since spring 2017. In the Netherlands, where bachelor programmes at research universities have a focus on theoretical components, there is also a shift towards more work practice. The Socioeconomic Council (*SER, Social Economische Raad*) has recently called for more internships as part of the programmes at research universities (SER, 2015).

Programmes offered within professional HE usually include compulsory internships, sometimes up to a full semester (as in Germany and Luxembourg) ⁽⁹⁹⁾. However, there is a great diversity. There are also higher education programmes that are defined as professional HE in the national context but lack external learning phases; some require several weeks of internship but the two learning venues and learning phases are not continuously merged and linked, while others are offered as apprenticeships. This leads to a variety of pedagogic approaches in professional HE ⁽¹⁰⁰⁾.

There has been the following developments during the last two decades in the case study countries:

- (a) sharper focus on integrating internships into study programmes in France (with a long tradition of vocationally oriented education and training at higher education levels) and Italy (where professional HE has more recently been introduced). In France, over the last 30 years, a general trend for vocationally oriented degrees has been to give more importance to internships and work-based learning, but also to transversal skills and interdisciplinary knowledge. This is particularly true for qualifications at EQF levels 5 and 6 (mainly *diplôme universitaire de technologie*, DUT; *brevet de technicien supérieur*, BTS; and professional bachelor programmes) in all fields. In the Italian higher technical education (ITS) programmes, about 30% of learning takes place in companies. Internships are also included in 70% of university master programmes (levels I and II) and have significantly increased since 2004, also because the cooperation between universities and employers/labour market stakeholders has grown. 50% of the recently (in 2016) introduced professional bachelor degrees (two-year courses) and the pilot courses commencing in 2017/18, are conducted as internships

⁽⁹⁹⁾ In Germany, typically, a bachelor programme at a UAS is one or in some cases two semesters longer than at universities, especially when there is a specific practice semester integrated in the programme.

⁽¹⁰⁰⁾ For examples see Camilleri et al., 2014; or Hippach-Schneider and Schneider, 2016.

- (possibly managed, designed and coordinated by a board of economic stakeholders and partners cooperating with the universities). A tendency to increase learning at the workplace can also be observed in the Netherlands, but also other forms and learning environments are emerging based on digital methodologies;
- (b) in Finland, there is also strong emphasis on workplace learning in professional HE; this is even stronger in master programmes. UAS bachelor degrees are largely school-based learning (Arene, 2007) with compulsory internship periods, which vary from degree to degree and last for half a year to a year. Typically, part of these internship periods can be accomplished during the summer breaks. The UAS master degrees strongly emphasise work-based learning. The thesis is a major part of the degree and is done typically for the employer of the student. Students in UAS master programmes do not generally have the status of interns but the degrees are aimed at those in working life and most students have permanent jobs. The idea is that these students can develop their expertise while working and the employers benefit from the development work (Ojala, 2017);
 - (c) in some countries (such as Austria and Norway), the emphasis on work experience and internships changed over the years. In the university college sector in Norway the general long-term trend has been less emphasis on learning through work practice. However, many of these developments took place before the 1990s (Kyyik, 2016, p. 164). Theoretical knowledge has been strengthened in vocationally oriented programmes at bachelor level over time, at the expense of practical training. This change can be related to the removal of work practice as an entry requirement as well as to the reduction in practical training within the programme. However, the role of work-based learning varies between different vocational programmes. It plays a major role within teaching and in health and social studies. The relationship to practice is important in engineering and business administration programmes, but the workplace is not used as a learning site to the same extent (Kyyik, 2002). In Austria, UAS were generally more practice-oriented when they were introduced in the early 1990s and they had put much effort into investigating the best possible approach of 'practice-oriented higher education' (Markowitsch et al., 2004). In the course of adaption to the Bologna-structure, the overall extent of internships had to be reduced: in a bachelor programme it was no longer possible to include a whole practice-semester (internship) as it was with the initial diploma-programmes (Humpl, 2011). Today internships are compulsory for at least 15 weeks, so it can be claimed that the work-based share of UAS programmes was reduced.

In addition to internships, specific formats for strengthening workplace learning have been introduced during the last two decades. Some higher education studies are designed to combine company-based training and higher education learning in a systematic way; in some cases they lead to double certification in the acquisition of a vocational qualification and a bachelor degree. This can be understood as an ‘upgrading of the dual-training principle’ (Graf, 2017, p. 7). This is the case for the dual study programmes in Germany, Austria and the French Community of Belgium (¹⁰¹). Other forms with a similar design include apprenticeships at higher levels (in France, Italy and UK-England) and work-based bachelor programmes (in Norway). Professional doctorates are offered in the UK.

In Germany, the link between theoretical and practical knowledge is of particular importance in the dual study programmes.

Box 8. Dual study programmes in Germany

A dual programme is defined as a course of study with integrated vocational training or periods of practical experience in a company. It differs from traditional courses of study in its increased practical orientation. Another key feature is the two learning locations: university and business. Vocational practice and study are closely integrated with each other. Teaching applied competences plays a larger role than in universities (Wissenschaftsrat, 2010). During the internships students try to deepen or enlarge their theoretical knowledge. Dual study programmes ‘occupy a special “hybrid” position at the nexus of VET and HE – combining institutional elements from both fields’ (Graf, 2017, p. 5) and they differ from the ‘traditional sequential VET-HE model in which ambitious, academically motivated individuals first complete dual-apprenticeship training and later move on to study at a university of applied science’ (Graf, 2017, p. 11).

To date there have been different models of dual study programme with major differences in how the correlation between the two learning locations is organised and

(¹⁰¹) In Ireland, there is a form of training related to dual studies, called ‘sandwich courses’. These courses are designed for three to four years, with the third year being spent entirely in one company. The practical phase takes place in a block between theoretical training and the preparation of the final thesis. These practice-oriented courses of study are still known in Ireland under the terms ‘cooperative education’ and ‘intra (integrated training) placements’. Sweden also has a branch of education similar to the German dual system. It is known as ‘coop education’ or ‘work integrated learning’. There is the option of extending a bachelor programme from the standard period of study of three to four years to enrich the theoretical training with practical activities in business. The model is best developed at University West (Högskolan Väst). In the Netherlands, the practical part of a dual course of study can be completed in a block year as the third year of study, or parallel to the course of study, depending on the university/university and company. In this model, however, ECTS (European credit transfer system) points are earned exclusively through academic achievements at universities (Bode et al., 2012).

how closely work and learning are linked. A dual programme can incorporate training, employment or work-experience:

- a dual programme with training component (occupation integrated dual study programmes) combines a course of study with training in a recognised occupation. In addition to the degree, graduates obtain a vocational qualification;
- dual programmes with a work experience component combine a course of study with extended practical phases with an employer. Students obtain a university degree but not a recognised vocational qualification (^a);
- a dual programme with employment component (practice integrated dual study programmes) is primarily aimed at people who have already completed vocational or professional training and/or already have several years of professional experience. It is designed to offer further professional development and combines a course of study with professional experience directly relevant to the course. The amount of time the student spends in the classroom and at the place of work is agreed in a contract between the institution, the student and the employer (^b).

These types of higher education programme are expanding rapidly: currently, they represent about 6% of all higher education programmes and 3.3% of all students in higher education. More than half of these dual study programmes are offered in engineering (Graf, 2017, p. 5).

(^a) These first two models of dual study programmes are regarded as initial study programmes. A general university entrance qualification is normally required to enrol in these programmes (*Allgemeine Hochschulreife* or *Fachhochschulreife*) along with a contract of employment.

(^b) This model of dual study programme is regarded as continuing education. A general university entrance qualification (*Allgemeine Hochschulreife* or *Fachhochschulreife*) is not required for access.

Source: Case study Germany.

Austria has a few, recently introduced, dual studies at UAS with different forms and amounts of on-the-job training. The introduction of dual studies at UAS and their strong consideration of work-based learning is vocational drift within higher education. In comparison to Germany there are few in Austria: looking at the small and medium-sized structure of the Austrian economy their further dispersion has to be questioned. Similar to Germany, there are three approaches to how work-based learning is considered in dual studies (¹⁰²).

In UK-England, IVET has been promoted preferentially through apprenticeship training over the last 10 years. This is considered the most cost-effective means of providing the skills that the economy needs and also applies to higher levels. Professional doctorates were also introduced two decades ago.

(¹⁰²) <http://www.studieren.at/duales-studium> [accessed 28 June 2017]

Box 9. Higher-level apprenticeships and professional doctorate in UK-England

The development of vocationally oriented education and training at higher levels relates to meeting a perceived demand for skills that the traditional higher education sector might not be able to meet, either because it is too theoretical and/or too high a level. Much vocationally oriented education and training at the higher level has become concentrated at the sub-degree level. But there is an increasing preference to move away from classroom-based pedagogy – such as in the foundation degrees – to an apprenticeship model at the higher levels.

The introduction of higher level apprenticeships means a mix of classroom and workplace-based training, but this is in the early stages of development. With the growth of higher-level apprenticeships, one expert interviewee noted the need for balance between the vocational and academic elements of these courses. The expert stated that there is a risk of students doing what needs to be done to get the job but failing the degree or not completing the professional qualification. To offset this, courses should be delivered in an integrated structure, in which one part cannot be achieved without completing the other. At the moment there is no evidence to compare apprenticeship provision with that in further education colleges or HEI ^(a).

Professional and practice-based doctorates were introduced in the 1990s to provide a higher qualification for already experienced practitioners in various fields, such as engineering, management, and education. They focus on professional work and employment-related skills and usually require a reduced thesis length in comparison with a PhD, but with the same requirement for originality. The professional doctorate 'emerged in response to the needs of universities to expand student numbers and to diversify programmes, the needs of practitioners for higher forms of professional development, the needs of some professions for higher-level qualifications, and the greater legitimacy accorded to workplace learning and workplace-generated knowledge' (Scott et al., 2004, p. 21).

^(a) The problem with apprenticeships – notwithstanding the introduction of the apprenticeship levy on employers – is that it has proven difficult to persuade a sufficiently large population of employers to provide them.

Source: Case study UK-England.

