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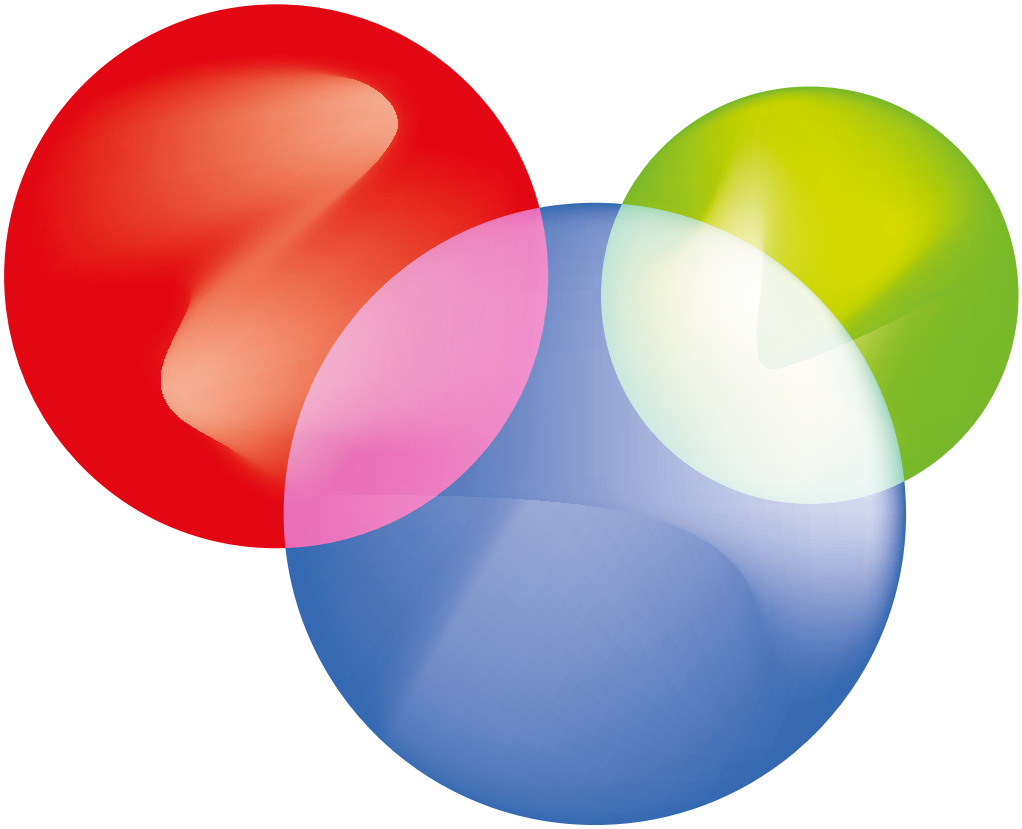

Vocational education and training in Europe, 1995-2035

Scenarios for European vocational education and training in the 21st century

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The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference centre for vocational education and training, skills and qualifications. We provide information, research, analyses and evidence on vocational education and training, skills and qualifications for policy-making in the EU Member States.

Cedefop was originally established in 1975 by Council Regulation (EEC) No 337/75. This decision was repealed in 2019 by Regulation (EU) 2019/128 establishing Cedefop as a Union Agency with a renewed mandate.

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Foreword

Vocational education and training (VET) is seen as deeply rooted in the traditions of crafts and industry. Referred to in some countries as technical vocational education and training (TVET), the sector has traditionally been associated with training of young people for jobs and occupations at lower and intermediary levels, notably in the manufacturing sector. This synthesis report, summarising the findings of the Cedefop project *The changing nature and role of vocational education and training (VET) in Europe*, shows that European VET, although differing between countries, is changing in a number of fundamental ways. Responding to rapidly changing demographics, technologies and labour markets, European VET is not only becoming more diverse in its programmes and qualifications, notably addressing the needs of an expanding service sector, but is also expanding into higher levels, challenging the perception of higher education as exclusively academically oriented. In some countries, this combination of diversification and expansion can be seen as a step towards making lifelong learning a reality, adapting VET to the needs of learners of all ages and at different stages of their careers and lives. In some countries, this diversification and expansion takes place in a context where traditional, initial VET is coming under pressure from declining youth cohorts and a growing preference for general education and training. While a majority of countries have resisted this pressure and managed to preserve, and in some cases even expand, the proportion of young people attending initial VET, these negative developments can be seen as a warning of future challenges.