Apprenticeships in France, at one time confined to secondary level, are now progressively increasing in higher education; around 25% of manufacturing BTS/DUT ⁽¹⁰³⁾ programmes are now taken through apprenticeships, along with 31% of vocational bachelor programmes (Hippach-Schneider et al., 2017, p. 34). Higher-level post-secondary apprenticeships, which were developed in France in the 1980s, have enjoyed a rise in popularity in recent years. In 2011-12, one-third of all apprentices were at the post-secondary level, accounting for more than 120 000 students; that level represented less than 5% of apprentices in 1995-96 (OECD, 2014a, p. 28).

⁽¹⁰³⁾ BTS – *brevet de technicien supérieur*, DUT – *diplôme universitaire de technologie*.

The higher education and research apprenticeship programme launched in 2011 can be regarded as higher education vocational drift in Italy (¹⁰⁴). This programme foresees that young people aged 18-29 can be enrolled in private or public companies (the duration of the company-based part of the training must be at least six months) with the aim of acquiring skills and knowledge useful for the acquisition of various qualifications: an upper secondary education diploma, a higher technical education diploma, a bachelor or master degree, and a research doctorate (¹⁰⁵). To ensure coherence, a contract is concluded between the company and the apprentice and the HEI. The qualification acquired after completion of this special learning path is the same as in traditional learning programmes (at ITS and universities).

In Norway, several workplace-based bachelor degree programmes have been established in recent years to meet the training needs of public and private sector employees. One example is a workplace-based bachelor programme in pre-school education. Several university colleges now offer part-time programmes aimed at assistants in kindergartens who wish to become pre-school teachers. The programmes are work-based and the kindergarten is an important place of learning (Kvik, 2016, p. 164).

In addition to work-based learning, new forms are emerging in vocationally oriented education and training at higher education. Various practice-oriented pedagogical and didactic models are used, including case studies, problem-based learning, business games, entrepreneurial companies, and new laboratory forms (Markowitsch et al., 2004). New technologies are also increasingly used and provide new opportunities. For example, in France, learning web-sites, flipped classrooms, and massive open online courses (MOOCs) are increasingly used. This trend has been accelerated over the past 10 years because of the technological change in computers, internet, artificial intelligence and expert-systems. However, there are still traditional courses in *Instituts Universitaires de Technologie* (IUT), *Sections de Technicien Supérieur* (post-baccalauréat classes in high schools, STS), universities, engineering and business schools. In Finnish UAS, the popularity of internet-courses is also increasing but this does not change the fact that learning at the higher level is still school-oriented (Arene, 2007). There are increasing opportunities for part-time and multiform studies

(¹⁰⁴) Many of the training courses are linked to master and bachelor degrees in mechanics, logistics, public service and law.

(¹⁰⁵) In general, for doctoral programmes carried out in cooperation with industry, the academic principle would have to be examined to see whether they fulfil the requirement to publish the results independently.

tailored to enable adults both working and studying at the same time. Multiform requires less contact or learning at the workplace and includes more e-learning, individual project work and completion of tasks (Kiviniemi et al., 2013). In Finland, the validation and recognition of skills and knowledge acquired has also been improved. For example, the skills that the student has acquired in his or her professional life, sometimes even in his or her free time, are credited for studies at UAS.

Most changes can be observed in the pedagogical-didactic approach and the use of companies as learning sites are examples of vocational drift. In the last two decades, on-the-job learning has increasingly been integrated in different ways into vocationally oriented education and training at higher levels, either in the form of internships as part of the programmes or as new formats of dual or apprenticeship training. This development can be observed both in traditional academic HE programmes and in professional HE. Learning in the workplace has traditionally been of great importance for higher VET. However, there are also indications that academic principles or research competences have been more strongly emphasised in professional HE in some countries.

3.4.3. Teacher-student relationship and teacher background

The strong focus on work-based learning suggests that teachers and trainers in vocationally oriented education and training at higher education levels have a professional background or work experience more often than teachers in more academic HE. This was confirmed by the study *Higher vocational education and training in the EU* (European Commission, 2016b).

Teachers in programmes that prepare for higher VET qualifications often seem to have work experience. However, the situation and trends identified differ between school-based programmes and professional qualifications acquired through competence tests. While the latter primarily requires relevant work experience, school-based programmes generally require professional and academic qualifications.

In Germany, for example, not all teachers need an academic degree: the aim of vocational schools, and so of trade and technical schools, is characterised by a particular combination of vocational and general education, the development of personal qualities and employability, the development of competences and the acquisition of qualifications (Bader, 2008). Teachers in practice-oriented subject areas (*Fachlehrer*, technical teachers) do not require a university degree but a corresponding professional background, a master/foreman/certified supervisor, a technical engineer or an equivalent qualification and formal training in pedagogical practice. Academically qualified teachers (*Lehrer für Fachpraxis*, teachers of professional practice) are trained at universities. Their teacher

training consists of two phases: university studies in the specific professional fields at master degree level, and a subsequent period of preparatory service, after which the second State examination must be taken.

In Norway, there are no national qualification requirements for vocational college teachers. Each institution sets its own competence requirements, according to the vocational college Act. Those programmes closely tied to particular labour market positions (such as technical, maritime and health), are generally assumed to have staff with relevant vocational education and work practice and less emphasis on academic qualifications.

However, developments strengthening the academic component of teacher qualifications can also be observed. In Austria, for example, a new system of teacher training was introduced in 2016 for upper secondary education (including VET colleges). For most of the occupation-specific teachers, the new forms of training include more theoretical and pedagogical training (60-240 ECTS (European credit transfer system)) than before and teachers must obtain a bachelor degree in education. This could be seen as academic drift but teachers of these subjects must also have several years of professional experience at the beginning of their training (¹⁰⁶).

Vocationally oriented education and training at higher levels includes a high share of teachers with work experience; in Italy, at least 50% of the teaching staff at higher technical education comes from the workplace (¹⁰⁷). Nevertheless, there are tendencies to recruit teachers with higher academic degrees (¹⁰⁸): for example, professors who teach at German UAS have generally worked in the

(¹⁰⁶) Austrian Federal Ministry of Education, Science and Research: *Aus-, Fort- und Weiterbildung für LehrerInnen an berufsbildenden Schulen* [Education, training and further education for teachers in vocational schools].
<https://bildung.bmbwf.gv.at/schulen/lehr/lfb/bbs.html> [accessed 12 November 2017].

(¹⁰⁷) As the example from Austria shows, the professional backgrounds and experiences of university teachers can also be very different and depend on the field of study. Changes in this respect in Austria can be attributed to the 'massification' process of universities over the last 30 to 40 years. Due to the growing number of study programmes on offer, many teachers had to be hired. Since this was ad hoc, the current personnel structure shows a multitude of contract forms or connections to the university, and teachers are enabled or even forced to seek also other professional obligations outside of university (Schmid et al., 2017).

(¹⁰⁸) This trend can also be observed in Romania, where a recent law in initial teacher education favours academic qualifications rather than industry knowledge or the 'foreman' qualification for vocational teachers. Teachers in post-high school programmes need to comply with the same requirements as those in upper secondary academic education (bachelor degree). Such a law can create obstacles to the recruitment of those with significant industry experience (OECD, 2014b, p. 29).

relevant profession outside the university environment and have also acquired an academic qualification. This applies particularly to lecturers in dual study programmes, as in UAS and universities of cooperative education (¹⁰⁹). Since there is a need for UAS teachers (especially in engineering and economics but also in health and nursing science), in 2016, the German Science Council recommended increasing attractiveness and strengthening UAS teacher careers to attract more applicants from Germany and abroad. The challenge is that researchers from universities lack practical work experience and for researchers successfully integrated into professional practice there often is lack of incentives to go back to a HEI. The traditional career pathway needs to be complemented by newly created qualification models while the double qualifications of UAS teachers remain an essential feature. According to a group of UAS, a new educational pathway should make it easier to acquire both academic grade and practice experience; an example is a new form of PhD programme, a so-called ‘tenure track’. This model requires future researchers to work for at least three years after their PhD or post-Doc in a company on an agreed, and reviewed, research project (Hochschulallianz für den Mittelstand, 2016).

In Finland, UAS teachers must have academic degrees, a requirement that can be considered as part of the academic drift occurring when post-secondary VET colleges were transformed to UAS. The minimum level is a master degree from a university, a teacher qualification and a minimum of three years of relevant working experience (¹¹⁰). The UAS value PhDs or licentiate degrees, which are required from senior faculty. More than 20% of the faculty members at the UAS have PhDs. Industry merit is typically valued over academic merit and that is one difference between the universities and the UAS. While university faculty is typically recruited based on academic merits such as publications, the UAS faculty usually have to have a long working history in the field in which they will

(¹⁰⁹) The German Science Council (*Wissenschaftsrat*) recommends a rate of 60% of full-time higher education professors and 40% lecturers with a specific contract from practice. UAS generally recommend a rate of 80% full-time higher education professors and 20% practice lecturers (Wissenschaftsrat, 2013). To meet the scientific level of the institutions as HEI the lecturers from practice, often from the cooperating companies, should have equivalent qualifications to the full-time education professors.

(¹¹⁰) Since not that many candidates meet all these requirements, it is common that the most feasible candidate can take the pedagogical qualification while working. Teachers in healthcare have specific requirements: they first need to obtain a healthcare degree at the UAS (such as nurse or physiotherapist), they can then continue their nursing or health science studies at university, and then they can qualify for healthcare teachers at UAS.

be teaching. After the UAS reform the qualification criteria changed. Even though only senior faculty members are required to have a PhD or licentiate, higher degrees are valued in all recruitment⁽¹¹¹⁾. The teaching faculty members are typically full-time at the UAS, but visiting lecturers are used as well. There are also some specific courses that can be led by experts from outside but there are no statistics how common those are.

The Netherlands has experienced significant change in the quality and background of UAS teachers over the last 20 years. In the first decade of the millennium, the quality of teachers was seen as problematic and led to a professional vacuum; teachers – as professionals – did not have the professional space to act as professionals, meaning that they were controlled top-down by management (Brouwer, 2008). Several strategic documents emphasise the importance of improving the quality of teachers in UAS⁽¹¹²⁾. The goal was that, in 2014, 70% of the teachers at the UAS should have a master degree and 10% a PhD degree. In 2011, 66.2% of the lecturers at the UAS had a master degree (Ministerie van OCW, 2013) and in 2009 7.7% a PhD degree; no current data are available to suggest whether the target will be achieved.

In Norway, there has been academic drift in the education and professional background of teachers in university colleges over the last two decades. According to Kyvik and Marheim-Larsen (2010), few teachers in the colleges of engineering and nursing were qualified for and actively took part in research when these colleges were merged into university colleges in 1994. Since then, there has been a marked increase in emphasis on academic qualifications and research activity at university colleges, although still considerably lower than in universities. By 2008, 26% of university college staff was at professor or associate professor level, compared to 75% of university staff (Kyvik and Marheim-Larsen, 2010, p. 227). The NOKUT accreditation and review processes have been seen as inducing academic drift. The accreditation criteria for programmes within higher education include requirements for percentages of staff at various academic levels. At bachelor level a minimum of 20% should have PhD degree or equivalent; at master level 50%, and 10% with professor

⁽¹¹¹⁾ Finland has also invested in PhD education and there is a growing number of graduating PhDs. For that reason, UAS has also managed to recruit them.

⁽¹¹²⁾ Such as: *Action plan: learning-power of the Netherlands* (*Actieplan: leerkracht van Nederland*) (Ministerie van OCW, 2007), *The highest good* (*Hethoogste goed*) (Ministerie van OCW, 2008); the *Strategic agenda higher education and science 2011* (*Strategische agenda hoger onderwijs, onderzoek en wetenschap*) (Ministerie van OCW, 2011) and the strategic agenda higher education and science 2015 (Ministerie van OCW, 2015).

competence. National evaluations of nursing, teacher training and engineering have recommended that the research competence of teaching staff should be strengthened. In 2008, a national commission, set out to propose reforms in the higher education system, argued that a stronger research orientation was needed to improve professional education and professional work (Heggen et al., 2010, p. 47).

In France, the training requirements and professional background of teachers differ in terms of EQF levels: at EQF levels 5 and 6, there is a tendency to attach increasing importance to professional experience in industry and management; at EQF levels 7 and 8, the main criterion for the recruitment of lecturers and professors is doctorates and research publications in professional and other journals. It seems paradoxical that the most famous business schools compete for academic teachers who have published in renowned journals without considering their business experience. This also applies to some universities. To a certain extent, this is the result of criteria derived from international comparison such as the Shanghai ranking. The less renowned engineering or business schools are less affected by this development and the ranking effects but, while engineering and business schools are demanding more and more teachers with doctorates, universities are increasingly using company professionals to teach alongside academic teachers.

To sum up, professional experience is increasingly important for teachers at higher levels, especially in vocationally oriented education and training at such levels. However, this does not necessarily mean that they do not also need to have a higher academic qualification. The case study examples countries show that academic requirements have been emphasised even more in recent years in some cases. This suggests that vocationally oriented training at higher education level requires teachers with both professional experience and academic qualifications.

CHAPTER 4.

Current debates, possible future trends

Vocationally oriented programmes and qualifications at higher education levels feature in current national discussions. The debates and expectations of future evolution differ depending on external factors and developments within a country. The following topics are highlighted in current debates in the case study countries.

Education policies often refer to a demand for a continuing rise in the number of students in higher education; in Europe higher education has expanded during the last 30 years. However, the number of students in higher education is assessed in some countries as too high, and in others as too low; both aspects raise many questions.

In Germany, the shift in the flow of school-leavers towards higher education has prompted public debate in the past few years to focus on the relationships between dual training and higher education. It is considered important to investigate whether, and to what extent, new lines of segmentation and social disparities are emerging in relation to VET and higher education. Clarification is needed on the consequences of this trend both for vocational education and training (VET) and for the higher education system (Authoring Group Educational Reporting, 2016). In Finland, in contrast, a major theme in public debate is the concern that the country is lagging in higher education graduates compared to the Organisation for Economic Cooperation and Development (OECD) average (OECD, 2017). There is a firm belief that higher-level know-how, education and innovation are Finnish competitive advantages.

The debate in Norway is about the level and type of qualifications society needs. The term ‘the master disease’ was coined in this debate, asking whether the increase in the number of academically qualified and the academic content of such education reflects increased need for this type of competence in the labour market, or whether it is driven by professional ambitions and attempts to enhance prestige in education institutions, combined with selection and signalling/credential mechanisms. This debate is underpinned by statistical data that show a future lack of skilled workers and an oversupply of people with general higher education (for latest forecast, see Dapi et al., 2016). Further, there is criticism that the availability of many graduates with master level education increases formal competence requirements at the labour market. Although most of those with academic higher education (academic HE) do find work (Støren et al., 2016),

many are overqualified (Lai, 2011). However, there are also other views; a recent public committee analysing productivity changes claimed that too few undertake education at master and doctoral levels. Their position is based on OECD data that show the share at master or above in Norway is at the OECD average (Norwegian Government, 2016, p. 3).

Some debates refer to the link to initial VET (IVET) provision and transition to higher education: IVET graduates often have fewer opportunities to continue studies in formal education compared to graduates from general education studies. However, actual situation differs across countries and depends on the form of VET offered, as well as on the progression arrangements and the general openness and flexibility of the education system (as analysed in Cedefop, 2018b). The ‘general education premium (the advantages of general education graduates compared to vocational education graduates) is more substantial in apprenticeship countries, in countries with work- and school-based vocational education and in Hungary. The effect of VET on participation in higher education is quite weak in countries with school-based vocational education’ (Cedefop, 2018b, p. 31).

Finland belongs to this latter group of countries but there are concerns that the current reform of upper secondary level VET will have a negative effect on the pathway to universities of applied science (UAS) and universities. This reform puts less emphasis on general education and may weaken IVET graduates’ abilities to study at higher level.

Participation in the VET systems in the Netherlands and Austria is distributed quite equally between school-based education and company-based education and training; VET, and the effect of VET on participation in higher education, is quite strong. A current topic of discussion in the Netherlands is the further development of the associate degree (short-cycle higher education, SCHE) and the increased cooperation between UAS and VET colleges in jointly offering those programmes and supporting smooth transition from VET to higher education. Austria intends to strengthen and improve existing bridges between the apprenticeship system and higher education to ease transition to the latter.

The relationship between different types of higher education provision (academic and professional HE) is a topic of current debate in several countries, with tension observed between further profiling of different types of HEI and increasing or expected harmonisation. In Finland, for example, an important trend is the increasing collaboration between universities and UAS and there are tendencies to merge these institutions. This naturally raises the question of the

distinguishing features of these two types of higher education⁽¹¹³⁾. However, UAS are not currently recognised as equal to universities; there are still prevailing opinions that universities have higher status than UAS and universities are defending their position strongly. This might also be an obstacle for potential future developments, such as the introduction of doctoral programmes at UAS or the improvement of the transition from UAS master degrees to university doctoral programmes; to date, universities have only partially opened their degrees for UAS graduates.

The report of the Commissie Veerman (2010), which is considered the key reference document for the future development of higher education in the Netherlands, indicates that HEIs should specify and differentiate, while focusing on quality⁽¹¹⁴⁾. Gradually, the higher education sector is becoming more differentiated, as higher education institutions (HEIs, both UAS and research universities) seek to develop their own unique profiles in terms of organisation, orientation, programmes offered, research conducted and networks. A future development could be the introduction of PhDs in UAS. A long-term development could be that the binary structure, in which the courses of study (bachelor and master) are offered with a professional and academic orientation and which forms the cornerstone of the Dutch higher education system, will gradually come to an end⁽¹¹⁵⁾. However, while the recent SER (2015) report indicates that the binary structure is under threat, it is also stated that it still contributes to the visibility and transparency of Dutch higher education and its programmes.

Harmonisation of structures between university colleges and universities in Norway has already taken place. The number of university colleges has been reduced considerably, and the distinction between universities and university colleges has diminished. Colleges have merged with universities, colleges have become universities, and several other changes have blurred the boundaries between university colleges and universities, including common legislation, financing system, academic career system and grade system. Kyvik (2016) claims that academic drift in the university college sector has been the most powerful driving force behind the reduced differences between universities and

⁽¹¹³⁾ This discussion refers particularly to engineering and, to some extent, business studies where degrees are already overlapping.

⁽¹¹⁴⁾ An existing issue related to the UAS bachelor programmes is the tension experienced between accessibility, quality, and academic performance (coined as the ‘trilemma’ of professional higher education). The trade-offs between these three goals are most manifest among the UAS that have a highly diverse student population (RCHOO, 2016, p. 21).

⁽¹¹⁵⁾ I.e. de Zwaan, 2017, p. 210-211.

university colleges. Some concerns have been raised that the academisation of university colleges has gone too far and that students are not sufficiently prepared for the labour market due to a lack of integration of theory and practice. Colleges may not perform their function for the labour market if there is no differentiation between them and universities. This type of criticism has come from employers, college lecturers and students, particularly teaching and nursing students, who struggle to relate theory to practice. Yet, among government and the main social partners, there has been relatively little debate about these aspects of the restructuring process.

French higher education does not have a binary structure but tensions between different worlds can still be observed: one main challenge is to create real poles of excellence in technological research and teaching that would have sufficient critical mass to be competitive at an international level. There is still tension between the academic logic of the Ministry of Higher Education and the logic of the Ministry of Labour, which is primarily a confrontation of historically grown cultures, despite the convergence resulting from the simultaneous academic and vocational drift processes throughout the higher education system.