Covering the 28 EU Member States as well as Iceland and Norway, the aim of this research has been to take a step back and paint a comprehensive picture of VET developments in Europe, identifying challenges as well as opportunities. Two major steps were taken to achieve this. First, a detailed analysis of VET developments since 1995 has been carried out. Looking at developments from different perspectives (institutional, pedagogical and socioeconomic) allowed for an in-depth analysis of trends. Second, building on the analysis of developments since 1995, a series of potential future paths were developed. Seeking to identify plausible and consistent pictures of how VET could evolve in the coming decades, these scenarios

highlight the choices policy-makers and stakeholders face in this area. While not pretending to be predictions of the future, these scenarios and the methodology they build on can be used by national authorities and stakeholders to identify challenges and opportunities ahead.

This report concludes the first phase of Cedefop's long-term research on the future of VET in Europe. Based on feedback received from stakeholders across Europe, priority is given to the further development of the project's analytical approach. A second (three-year) phase will start at the beginning of 2020, building on and deepening the work presented and summarised in the current report. Our long-term work in this area seeks to illustrate and clarify the challenges and opportunities faced by VET stakeholders in the coming years and decades. It is our hope that this work will directly inform and support the efforts to prepare European VET for the skills needs of the future.

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Executive summary

Are we facing a situation where vocational education and training (VET) is coming under threat from a changing labour market in which automation and digitalisation are 'hollowing out' the middle level skills traditionally provided by VET? Are we heading towards a situation where young people are increasingly attracted to general and academic subjects, side-lining VET as a poorly esteemed second chance option? Or, alternatively, are we facing a situation where VET, not least through its focus on practice and work-based learning, is becoming increasingly important for a labour market in constant change, offering relevant and high-quality skills at all levels and for people of all ages and in all life situations?

Questions like these directly inspired Cedefop in 2015 to initiate the project *The changing role and nature of VET in Europe*. Over a three-year period, the project analysed how vocationally oriented education and training has changed in the European Union (as well as Iceland and Norway) in the past two decades (1995-2015) and, based on these results, investigated the main challenges and opportunities the VET sector is facing today and may face in the future.

The aim of this synthesis report is to connect and synthesise the series of research papers already published and to complement these with further analysis, modelling and literature to provide new insights. The report also presents results of an online survey among VET stakeholders carried out in spring 2018.

The concept of VET, the diversity of systems and the role of history

VET is a broad concept, not only understood differently in different countries, but also used differently by different international organisations. Broadly speaking, VET today covers any curriculum content in school which aims to prepare for the labour market, much of higher education, a great deal of formal and non-formal learning undertaken by adults and any training

conducted within firms. Cedefop describes VET as 'education and training which aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market' (Cedefop, 2014b, p. 292). It deliberately does not refer to any level or sector of the education and training system.

Within the scope of this definition, our research, more than previous studies, shows that VET in Europe is highly diverse. This is partly a result of the broader perspective taken: not limited to a specific topic, target group or type of VET; covering initial vocational education and training (IVET), continuing vocational education and training (CVET) and higher VET; and also considering a longer time period than most other Cedefop studies or other comparative studies of international organisations. We have also tried to be more sensitive to differences that are often ignored, taking seriously the different national understandings and conceptions of VET; this has revealed even more diversity. Many previous studies can be described as 'snapshots in time', mapping and analysing policies, institutions and practices without any reference to the past. The danger in such approaches is that they create a picture of VET that is static and stable, not taking into account changes over time. This fails to reflect the reality that national VET systems are in constant flux through small daily steps, through policy reform, and sometimes in response to external 'shocks' like the 2008 economic crisis. To address this, the study has adopted a theory of change that recognises that the effect on VET of exogenous factors (social and demographic shifts, technological advances, economic changes) depends on an individual VET system's endogenous institutional structures and processes, dominant conceptions of VET and established behaviours or 'cultures'. At the same time, it is acknowledged that change can be complex and hard to predict. In this respect, the current study acknowledges that VET systems today reflect events of previous years and decades as well as current concerns, while also being dependent on where they started from. Hence, there is significant path-dependency in VET.