Work-based learning and cooperation with businesses are commonly seen as important aspects; discussions are continuing on how this can be strengthened and improved (not only in terms of quantity but also in quality). In Austria, the role and shape of work-based learning and cooperation with enterprises in vocationally oriented education and training is being considered and it can be expected that this will be increased, also at higher levels. Similarly, in France, trends in developing better cooperation with the industry and enterprises are expected to continue, as well as increasing effort in research, and research and development, in vocationally oriented education and training at higher levels. In the Netherlands, developments in the technical industry are requiring further consolidation and cooperation between UAS and labour market stakeholders. There is a focus on further encouraging flexibility through interdisciplinary add-ons in educational profiles on top of a solid basic knowledge (covering broader professional profiles)⁽¹¹⁶⁾. In addition to the need for specialisation and differentiation, the nursing and engineering sectors particularly indicate development in the broadening of the degrees by a focus on transversal skills; this trend is driven by the labour market⁽¹¹⁷⁾.

⁽¹¹⁶⁾ HTNO Roadmap 2025, 2016.

⁽¹¹⁷⁾ Hoger Onderwijs Groep, n.d., p. 19.

In Germany, the discussion on how to shape links with the labour market is highlighting dual study programmes at UAS. In some cases, there is no link between the job and study at the HEI, but still the term 'dual study programme' is used. In its recommendation on the development of the programme, the German Science Council (Wissenschaftsrat, 2013, p. 28), proposes that at least half of dual study programmes should be spent at the academic learning venue and at least two thirds of the credit points should be acquired from theory-based work, but not necessarily at the HEI. It also calls for organisational and/or scheduling coordination between the learning venues as a minimum, and for the degree subject to be chosen for its affinity to the vocational training programme or job, in order to create content-based reference opportunities (Leichsenring, 2015).

Another aspect is addressed in UK-England, where the current debate is centred on the value for money provided by higher education. Analysis of the rates of return on obtaining a first degree indicates that earnings are higher, other things being equal, than if the individual gained the qualifications that grant entry to higher education but did not take the option for some reason (e.g., Britton et al., 2016; Walker and Zhu, 2013). The earnings and employment premia have remained more or less stable over time, even as the numbers entering university have increased. Given that so many people now enter university there has been concern that the methodology used to estimate the graduate premium may be flawed (Gambin et al., 2014). There remain concerns that the returns for some groups of students may be relatively low – especially where they have studied at non-elite universities and have studied courses which are not linked to the labour market – to such an extent that they will not reach the earnings threshold at which the loans they took out to fund their higher education need to be repaid. Given that these loans are underwritten by the government there are legitimate concerns relating to the extent to which the tax payer will need to meet the cost of any shortfall. This has tended to focus interest in developing an alternative to university-based higher education. The important development in this regard is that of higher or degree level apprenticeships. These are at an early stage but they are, like the rest of the apprenticeship system in England, based on standards that employers (or their representative organisations) are involved in developing (DfE, 2017). So they are very much linked to the demand-led skills agenda that tends to dominate the discussion on skills in England (and the UK more generally).

While, for some countries, vocationally oriented higher education and training is still novel and the current debate is focused on consolidation of this

type of provision (such as in Italy⁽¹¹⁸⁾), other countries are discussing the development of further offers at higher education levels (such as lifelong learning offers) or to introduce new types of HEI. In the Netherlands, for example, the current debates relate to making higher education more flexible and accessible for non-traditional students and increasing the role of HEI (mainly UAS) in lifelong learning. This includes experimentation with the part-time higher education pathway, flexibilisation in paying college fees, experimentation in demand-side funding, and applying a more modular approach to higher education programmes. Experiments are currently being conducted on all those topics which should inform future policy development. In Austria, it is also expected that HEI (universities as well as UAS) will continue to try to establish their offers of further education, both in the non-formal sector and regarding postgraduate courses. It is yet not clear in how far they will succeed in competing with purely commercial providers or high-profile competitors from abroad⁽¹¹⁹⁾. There are plans in France to develop powerful technological universities (*universités technologiques*) such as the MIT or Cal Tech in the US or the Polytechnic Institutes of Lausanne and Zurich in Switzerland. A paradox is that the public image of technological universities in France remains ambiguous, despite the good ranking of the first technological university established in 1972: the University of Technology of Compiègne is ranked second for the quality of its engineering programme, just after the *Ecole Polytechnique*.

Current debates in some countries are on attempts to enhance the visibility, status and role of higher VET. In Germany, the growing numbers of programmes and students in the UAS sector, and particularly the increasing attractiveness of dual study programmes, has put pressure on the advanced vocational education sector, emphasising the need to make this option more visible⁽¹²⁰⁾. Higher VET is generally emphasised as important in tertiary education: the term tertiary is no longer used as an equivalent to higher education and VET is not seen as only

⁽¹¹⁸⁾ In Italy, a national steering committee was implemented to define goals and priorities for improving Italian tertiary education. The focus is on strengthening the link to the labour market and increasingly including vocational principles in content and didactical programme methods. This type of higher education should be expanded, since it is considered poor and not sufficient.

⁽¹¹⁹⁾ Moderate expansion of private universities can be expected in Austria. They are expected to succeed if they manage to focus on profitable sectors (e.g. medicine, STEM), guarantee an advantageous support service for their students, and acquire students from abroad (Schmid et al., 2017, p. 155).

⁽¹²⁰⁾ For 15 years another debate has pointed out that this type of advanced German VET can only survive through strong academic inputs and hybridisation.

part of secondary level education. To make advanced vocational education (including master craftsman qualifications) more visible, an initiative, strongly supported by the chambers, was started to establish a brand *Höhere Berufsbildung* (higher VET) and intensify public communication about this traditional vocational pathway. Attractiveness and career chances are to be emphasised, as well as the parity of esteem with higher education. Creating a brand is also suggested in a study of an institute related to the German industry (Flake et al., 2016) (¹²¹). Similar attempts can be observed in Austria. In both countries, NQF implementation is important to this.

Discussion in Norway is less about the master craftsman qualification and more about the role of the vocational colleges. Since 2003 some colleges have gained accreditation for higher education bachelor programmes, in addition to vocational education programmes, and become hybrid university colleges/vocational colleges (academic drift). Those with technical, maritime and health programmes that build upon upper secondary VET, however, have remained within the vocational college sector. The government and the main social partners have expressed commitment to further developing this sector. Vocational colleges are seen by these actors as important in addressing current and future competence needs in the labour market, as well as being an alternative to academic HE; they offer a career path that may increase the attractiveness of vocational upper secondary education. A public committee was charged with the task of assessing the role of vocational colleges and how their quality and attractiveness could be strengthened. The committee's report was delivered in late 2014 (Norwegian Government, 2014). The vocational college sector is relatively small, but the committee sees greater potential in this sector. However, other stakeholders emphasise that vocational colleges should not become too academic, but should retain and develop their vocational nature, including more cooperation with working life/social partners. This does not preclude developing better opportunities for further skills development for vocational college candidates, also within the higher education system. A government white paper, (Norwegian Ministry of Education and Research, 2017), about vocational colleges was sent to parliament in 2016. In this the government shared the committee's vision of developing the vocational college sector as an attractive vocational alternative to universities and university colleges. However,

(¹²¹) This initiative is also supported by a previous EU project on 'quality of higher VET' conducted by partners from five European countries and involving chambers of commerce as well as the European Association of Craft, Small and Medium-sized Enterprises (UEAPME) (QAHiVETnet, 2017).

some of the more radical proposals from the committee were not incorporated in the paper. The most important proposals were that a two-year vocational college education should provide a general entry qualification for universities or university colleges, a new financing model and a proposed development fund to develop new programmes in cooperation with working life or improving quality. The paper also proposes new student rights and a new national admissions system more like higher education. All these changes were adopted by parliament in May 2017 and the term 'higher vocational education' was established as an official term for the vocational college programmes.

It is expected in some countries that the levels of higher VET qualifications offered outside higher education, particularly those from outside the formal system, might become more visible if linked to NQFs. This is the case in Austria (¹²²), where a procedure for including non-formal qualification into the NQF is currently being developed, and in the Netherlands, where non-regulated qualifications offered by private providers can already be linked to NQF levels. There is little public debate in Norway about non-formal higher VET qualifications, though there are different views on the inclusion of non-formal qualifications in the NQF. Some of the largest employer and employee organisations press for inclusion of such qualifications to increase qualifications visibility and recognition. These organisations include the encompassing organisations *LO* (labour) and *NHO* (employer) and other large organisations on the employer (*Virke*) and labour (*YS*) side. In contrast, the labour organisations which organise people with higher education, together with employer organisations in the public (municipal) and semi-public sector, argue that there is no real social need for inclusion of non-formal qualifications in the NQF. A committee established by the Ministry of Education was unable to reach a joint conclusion (NKR, 2015), and the inclusion process has stalled. The difference in views reflects the larger role of such qualifications in the private sector, particularly in industry and construction, than in the public sector. The Ministry of Education and Research and the Ministry of Trade, Industry and Fisheries will, in dialogue around the master craftsman certificate, assess if the master craftsman qualification can be placed into the NQF (Norwegian Ministry of Education and Research, 2017).

(¹²²) In Austria, the main reason for reforming and introducing a formalised engineering examination was the creation of a basis for inclusion in the NQF, which is regarded as important for improving the visibility of this higher VET qualification and the international competitiveness of Austrian companies.

CHAPTER 5.

Focus on nursing and engineering

This chapter explores the specific situation in nursing and engineering in the case study countries. Which main change processes (in relation to academic drift, vocational drift, expansion of higher vocational education and training (VET)) can be observed in this area? What are the specificities and differences compared to other areas?

The evidence points to some differences between these two areas. Engineering qualifications have mostly been offered within higher education for many years and often clearly have a hybrid character: they include academic and vocational/professional elements, with engineering programmes in professional higher education sometimes struggling in developing their specific profile. This is not so evident for nursing qualifications. Some countries have recently upgraded their nursing qualifications and there seem to be more discussions in this area on the need for nursing qualifications at higher level or with an academic profile.

5.1. **Nursing**

A clear trend towards offering nursing degrees in higher education (at EQF level 6) is apparent. The rationale for these changes are often to support professionalisation in this area, to reflect changing demands in the workplace, to increase the attractiveness of this profession by providing career perspectives, or to bring it to the same level as qualifications in other professions.