National approaches to, and systems of, VET varied greatly in 1995 and still vary in 2015. The diversity of VET systems has been dealt with by different authors from different angles, resulting in a range of different typologies of national VET and education systems. Instead of applying a predefined typology of countries, we have developed an analytical tool to describe differences in VET between countries and over time from three different, partly overlapping perspectives: an epistemological or pedagogical

perspective; an education system perspective; and a socioeconomic or labour market perspective. The most important trends in vocational education and training common to European countries are discussed from these three perspectives.

Key changes and different perspectives

The analysis illustrates that many national VET systems 'came of age' during this period. Departing from fragmented systems linked to a limited range of industries and sectors, the 1990s and early 2000s saw the development of comprehensive national systems in which VET came to have clearly defined roles in relation to general and academic education. While VET systems have long traditions in crafts and industry, new comprehensive systems have been better able to address wider needs, such as those of the service sector, and systemic needs, including for transparency and permeability, removing dead-ends and allowing learners to progress in learning.

The analysis also shows that the delivery of VET has changed and evolved during these two decades. VET is now delivered by an increasingly diverse set of institutions applying a growing variety of learning formats and settings. While countries normally tend to favour either a school-based or apprenticeship-based VET model, increasingly these main models are being supplemented and complemented by alternative forms of education, training and learning. There are clear indications that there are increasingly mixed systems offering different tracks within one system.

During these two decades, the number of VET qualifications on offer has steadily dwindled in most countries, refocusing VET on broader occupational areas, acknowledging that job-specific skills will inevitably change and that the ability of VET candidates to cope with this change is of essential importance. This development is also illustrated by a blurring of lines between initial VET and general upper secondary education: it is becoming increasingly difficult to say which school programmes should be defined as VET and which as general education. Hybrid or dual programmes that combine general subjects and vocational specialisations have become more common.

A notable change is the emergence and increased visibility of what we term 'VET at higher levels', at European qualifications framework (EQF) levels 5 to 8. Many countries have seen a significant increase in VET at EQF level

5 and the expansion of VET at levels 6 to 8. The signal sent by Germany and Austria in levelling their master craftsman qualifications at level 6, equivalent to the university bachelor, illustrates a redefinition of what is understood as higher education that is taking place in some countries.

Changes at country level and individual trajectories

The above key changes point to consolidation, diversification and expansion of European VET, which can also be confirmed by looking at the trajectories of individual countries. At the same time, the first things which strike the eye when looking at individual trajectories is the considerable role played by path-dependency and the fact that fundamental system changes have not taken place. For instance, not a single country has changed a school-based VET system for a dual system of the German or Swiss type in the past 20 years. Despite academic drift in all Visegrád countries ([1]) they are still very distinct from countries where general education dominates, e.g. the Baltic ([2]) and most southern Europe ([3]) countries. The new emphasis on work-based learning in Sweden has not resulted in an apprenticeship system comparable to those in Denmark and Norway.

Europe as whole, particularly at upper secondary level, has experienced both academic and vocational drift, and some remarkable convergence at least in the key indicator describing the share of VET and general education. In the past 20 years, the share of VET at upper secondary level has decreased in countries where it was high (70% and above) in the early and mid-1990s, while it has increased significantly in countries with traditionally low shares in VET. This is best illustrated by comparing the trajectories of the Visegrád countries (falling shares) with the west Mediterranean countries ([4]) (rising shares). Hence, there are signs of a more equal balance emerging between general and vocational education at upper secondary level.

A similar pattern can be observed in work-based learning (apprenticeships). In countries in which work-based learning dominates the VET system (such

([1]) Czechia, Hungary, Poland and Slovakia.
([2]) Estonia, Latvia and Lithuania.
([3]) Greece, Spain, Italy, Cyprus, Malta and Portugal.
([4]) Spain and Portugal.

as Denmark and Germany), VET has come under substantial pressure due to academisation. In countries with both school-based and substantial work-based tracks (such as Austria and the Netherlands) the apprenticeship track has lost terrain to the school-based track: the exception to this is Norway. In contrast, apprentice numbers have increased in countries that previously had only minor apprenticeship tracks (as in France and Hungary, and recently also Spain). There also seems to be some convergence on the balance of school-based and work-based learning, resulting in a growing number of mixed systems (where work-based tracks exist alongside school-based tracks). It remains to be seen if this proves an historical anomaly, or if more balanced systems will prevail in Europe.