Some countries integrated nursing qualifications into higher education more than 20 years ago (such as in Finland, Italy, the Netherlands, Norway); this happened during the past 10 years in countries such as in France, Austria, and UK-England. Germany is a specific case since the nursing qualification is allocated to EQF level 4 and nursing study programmes offered at universities of applied science (UAS) since 2004 are only an option for further education and specialisation; they are not an alternative to nursing qualification programmes since graduates still need to take the official State exam to achieve registration as nurse.

Table 11. Nursing qualifications in the case study countries: overview

Country	EQF level	Higher education structures	Institution offering nursing training	Offered at higher education since
Austria	6	binary (very clear dividing lines)	UAS	2008; compulsory since 2016
Estonia	6	Binary	health care colleges (higher professional education) at universities	
Finland	6	binary (very clear dividing lines)	UAS	1990s
France	6	multi-type/fragmented; partial unitary	nursing schools	2009
Germany	4	binary (combination of clear and more blurred dividing lines)	state-approved health and nursing schools	2004 (as option for further education and specialisation)
Italy	6	university dominated	universities	between 1990 and 1992
Netherlands	6	binary (combination of clear and more blurred dividing lines)	UAS	1986 (a)
Norway	6	binary – developments towards unified	university colleges	1986
UK-England	6	unified	universities	2013

(a) Hogescholen are legally acknowledged as higher education subsector since 1986; the title UAS is used since 2006/07.

Source: Cedefop, based on case studies.

The integration of nursing programmes into higher education has usually had an impact on programme profiles. Although the profile and the didactical approach are still largely practice-oriented, in many cases the practical (work-based learning) training periods were reduced. In Norway, the theoretical content in the curricula has increased over time (since the quality reform of 2003), with less time allocated to work practice (Kvik, 2009, p. 138). Nursing programmes became part of the university college sector in 1986; at that time they had a practice component of about two thirds of the programme which was reduced from the late 1980s to the present half of the programme. Students have criticised the quality and the length of practical training and they have also questioned the number of academic subjects in the curriculum in relation to the practical skills needs they experience when caring for patients (Kyrkjebo et al., 2002). The recently (2015) introduced revised UAS programme for nursing in the Netherlands also shows changes towards a stronger focus on critical analysis

and research skills, using an evidence-based practice approach and a reflective outlook to innovation and improvement (¹²³). In France, concurrent developments can be observed in the profile of nursing programmes since 1992. The scientific knowledge of nurses has been raised through better integration within universities and more interdisciplinarity; there has also been a strong focus on learning outcomes and transversal skills as well as an emphasis on better articulating theoretical learning and practical experience in real professional contexts.

Another impact of integrating the programmes into higher education is increasing the entry qualification and possibly the change in the status of learners. In UK-England, until the 1990s, nurse training was mainly at the diploma level (below the bachelor level), but with Project 2000 nurse training was to become increasingly located in higher education. For entry to train as a nurse, qualifications were required that would grant entry to university. While the traditional route into nursing was of an apprenticeship type (trainees were employed as student nurses), nurses now tend to be registered as full-time students and are required to pay tuition fees and cover their living expenses. There have been concerns that the creation of a degree level entry has affected the traditional role of nurses as carers: nurses may no longer be willing to carry out certain traditional tasks because such tasks should be carried out by someone at lower level. The Willis review on the future of nursing refuted this concern. It reported that it '... did not find any evidence that degree-level registration was damaging to patient care. On the contrary, graduate nurses have played and will continue to play a key role in driving up standards and preparing a nursing workforce fit for the future' (RCN, 2012).

An alternative route into nursing degrees at higher education is currently being piloted in Norway: The ministries of education and health have for several years encouraged university colleges to establish alternative pathways from upper secondary VET into higher education programmes in nursing (as established for VET graduates in engineering, Section 5.2). The process has, until recently, been blocked by strong resistance from the university colleges and the professional nursing organisation. It has now been decided by parliament, that university colleges can offer adapted nursing programmes to health care

(¹²³) Nursing: Nieuws 18.2.2015: *Opleidingsprofiel hbo-v: 'Er komt geen nieuw niveau bij'* [HBO-v training profile: there will be no new level]:
<https://www.nursing.nl/opleidingsprofiel-hbo-v-er-komt-geen-nieuw-niveau-bij-1708011w/>

Nursing: Nieuws 23.8.2017: *De niveau 6-verpleegkundige: feiten en fabels* [The level 6 nurse: facts and fables]: <https://www.nursing.nl/niveau-6-feiten-en-fabels/>.

workers with vocational upper secondary education, if they wish. The professional nursing organisation and the student organisation have strongly rejected the idea, while the encompassing labour union *LO*, through their member organisation, *Fagforbundet*, which organises health care workers, has supported the project. If implemented permanently, it may improve career development opportunities for health care workers with vocational upper secondary education and signal recognition of their skills. Resistance to the project is rooted in concerns about lowering of standards and inadequate entry competence and in professional policy interests.

5.2. Engineering

Engineering qualifications are usually offered at higher levels. The subject has long been established as academic within higher education but with a focus on vocational/professional elements. This strong hybrid character is in particular emphasised in France and the Netherlands.

In France, both academic (research) and vocational/professional principles have been strengthened during the last years: engineering schools or institutes (most under the responsibility of the Ministry of Higher Education and Research) deliver the diploma *titre d'ingénieur* (master level, EQF level 7). Over the 30 last years, engineering schools were also created inside universities. Since the 1990s, it has been possible to obtain the *titre d'ingénieur* through apprenticeship (¹²⁴). The *Commission des titres d'ingénieur (CTI)* is responsible for the quality assurance of all *titres d'ingénieur* and evaluates the curricula of all engineering schools that are officially allowed to deliver a *titre d'ingénieur* (¹²⁵). A major evolution within these schools is the development of their research capacity, through new relations with other research institutes in France and abroad, but also with research directorates of large companies or networks of start-ups. The long-established cooperation with enterprises has been developed further, mainly in research through specific partnerships and technological incubators.

The Netherlands has undergone several thorough changes in recent years to create a better connection between education institutions and the labour

(¹²⁴) There were about 17 500 apprentices in engineering in 2015, with about 5 000 degrees are delivered each year through this pathway.

(¹²⁵) This degree is not a national diploma; it is a different degree for each school and the title of engineer must always mention the name of the school.

market. This connection is sought both for student intake and placements and for meeting market demand in labour skills. The Sprint programme (*Sprint programma*), which ran from 2004 to 2010, sought to increase the intake of students in technical degrees at UAS by 15%. Although this target had been achieved, it became evident in 2006 that the growth was not sufficient to cover the gap between market demand and newly graduated engineers. In 2009 a committee was appointed to prepare a new investment plan for the technical sector within the UAS. The sector investment plan for the UAS for 2011-16 developed by the Ministry of Education, Culture and Science (¹²⁶) included the idea of establishing centres of expertise as well as a focus on placements and traineeships, improved transition and cooperation between different education institutions, and closer collaboration between the education and labour sectors. Further, education institutions, employers, sectors and regions, along with the State, agreed on a *techniekpact*. This included an agreement on a specific State budget for jointly funding collaborative investments between the UAS and the labour market, provision of grants by companies in the sector for UAS students of excellence, and cooperation between UAS and the social partners in technical sectors to improve lifelong learning and to coordinate education demands and supply (¹²⁷). In September 2015, new types of broader bachelor degree programme were implemented, to which each institution adds a specialisation. In comparison to 2006, there are now fewer programmes; courses offer broader preparation for the labour market, and competences in each course are clearly defined and harmonised, using one system for organisation and comparison. The changes seem to have created a better transition to the labour market for newly graduated students. Despite the closer cooperation with the labour market, the duality of the UAS maintains a strong hold. The centres of expertise include a budget specialised for research in collaboration with private and public stakeholders, and research has been mentioned as central point of the key qualifications defined for the UAS sector-wide.

In several countries, the specific profile of engineering programmes in VET strands of higher education is still under discussion; developments in different directions can be observed.

The Institution for Engineering and Technology in UK-England would like to see a 'refocusing of the higher education curriculum away from theory and lectures to problem-based, project-based or experiential learning – focused on

(¹²⁶) Hoger Onderwijs Groep, n.d., p. 19;

(¹²⁷) Hoger Onderwijs Groep, n.d., p. 21-23.

creating solutions to real-world challenges, offering internships, placements and work-related learning opportunities during the degree course' (¹²⁸) (see also IET, 2017). In many respects these are already supplied by many HEI. The debate has become focused on the extent to which graduates are work-ready at the end of their studies rather than requiring substantial further training by the employer.

In Finland, engineering qualifications have developed from a professional orientation to a more academic direction (starting in the 1970s), and the trend has now slightly changed again. In the late 1990s, engineering studies at UAS had a theoretical focus and an emphasis on mathematics and physics (which resulted in problems for upper secondary VET graduates in completing the degree). Since 2008, the engineering curriculum has been developed in a more practically oriented direction. The amount of mathematics and physics was reduced and ICT skills were more strongly emphasised. Further, the importance of prior work experience has been reduced over time; in engineering degrees this is no longer a requirement of the admission process. The technician degree, which was located between engineering degrees and secondary VET (¹²⁹), always required working experience but was discontinued with the UAS reform in the 1990s. There has since been continuing debate over whether there is a need for practice-oriented higher vocational degrees for site management and similar activities. The industry has complained that there is lack of professional site management when holders of the former technician degree are retiring; the problem was most urgent in construction, which finally led to launching a similar degree in 2007. The new degree is at the same level as the engineering degrees, so comparable to a bachelor degree. The main difference is that it lacks a lot of the theoretical study and the focus is on aspects such as work site management, and logistics (Stenius, 2016). Current debates focus on the need to balance engineering degrees with academic goals, working life requirements and creating feasible study paths for the different student groups (such as vocational and general upper secondary graduates, as well as adults).

In Norway, academic drift seems to have been stronger in other areas, such as teaching and nursing, than engineering, where the vocational aspect and relevance to work-life needs seem to be more important. Network ties between university colleges that offer three-year bachelor programmes in engineering and local enterprises seem to mediate academic drift to some extent. There are no

(¹²⁸) IET: Policy and media: IET Policy Panels: Education and skills, activities: *New approaches to engineering higher education* [accessed 4.11.2018].