In almost all countries there is a trend within school-based VET towards broader vocational domains, a richer mixture of theoretical and general subject matter, and qualifications providing access to higher education at the expense of more specific practical VET. This can be well be illustrated by the changes in the Visegrád countries, but is also evident in many western countries (including France, the Netherlands and Austria). This trend can be described as hybridisation of vocational and general education, and is partly also visible within apprenticeship tracks. There is an increasing number of apprentices preparing for a vocational *baccalauréat* or *matura* that provides general access to higher education; this is the case in Austria, France and Switzerland and recently also in Denmark. Both the demand for higher VET skills by in economy and changing student choices may be drivers of this trend. An obvious result of these developments is longer schooling and a general shift of the centre of gravity of VET from level 3 to level 4 or even 5 (in all countries).

Stakeholder survey on VET past, present and future

Notwithstanding some insights from international statistics, the above trends were mainly identified through a set of country case studies and the analysis of national statistics. To validate the findings for all countries in the study and to get a glimpse of the future we carried out a non-representative survey of almost 1 500 VET stakeholders and experts in Europe in spring 2018, concerning the past, present and future of VET using 12 predefined trends. The predefined trends were generally confirmed by respondents for the past and were expected to continue in the future, although to different

degrees in different countries. The three past trends, which were confirmed almost unequivocally, were a 'shift towards learning outcomes', 'increasing work-based elements in curricula' and 'growth in VET provision at higher levels'. However, when asked about the future (the next 15 years) the 'shift towards learning outcomes' was no longer among the top six: 'enhancing responsiveness to the labour market needs' was rated among the top three trends for the future alongside the current trend towards increasing work-based elements and growth of VET at higher levels.

Another result from this survey was that the role of VET in preparing students to participate fully in society and to become active citizens was seen as becoming more important for the future. This emphasis on the need for a broader skills base may suggest a perception among education and training stakeholders that personal development and active citizenship are indispensable features of any kind of future learning. An alternative is that VET in Europe may assume an increasing social value and become a more mainstream educational pathway with much broader purposes.

In the survey, we also asked, 'What should VET be like in 2035?' A cluster analysis of this question was the base for three different patterns identified for the future vision of VET.

One group tends to expect that in the next 15 years VET will be the standard educational pathway for all; a part of lifelong learning and (consequently) higher VET will be part of the higher education system. This group also sees a balance between the economic and social orientations of VET as well as a balance between public and private investment, whereby the EU is expected to account for a larger share of VET funding. It seeks more cooperation between VET providers as well as more similarity between national VET systems in the EU.

Another group would also like to see VET being the standard educational pathway for all, but envisages VET as a distinct education sector in 2035 and also clearly opts for a higher VET sector distinct from higher education. This group of people also expects the future of VET to be more oriented towards economic needs and is less averse to competition between providers than the other groups.

The third group stands out as the one with the highest number of non-specified choices, for example in relation to the higher VET sector, the prevalence of local/central decisions regarding VET, the similarity/diversity of national VET systems and the share of EU investment in vocational

education and training. However, only in this group do respondents tend to see the future of VET as targeting specific groups.

Two sets of scenarios for VET in 2035

In order to establish further insights into how VET might develop in the future, three basic ideal scenarios were developed independently of the stakeholder survey. They show some similarities as ideal types, based on a consideration of how VET could develop on two dimensions: strengthening versus diversification and academic versus vocational drift. Three scenarios are feasible:

(a) pluralistic VET with lifelong learning at the heart and in which the distinctions between vocational and general education become increasingly obsolete;
(b) distinctive VET with occupational and professional competence at its heart; this means that VET clearly differs from general education but dominates the education system, effectively a 'VET hegemony';
(c) special-purpose VET with job-oriented training at the heart, in which some very specific forms of VET have survived in an education system dominated by general and higher education.

Many variations and combinations are conceivable within these basic scenarios. They should not be seen as mutually exclusive as countries might contain elements of one, two or all three scenarios. As ideal types they provide a basis on which to develop concrete and contextualised scenarios and six more detailed, concrete scenarios for VET in 2035 were developed:

(a) 'à la carte': a country that has realised the most pluralistic vision of education in which the distinction between VET and general education has become obsolete;
(b) 'cottage gardens': a country in which a range of highly varied but well-arranged and well-organised education provision coexists and in which wide-ranging vocational orientation plays an important role;
(c) 'firefighter VET': a country in which VET is mainly used for tackling education and labour market deficiencies; VET is a minority track mainly concerned with supporting unemployed adults and early school leavers to (re-)enter the labour market;
(d) 'professional champions': a country in which a form of elite VET in the shape of higher apprenticeships has developed, loosely coupled with

a mainstream education system characterised by general and higher education.

(e) 'VET for all': a country in which comprehensive VET has become the first choice and pre-requisite for any further training or job;

(f) 'renaissance of VET': a country in which a modernised version of apprenticeship has become the major route at upper secondary level and a strong and distinctive higher VET sector has emerged.

It is hoped that these scenarios will be helpful tools or starting points for strategic discussions among stakeholders and policy-makers on the future of VET. They have been developed as national approaches, but they may also be useful at European or regional levels, or for subsystems of VET within one country.

Building on discussions of the scenarios and the overall findings of the project, Cedefop will continue its work to explore how VET may develop in the future.

CHAPTER 1.

Introduction

1.1. Background and aim of the project

This is the final report in a series of papers which has been published as part of the Cedefop project *The changing nature and role of vocational education and training in Europe*. The aim of this three-year project (2016-18) was to look into the future of vocational education and training (VET) in Europe and to explore possible policy options to shape this future. For this purpose, we had to look back and explore the main trends and developments within VET and influencing VET. A timeframe of 20 years seemed appropriate for this task. We looked ahead to the year 2035, and went back in our analysis to the year 1995.

Over the past decade, Cedefop has published abundant reports on specific topics related to VET and closely monitored the most recent changes in VET at national level. Despite the wealth of information available in studies and databases, there has been much uncertainty about the status of VET in Europe. While there was not much difficulty in seeing the individual 'trees' in the VET 'forest', it was often difficult to see the forest as a whole. The last time Cedefop looked back at VET history and major trends in order to look into the future, was more than 15 years ago (Cedefop 2002b, 2004). The time was ripe for a fresh exploration.

A simple, but crucial question is: 'Is VET under threat or is VET thriving?' This was not easy to answer when looking at Europe as a whole as there are two competing VET narratives in Europe today. There is a negative narrative which claims that VET is becoming increasingly marginalised, that the number of candidates attending initial VET is declining, reflecting the perceived attractiveness of higher and academic-oriented education, with the skills provided by VET needed less due to digitalisation and job polarisation. The positive narrative claims that VET is expanding to both lower and higher levels, that vocational and work-based learning is becoming more prominent in higher education and also the backbone of lifelong learning. In this narrative the skills provided by VET are essential for continued economic

growth and for upholding welfare. A key task of this report is to reflect on these conflicting narratives and the extent to which they are rooted in reality.

1.1.1. **Activities and methods**

The report summarises three years of research involving more than 100 researchers across Europe. Eight research papers were produced and published during the lifetime of the project. In addition, 20 national case studies were developed, presenting in-depth analysis of developments in different areas

Interim results were regularly presented and discussed with a larger audience ([5]). The core project team, including a dozen experts from the consortium, met with Cedefop in addition to the above events 10 times during the three years of the project, often with the support of additional external experts. These meetings became regular 'expert workshops' rather than the usual progress meeting between client and contractor.

It would go beyond the scope of this introduction to detail the methods applied in this research project; these details can be found in the individual research papers. Alongside literature reviews and country case studies, the spectrum of methods ranged from interviews with industry experts to multivariate regression analyses of data from the labour force and adult education surveys, from scenario workshops to an online survey on the future of VET including around 1 500 VET stakeholders in Europe. We also collected national data for 30 countries on enrolment and completion at upper secondary level from 1995 to 2015, revealing interesting differences to the data jointly collected and published by UNESCO, OECD and Eurostat.