(¹²⁹) A similar degree between secondary VET and post-secondary VET college/UAS degrees did not exist in the other fields.

required practice periods within the programmes, though the bachelor thesis project is often undertaken as cooperation between the student, the teacher and a workplace, with the topic often proposed by the enterprise (Kyvik, 2016, p. 166). A review of the engineering education carried out by a committee appointed by NOKUT, the accrediting institution, also highlighted that most university colleges cooperate closely with local enterprises to ensure the practical relevance of the programmes while maintaining a sound theoretical knowledge base (NOKUT, 2008) (¹³⁰). Some university colleges also accept graduates of specific types of vocational upper secondary education into specific higher education programmes in engineering. This is the so-called *y-veien* or vocational path to higher education. These engineering students generally do well in the colleges, and they are considered attractive in the labour market after graduation.

Austrian engineering programmes at UAS sometimes seem to struggle with establishing their status and developing a profile that clearly distinguishes them from VET colleges and universities. Teachers at VET colleges were initially also teaching at UAS but, since the late 1990s, this is no longer allowed. This regulation was supposed to emphasise the higher level of UAS studies and distinguish them better from programmes offered outside higher education. Alongside engineering qualifications obtained in bachelor programmes at higher education, there is now also another engineering qualification from outside higher education linked to EQF level 6. The engineer degree can be obtained by VET college graduates (EQF level 5) in technical fields based on professional experience and a certification process. The requirements for the exam were set by a new law enacted in early 2017 (¹³¹).

(¹³⁰) The teaching staff at each institution was small and the ambition of teaching being research-based was often not fulfilled. Teachers often lacked research competence and sometimes also formal didactic competence.

(¹³¹) There are current discussions on introducing this type of qualification in other fields, such as for graduates of VET colleges in the commercial or tourism fields.

CHAPTER 6.

Conclusions and outlook

This Chapter presents conclusions from the research questions and discusses future challenges related to vocationally oriented education and training offered at higher levels.

6.1. Conclusions and observations

The aim of this paper was to provide insights into developments in vocationally oriented education and training offered at higher levels in European countries during the last two decades (1995-2015) and particularly to explore two phenomena: academic drift and vocational drift:

- (a) to what extent is higher education (academic and professional HE) as defined within the qualifications framework in the European higher education area (QF-EHEA) subject to vocational and/or academic drift;
- (b) to what extent is higher-level vocationally oriented education and training delivered outside higher education (higher VET);
- (c) what are the implications of these developments for the content and delivery of programmes and qualifications at higher levels?

The following paragraphs present some findings and reflections on these research questions.

6.1.1. Vocational and/or academic drift

We have used the drift metaphors for analysing developments related to vocationally oriented education and training offered at higher education levels: academic drift and vocational drift. Although the case studies and literature reveal ‘a plethora of empirical evidence and theoretical explanations for academic drift tendencies’ (Sterrer et al., 2015, p. 4), academic drift cannot be considered as an ‘invariant universal process’ (Harwood, 2010, p. 415). On the contrary, there are differences across countries (¹³²) as well as within countries. For example, ‘in the same national context, one may observe academic drift in one subject domain of the professional HE sector while seeing institutional distinctness and complementarity in another’ (Reichert, 2009, p. 16). Similarly, vocational drift is

(¹³²) This has also been confirmed, e.g. by Lepori and Kyvik (2010, p. 306).

taking various forms across Europe. As several examples have shown, it depends on the specific perspective from which these phenomena are observed whether certain developments are regarded as academic drift or vocational drift. From the point of view of VET, the upgrading of former VET institutions and programmes to higher education can be regarded as an academic drift; the same development can be regarded as vocational drift if one considers these developments from the point of view of the higher education sector.

Even if the term ‘drift’ actually indicates that the described developments take place unintentionally and without any steering, this is not always the case: In many cases there are policies and regulations that steer and push developments in a certain direction. However, change processes can also be subtler than what is expressed in the official rules and regulations (¹³³), and stakeholders with different interests can pull or push developments in different directions. This dynamic is the result of power struggles that can create the impression of drift processes in the sense of developments by external forces, without control of direction, and can also have unintentional consequences.

6.1.2. Vocationally oriented education and training at higher levels delivered outside higher education (higher VET)

During the last two decades, there has been expansion and diversification of vocationally oriented education and training offered at higher levels in European countries. Although there is no clear statistical evidence, the qualitative data collected – particularly in the case studies – allow us to conclude that participation figures in vocationally or professionally oriented education and training offered at higher levels have increased. The push to higher-level vocationally or professionally oriented education and training is reflected not only in education policies but also in developments at national levels. For example, programmes classified as ISCED11 levels 4 and 5 are nearly exclusively vocationally or professionally oriented. The prominence of VET at these levels is higher than at level 3; it can be concluded that professional HE is increasing, while such developments for higher VET are less evident. Table 12 summarises reflections on participation numbers and the dynamic of developments related to higher VPET (professional higher education (HE) and higher VET) in the case study countries (¹³⁴):

(¹³³) See also Christensen and Erno-Kjolhede (2011, p. 286).

(¹³⁴) This classification of participation and dynamics is based on the interpretation of the data presented in the case studies and refers only to the situation in the individual countries.

- (a) participation: refers to the number of learners participating in higher VPET and is classified as low, medium or high (in relation to the share of all learners in higher education);
- (b) dynamic: refers to developments in the last 20 years, classified as stable, declining or rising.

Table 12 shows that, in most countries, professional HE has medium or even high participation rates and is often increasing. The situation with higher VET is difficult to assess but participation in most countries is low.

The analysis of the case studies and of further research literature shows that there are variations in how countries use the higher levels (¹³⁵): there is evidence for strengthening vocational principles at higher levels in various ways as well as for strengthening academic principles.

Table 12. Reflection on participation in and dynamic of developments related to higher VPET

Country	Professional HE			Higher VET	
	Higher education structures	Participation	Dynamic	Participation	Dynamic
Austria	binary (very clear dividing lines)	medium	slightly increasing	high	stable
Estonia	binary	high	slightly decreasing	low	?
Finland	binary (very clear dividing lines)	high	stable	low	slightly increasing
France	multi-type/fragmented; partial unitary	high	increasing	low	stable
Germany	binary (combination of clear and more blurred dividing lines)	high	slightly increasing	medium	advanced vocational examinations: decreasing; trade and technical schools: slightly increasing/stable

(¹³⁵) This has also been observed by the OECD in its report *Skills beyond school* which states that, 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 (OECD, 2014a, p. 3).

Country	Professional HE			Higher VET	
	Higher education structures	Participation	Dynamic	Participation	Dynamic
Italy	university dominated	low	increasing	—	—
Netherlands	binary (combination of clear and more blurred dividing lines)	high	increasing	low	? (a)
Norway	binary – developments towards unified	high (b)	decreasing ? (c)	low	stable
UK-England	unified	medium	slightly decreasing	low	stable (d)

(a) Besides regulated qualifications, there are currently (as of May 2018) five non-regulated qualifications levelled at the Dutch qualifications framework (NLQF) level 5; 24 at level 6 and one at level 7 (*NLQF-register*: <http://www.nlqf.nl/register>). These qualifications are professional/vocational oriented qualifications offered by private providers or by branch/sector organisations. As these qualifications are not regulated, there is no record of how many exist (outside those levelled) and how many holders of qualifications there are.

(b) Since there is no clear distinction between academic and vocational qualifications and programmes on the higher education levels and no clear distinction based on the type of HEI, it is not possible to indicate the number of learners enrolled in professionally oriented higher education programmes. However, the fact that nearly 60% of students are enrolled in university colleges, which traditionally offered professionally oriented programmes, is taken as an indication that this type is of high relevance.

(c) Numbers are not available but there are indications of academic drift in several aspects.

(d) This refers to higher education offered in the further education sector, which accounts for around 8% of all students and has been stable over recent years.

Source: Cedefop, based on case studies.

6.1.3. Impact on the content and delivery of programmes and qualifications

Academic and/or vocational drift has a clear impact on the content and implementation of programmes and qualifications. This is reflected in the type of learning outcomes included in the qualification profiles, the research approach, the learning modes, and learning locations used. Higher VPET is in a continuing process of finding the right way to convey competences at higher level. Relations with the world of work play a central role here, even if they are structured differently or exist to varying degrees. This study focused mainly on the professional strand of higher education; however, it can be said that higher education is/has been under pressure to respond to changing circumstances. Here, too, a process of negotiation (or even a power play) can be identified in terms of strengthening academic or vocational aspects.

However, increasing attention is being paid to the world of work outside the HEI. This is also reflected in the fact that universities and other HEIs have begun

to offer labour market- and profit-oriented continuing VET programmes. Another indication of this is that many HEIs across Europe, supported by the Bologna Process (¹³⁶), have implemented lifelong learning strategies, opened up higher education to different student groups (including adult learners and those with work experience) or sought to offer opportunities for access to higher education without formal qualifications.

6.1.4. Lifelong learning perspective or dichotomy of sectors of education

For pragmatic reasons, this research study used the usual distinction between VET (in our case higher VET) and higher education (again differentiated between academic and professional HE), often based mainly on governance aspects: these subsectors of education are usually regulated by different laws, governed by different ministries or different units within the ministry of education, qualifications or programmes are offered by different types of institutions. This dichotomy does not always do justice to reality; in some countries, blurring boundaries between subsystems can be observed. As observed in the case study countries, and pointed out by Delplace, in ‘past decades, we could witness various convergent and divergent processes in higher education, which have had an influence on what is perceived as professional versus academic higher education’ Delplace (2013, p. 34).

The changing landscape of higher education contributes to the blurred borderlines between systems and subsystems. A clear distinction between academic and professional HE based on the type of HEI is not possible, as evidence from some of the case study countries shows: ‘In many countries, old differences between academically and professionally oriented institutions still exist formally, but – partly due to the Bologna Process – actual differences are diminishing or have ceased to exist altogether. For example, in many cases, both academically and professionally oriented HEIs can offer academic and professional programmes. This also means that while there might be a (formal) distinction between the institutions, there are no differences between the degrees awarded. In other cases, there might be no distinction between institutions, but there could still be a difference between the orientations of the study programmes offered. Therefore, it is impossible to create a clear typology of countries along this dimension’ (European Commission et al., 2015, p. 36). This was also emphasised by the HAPHE (¹³⁷) project: ‘Profiling entire institutions as academic

(¹³⁶) The dimension of lifelong learning has been explicitly emphasised in the Bologna process since the *Prague communiqué* (European ministers in charge of HE, 2001).

(¹³⁷) Harmonising approaches to professional higher education in Europe.

with “highly theoretical courses” or professionally oriented with programmes for “practical skills development or training” would disregard the fact that since decades, comprehensive universities have offered and continue to offer professional education for prospective physicians, dentists, veterinary surgeons, architects, etc., which are all professionals in their own right’ (Camilleri et al., 2014, p. 28) (¹³⁸).

Some researchers claim that the dichotomy between VET and higher education cannot be maintained with the increasing introduction of learning outcomes orientation. Although academic higher education ‘has traditionally focused explicitly only on discipline requirements and the encouragement of scientific training while entry-level and advanced VET have focused until now explicitly on non-academic requirements’ (Rein, 2012, p. 9), it is argued that the shift to learning outcomes reduces differences between VET and higher education: when curricula and qualifications are designed using learning outcomes or in a competence-oriented way, ‘there are no fundamental barriers between the academic requirements of discipline-centric higher education systems and an orientation toward vocational requirements’ (Rein, 2012, p. 1). Higher education students need to develop the ability to apply scientific findings and methodologies; these are essential occupational competences of higher education graduates. There is an ‘inherent conceptual intersection of both education sectors in the qualification goal of acquisition of competence as capability to act’ (Rein, 2012, p. 9).

Rein further argues that a ‘consistent shift to learning outcomes in the design of qualification programmes which compatibly address complex cognitive and practical requirements in education and training as well as at work and other societal environments implies a resultant usage of relevant key terms like professional and scientific across traditional systemic and institutional contexts’ (Rein, 2017, p. 340). So, we may be able to add another drift dimension, the professional scientific drift.

Considering these developments, and for better understanding and transnational comparison of the expansion of vocational education and training at higher levels, it could make sense to adopt a lifelong learning perspective. This means looking at the entire education and training system instead of at different

(¹³⁸) As observed more than two decades ago (Gibbons et al., 1994), also at universities, alongside the traditional mode of knowledge production (Mode 1 – knowledge is generated within a disciplinary, primarily cognitive, context), a new mode has emerged: Mode 2 – knowledge is created in broader, transdisciplinary social and economic contexts.

sectors separately. The EQF for lifelong learning plays an important role in this respect. The EQF levels, which also place greater emphasis on vocational principles, could increasingly be used as reference points. This is currently only partially possible because higher VET qualifications offered outside the formal education system are often not (yet) included in the NQFs. However, with the progressive implementation of NQFs in European countries, the EQF for lifelong learning has the potential to be increasingly used as a cross-sectoral reference point for the level dimension of qualifications systems.

Taking a lifelong learning perspective and using EQF levels as a reference point permits moving away from looking at sectors and subsectors to examine the profile and content of qualifications offered at EQF levels 5 to 8 and the extent to which they reflect academic and vocational principles or their combination (as in applied research). However, the design of the NQF can support this perspective of lifelong learning in different ways. In Austria, for example, there are two sets of descriptors for assigning qualifications to levels 6 to 8: while the qualifications of the Bologna architecture and those acquired through the diploma studies are classified according to the Dublin descriptors, the assignment of all other qualifications is based on the NQF descriptors. Levels 6 to 8 remain open to qualifications from higher education and higher VET, which is an important step towards equivalence between educational contexts, but this specific NQF design does not help overcome the traditional distinction between vocational and academic education. The classification structure in Switzerland is also based on a separatist approach, in this case with the development of two non-contiguous NQFs: one for VET (including higher VET) and one for higher education (including professional HE). Germany, in contrast, used an integrative approach and a framework and a set of descriptors to classify qualifications from different education sectors. However, it remains to be seen what concrete effects these different NQF structures will have in the countries (Baumeler and Engelage, 2017).

6.2. Future challenges

Previous research (including under the Cedefop project *The changing nature and role of vocational education and training in Europe*) points to several future challenges for VET; vocationally oriented education and training at higher levels must face some of the same challenges. This final section emphasises aspects crucial importance to further developments in this area.

6.2.1. Juggling labour market demands and wider societal values

There is evidence of a growing influence of labour market stakeholders in vocationally oriented education and training at higher levels. The way this is organised might also have an impact on the skills formation system within a country, as the dual study programmes from Germany show (¹³⁹). A greater dominance of firm-specific, instead of industry-specific, skills might lead to narrow-gauge programmes, increased dependence of learners and workers on specific employers, reducing the power of labour associations (Graf, 2017, p. 11). Further, the ideal of education aimed at comprehensive personality development and based on a humanistic, enlightenment-emancipatory normative structure might get lost. However, critical thinking and reflectivity are central aspects of higher education.

6.2.2. Balance between academic and vocational principles

Blurring borders between different sectors and subsectors of the education system can lead to tensions and discussions on mission, purpose and functions of programmes and qualifications belonging to different sectors. There is often a need for clearer profiling to achieve better distinction between programmes and qualifications. Finding the right balance between academic and vocational principles, however, requires not only focusing on differentiation from other qualifications, but also considering external factors and more comprehensive needs and goals. The development of competence-oriented professional-scientific learning outcomes could be a solution for vocationally oriented education and training at higher levels.

6.2.3. Achieving parity of esteem between academically oriented and vocationally oriented qualifications at higher levels

There is evidence that Higher VPET is not considered equal in status to other qualifications and programmes offered at higher levels. This might be due to the poor image of VET in general, the general lack of awareness and understanding of the purposes and functions of these qualifications, the complexity of the area and the diversity of the programmes and qualifications (particularly those offered outside the formal system), or the lack of permeability between higher VET and

(¹³⁹) In this case, the influence of collective governance through social partnership is declining and the firm-specific character of skills is increasing: the genesis of dual-study programmes in Germany involved mainly large industrial firms and local stakeholders, and could be considered as a shift from collectivism to segmentalism, a system in which larger firms are gradually increasing their influence on the overall shape of skill formation (Graf, 2017, pp. 9-10).

higher education (¹⁴⁰). The Cedefop study *Vocational education and training at higher qualification levels* (Cedefop, 2011, p. 47) analysed expectations of to the shift to a learning outcomes approach and competence-based qualifications in prompting parity of esteem between academically and vocationally oriented courses at higher levels. Most survey respondents (55%) expressed some level of scepticism that the shift to learning outcomes might have a positive impact on parity of esteem. However, a proportion (38%) believed that the value of vocationally oriented study programmes will change and that an equal level of reputation might be reached. There is no clear evidence yet that the shift to learning outcomes actually had a positive impact in this regard. What might help, though, to achieve parity of esteem could be increased awareness and visibility of Higher VPET.

Awareness can be raised by providing information about options related to these types of programmes and qualifications in career guidance activities. The Organisation for Economic Cooperation and Development (OECD, 2014a, p. 102) report *Skills beyond school* states that, since there is a diversity of post-secondary options, guidance may also be delivered by a variety of agencies, including not only 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 individual careers information available may be unduly narrow (¹⁴¹).

Visibility refers to its representation in international statistics (which is currently considered inadequate) and to the labelling of these programmes or qualifications. Some countries have introduced terms such as 'higher VET' or 'higher vocational education' for VET qualifications offered at higher levels outside the higher education system. Different terms are used at national levels within higher education but there are attempts at European level to label vocationally oriented programmes as professional HE (e.g., Delplace, 2013). This research paper also used the terms 'higher VET' and 'professional HE' and introduced 'higher VPET' as overarching term. While a common terminology for these programmes or qualifications can improve visibility, it may be questioned whether it is conducive to further development in this area if different terms are used mainly based on governance principles. Taking an overarching – lifelong

(¹⁴⁰) See also European Commission, 2016b, p. 136.

(¹⁴¹) Evidence showed that efforts in dual system countries to open access to higher education to vocational graduates were relatively unsuccessful because some students, particularly apprentices, are unaware of these possibilities (Culpepper, 2007 cited in OECD, 2014a, p. 102).

learning – perspective, using the EQF as a reference point, and taking the level dimension as starting point, could be explored instead. However, this requires speeding up the implementation of NQFs that include qualifications at all levels and from within and outside the formal education system.

Abbreviations/acronyms

EHEA	European higher education area
EQF	European qualifications framework
Eurostat	Statistical Office of the European Union
HE	higher education
HEI	higher education institution
ISCED	international standard classification of education
ISCED97	ISCED approved by the UNESCO General Conference in November 1997
ISCED11	ISCED approved by the UNESCO General Conference in November 2011
IVET	initial vocational education and training
NQF	national qualifications framework
OECD	Organisation for Economic Cooperation and Development
SCHE	short-cycle higher education
UAS	university of applied science
VET	vocational education and training
VPET	vocational and professional education and training

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ANNEXES

ANNEX 1.

Analytical framework: perspectives and key features

Epistemological/pedagogical perspective

1. Knowledge approach: this dimension is related to the content or profile of vocationally oriented programmes/qualifications at higher levels (theoretical, abstract and disciplinary based knowledge, practical or experience-based knowledge).
2. Pedagogical/didactical approach: this refers to the learning methods used (practice-orientation learning by doing, work-based learning, theory-based reflection on practice and scientific research).
3. Teacher-student relationship and background of teachers: this refers to the type of instructors involved in vocationally oriented programmes/qualifications at higher levels and the requirements for their educational and professional background (are they required to have comprehensive work experience, are they part-timers who are also practitioners or teachers with professional experience in industry, are they trainers in companies, do they need to have an academic degree?). In the original model this dimension referred to the teacher-student relationship only; the requirements teachers or trainers need to fulfil for teaching in vocationally oriented programmes/qualifications at higher levels are also addressed in this study because this could be changing based on academic or vocational drift.
4. Learning sites: this aspect focuses on the location of learning (classroom, companies) and since it is closely linked to the pedagogical-didactical approach, these dimensions are discussed together in this study.
5. Specificity of learning outcomes: this dimension refers to the extent learning outcomes refer to a specific occupation/profession, to a broader vocational field and the balance between occupation-specific and transversal learning outcomes.
6. Professional ethos: this dimension is not used here.