1.1.2. **Structure of the report**

The aim of this report is not just to draw together the previous work, but to connect and synthesise the series of research papers produced by this project and to complement this with further analysis, modelling and literature to provide new insights. The report presents new research that has not been published before based on an online survey among VET stakeholders and results of a scenario workshop.

([5]) Cedefop organised three workshops with around 40 participants in June 2015, February 2017 and 2018. In July 2018 the project was the focus of the Austrian Presidency conference on VET and in November 2018 it was presented to more than 400 participants of the European vocational skills week, also in Vienna. It was a regular topic of the Cedefop Brussels seminars with the EU Presidency and Advisory Committee for Vocational Training (ACVT) meetings.

The report is structured as follows: the subsequent sections of this chapter introduce the topic and the challenges of comparative research in 30 countries, as well as explaining some key concepts and definitions. Chapters 2, 3 and 4 present a synthesis of previous work. Chapter 2 briefly reminds us of external factors shaping VET which have been extensively discussed (Cedefop (2018d). Chapter 3 brings together the key trends we identified in Europe since 1995 (many of which had started before that year) by connecting previous research on external factors (Cedefop, 2018d), enrolment in VET at upper secondary level (Cedefop, 2018b), vocationally oriented learning at higher levels (Cedefop, 2019a) and continuing vocational education and training (Cedefop, 2018c, 2019c). In a way Chapter 4 draws on the same reports but while Chapter 3 looks at changes across Europe, discussing them one by one, Chapter 4 presents the changes country by country in country groups. This enables country patterns and similar trajectories to be identified and explained. Chapter 5 reports analysis of a survey about the past, current and future of VET conducted among 1 500 VET stakeholders and experts in Europe in spring 2018. This chapter complements the previous ones with opinion data on past trends; by presenting future visions for VET it prepares the ground for Chapter 6 which presents five scenarios for VET in the year 2035.

1.2. From Rome to Copenhagen and beyond: a brief history of VET policy in the EU

In contrast to general education, where EU Member States defend their autonomy (Lawn and Grek, 2012), VET has been open to European cooperation from the beginning of the European integration process (de Olagüe Smithson, 2017). The 1957 Treaty of Rome made strong provision for vocational training; in 1963 a 'common vocational training policy' emerged in the form of 10 'common principles' (Council of the European Economic Communities, 1963). Although today's wording would probably be different, many of these principles are topical: 'to bring about conditions that will guarantee adequate vocational training for all; […] to broaden vocational training on the basis of a general education, to an extent sufficient to encourage the harmonious development of the personality […]; to enable every person to acquire the technical knowledge and skill necessary to pursue a given occupation and to reach the highest possible level of training,

whilst encouraging, particularly as regards young persons, intellectual and physical advancement, civic education and physical development; […] to promote basic and advanced vocational training and, where appropriate, retraining, suitable for the various stages of working life' (ibid.).

In 1975, the European Centre for the Development of Vocational Training (Cedefop) was launched to support, through research and cooperation, the goals of the Treaty of Rome; in 1992 the community's role in vocational education was broadened by the Maastricht Treaty which established community policies in six new areas, including education and vocational training (Moodie, 2008). This has to be seen in the context of a slump in economic growth and rising unemployment figures which steered EU policy-maker attention towards the mutual relationship between growth, competitiveness on global markets and education and training; it paved the way for new approaches in demand-side employment policies (Weishaupt, 2011) and a new focus on lifelong learning (West, 2012).

With the Copenhagen process and the attempt to replicate the Bologna process in the field of VET, new forms of, and strengthened cooperation in, VET started. While mobility and cooperation projects were already in place, the foundation for the EU's current key policy instruments in VET date back to the Copenhagen declaration (2002). Since then, the European dimension in VET has been reinforced with particular focus on increased transparency of qualifications and enhanced quality in VET. So far, with the exception of Europass, the Common European Framework of Reference for Languages and the various mobility activities (all of them not specific to the field of VET policy), other instruments such as EQAVET, ECVET, EQF, ESCO or the EAfA ([6]) have not yet reached European citizens (students and employers alike) on a broad scale. Nevertheless, impacts of the Copenhagen process – particularly the EQF – are clearly visible in Member States (Ante, 2016; Elken, 2016).