Education system perspective

7. Sector and level of the education system: this dimension refers to whether vocationally oriented education and training at higher levels is offered within the higher education sector (and possibly in which subsector) or outside

- higher education (the original model refers to level of education in a more general way).
8. Number/background of students: this refers to the number of learners as well as the main target group of vocationally oriented education and training at higher levels and their background (IVET qualification, professional work experience, school-leaving exam as a requirement). The original model refers to age but for the purpose of this study the age dimension is less interesting than the wider background of learners.
 9. Outcomes/destination: this dimension refers to the qualifications and rights graduates obtain for progressing in education. In this study, it is discussed together with the purpose/function dimension linked to the socioeconomic/labour market perspective.
 10. Institutional landscape: this dimension does not only refer to the Key providers as in the original model but also looks at the wider institutional landscape that is involved in providing vocationally oriented education and training at higher levels.
 11. Parity of esteem: this dimension explores how vocationally oriented programmes or qualifications offered at higher levels are perceived, whether they are considered as second choice, equal to more academic HE programmes or are even valued more highly. The scope of this dimension in the original model had to be widened because it referred to the parity of esteem between general and vocational education.

Socioeconomic or labour market perspective

12. Source of funding: this dimension refers to the role of labour market stakeholders in providing funding for vocationally oriented education and training at higher levels.
13. Student identity/legal status: this dimension reflects on the status of learners in vocationally oriented education and training at higher levels (whether they are preliminary students and in some cases interns and trainees or are preliminary employees enrolled in programmes or preparing for an exam for obtaining a qualification).
14. Occupational hierarchy: this refers to the occupational status of graduates (whether they will be technicians/professionals); however, this dimension was not further used since reflecting on it did not provide much added value for analysing change processes in this study. However, it is partly addressed in the discussion on outcomes/destinations of graduates.
15. Governance: this refers to the role of labour market stakeholders/companies in the governance of vocationally oriented education and training at higher levels.
16. Focus/purpose: from this perspective, this dimension refers to the functions and rights graduates gain for progressing in the labour market. In this study it

is discussed together with the outcomes/destination dimension linked to the education system perspective.

17. Policy rationale/context of justification: this dimension refers to the rationale of offering vocationally oriented education and training at higher levels as well as to drivers of change. The aspect of policy rationale was added to explore how and to what extent policies play a role in promoting or hindering change processes.

ANNEX 2.

Statistical data

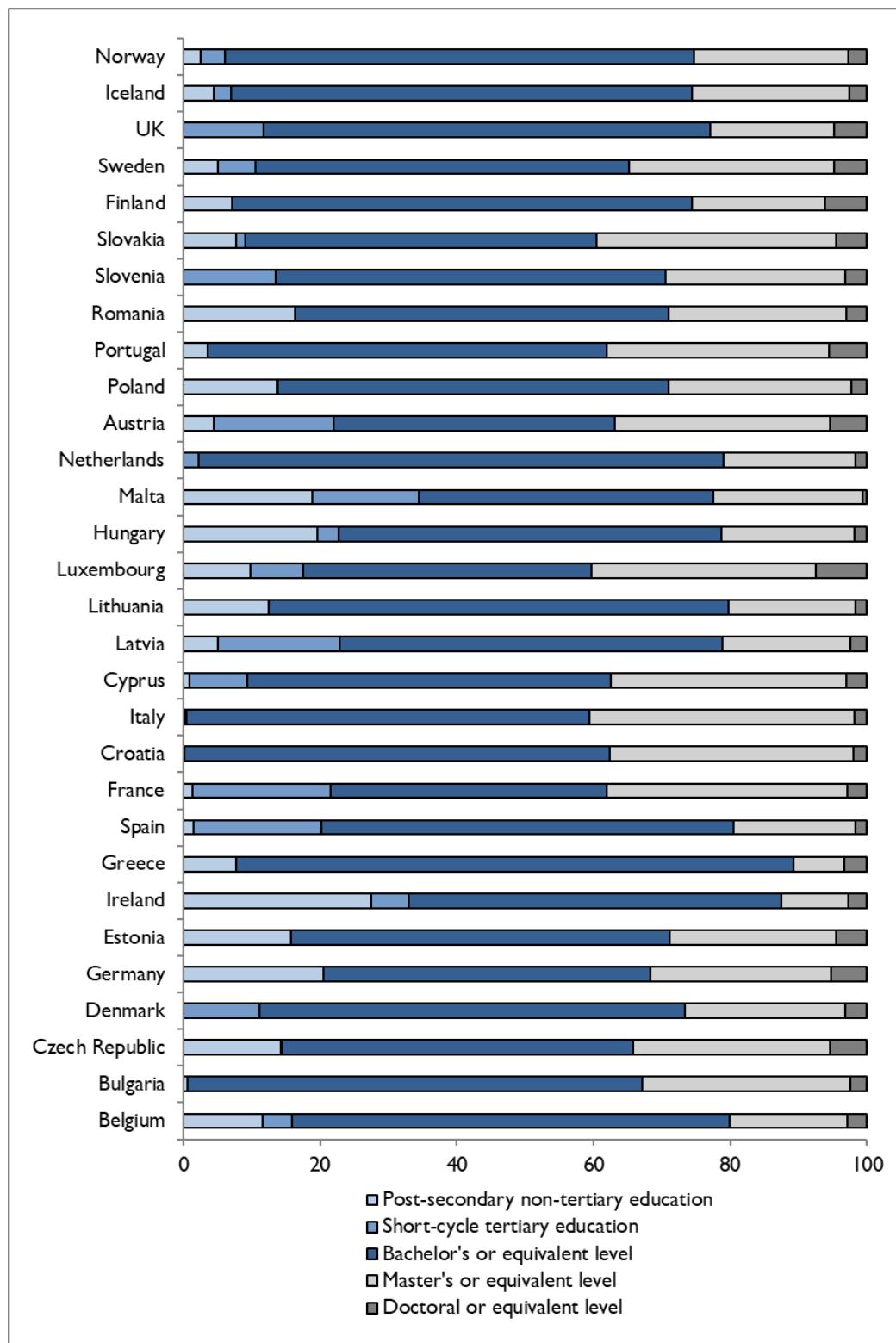
Table A1. Estimate of enrolment in vocational courses at the higher level (ISCED11 levels 4 to 7), 2015

Country	ISCED 4		ISCED short-cycle		Bachelor		Master		All higher-level	
	Number	% vocational	Number	% professional	Number	% professional	Number	% professional	Estimate 1	Estimate 2
EU		91		98	11 984 432		10	5 423 051	13	20 94
Belgium	66 118	93	24 414	100	365 925		64	97 920		58 95
Bulgaria	1 643	100			186 702		8	85 634		
Czech Republic	65 424	15	994	100	236 887		11	133 066		9 16
Denmark	0		34 973	100	195 054		58	73 790	6	
Germany	764 460	91	394	100	1 792 434		11	988 753		25 91
Estonia	10 248	100	:		36 299			16 012		
Ireland	81 064	100	16 505		161 302			28 621		
Greece	0		:		598 990		36	54 558	4	
Spain	27 985	100	372 356	100	1 204 409			355 097		100
France	33 691	54	495 472	100	991 175		29	868 904	76	33 97
Croatia			118	100	100 879		42	57 895	11	
Italy	1 703	100	6 548	100	1 076 667			710 487		100
Cyprus	347	100	3 128	100	19 994			12 935		100
Latvia	4 477	100	16 105	100	50 634		66	16 942	72	61 100
Lithuania	19 903	100	:		108 083		39	29 911	6	
Luxembourg	752	100	587	100	3 231		44	2 509	68	39 100
Hungary	75 144	100	11 655	100	214 737			74 113		100
Malta	3 081	95	2 537	60	7 026			3 540		79

Country	ISCED 4		ISCED short-cycle		Bachelor		Master		All higher-level	
	Number	% vocational	Number	% professional	Number	% professional	Number	% professional	Estimate 1	Estimate 2
Netherlands	0		18 687	100	646 851		162 585			
Austria	20 011	100	77 877	100	183 768		140 269			100
Poland	261 921	100	2721	100	1 104 364		514 821			100
Portugal	12 179	100	395	100	203 836		113 966			100
Romania	105 557	100	:		354 186		168 152			
Slovenia			11 485	100	48 893	44	22 594			
Slovakia	15 326	100	2 847	100	102 434		70 038			100
Finland	23 012	100	:		219 370		63239			
Sweden	22 468	77	25 244	80	246 400		135 555			79
UK			272 487	100	1 523 902		421 145			
Iceland	880	99	485	63	13 393		4 543			86
Norway	6 839	100	9 836	100	188 823		62 109			100

Source: Eurostat educ_uee_enrs08, educ_uee_enrt01, own estimates.

Figure A1. Participation in higher-level education (ISCED11 levels 4 to 8), 2015



Source: Eurostat/UOE educ_ueo_enra01.

The changing nature and role of vocational education and training in Europe

Volume 6: vocationally oriented education and training at higher education levels – expansion and diversification in European countries

This publication is the sixth in a series produced as part of the Cedefop project The changing nature and role of VET (2016-18). Based on analysis of developments over the past two decades (1995-2015), the report provides important insights into developments and change processes related to vocationally oriented education and training at higher levels (levels 5 to 8 of the European qualifications framework). Building on detailed national case studies, the report demonstrates the expansion and diversification of vocationally oriented education and training offered at higher levels in European countries and the variations in how countries use the higher levels: there is evidence for strengthening vocational principles at higher levels in various ways as well as for strengthening academic principles. It also covers current debates and potential future challenges, including juggling labour market demands and wider societal values, finding the right balance between academic and vocational principles, and achieving parity of esteem between academically oriented and vocationally oriented qualifications at higher levels, by improving awareness and visibility of the latter.

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