([6]) ECVET is the European credit system for vocational education and training.
EQAVET is a network on European quality assurance in Vocational education and training.
EQF is the European qualifications framework.
ESCO is the European classification of skills/competences, qualifications and occupations.
EAfA is the European Alliance for Apprenticeships.

1.3. VET as we know it

VET is a wide concept, not only understood differently by different countries, but also used differently by different international organisations. Broadly speaking, VET today covers any curriculum content in school which aims to prepare for the labour market, much of higher education, a great deal of formal and non-formal learning undertaken by adults and any training conducted within firms. Cedefop describes VET as 'education and training which aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market' (Cedefop, 2014b, p. 292); it deliberately does not referr to any education and training level or sector.

While Cedefop, the European Commission and the OECD are using the term VET, UNESCO uses the term TVET (technical and vocational education and training) (UNEVOC, 2006). Despite being more specific in its most recent definition of TVET, there seem to be no obvious differences to VET as used in the European context ([7]). Until the early 1990s, a particular feature of initial VET for most countries was that it was terminal, designed for labour market entry only (which is still reflected in parts of the ISCED 1997 classification). However, thanks to the increasingly dominant paradigm of lifelong learning, systematic dead ends have now been rare for several years (although the numbers of those progressing into further higher education are still low). UNESCO acknowledges that direct preparation for work was originally the main goal of TVET, and this remains prominent in many developing nations. However, new domains of knowledge and new disciplines have become important at all levels of education and training and the old distinction between academic education for white collar employees (largely concerned with 'intellectual work') and vocational education for blue collar workers (concerned with 'manual work') has become obsolete. 'The upward differentiation of TVET from first to second level and then to the third level of education has been an important development of the 20th century

([7]) According to UNESCO (2015a) 'Technical and vocational education and training' (TVET) is understood as comprising education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods. TVET, as part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development which may lead to qualifications. TVET also includes a wide range of skills development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills and citizenship skills are integral components of TVET.'

and sets the stage for the 21st century. The current focus is increasingly upon preparing knowledge workers to meet the challenges posed during the transition from the Industrial Age to the Information Age, with its concomitant post-industrial human resource requirements and the changing world of work' (UNEVOC, 2006). Stimulated by this transition, the US government put an end to the use of the term VET in 2006, as it was considered to be too strongly linked to the old paradigm; instead it was renamed 'career and technical education (CTE)' ([8]). It remains to be seen whether the different terms will also lead to different conceptions of vocational education and training in the future. A study of definitions and conceptions of VET in 30 European countries has revealed substantial differences both in the terminology (terms used in the national language) and in the conception of VET (see Section 1.4). But, despite these differences, in almost all European countries VET in terms of its dominant conception is perceived as occupation-specific education and training geared towards securing a supply of skilled labour. Further, in most countries VET is predominantly addressing young people (initial VET), providing qualifications at the middle level of education (ISCED-11 levels 3-4, EQF levels 3-4), financed from education budgets and coordinated by central governments.

Although in official definitions the relation to occupations or the labour market more generally seems to prevail as the single distinct criterion by which VET can be distinguished from general education, there are a number of other important differences and specific characteristics of VET which are often overlooked, for example:

(a) vocational education at upper secondary and post-secondary level is much more varied than general education. While most countries have one or two dozen different upper secondary general education curricula, many countries have more than 200 programmes for vocational education;

(b) while upper secondary general education is standardised in practically all countries, for VET curricula the canon and the expected education outcomes are standardised in only some countries. There are also countries where there are different VET programmes preparing people for the same occupational field;

([8]) Carl D. Perkins Career and Technical Education Improvement Act of 2006. https://en.wikipedia.org/wiki/Carl_D._Perkins_Vocational_and_Technical_Education_Act

(c) although there are differences in the degree of ownership, business interest organisations and trade unions often enjoy a strong say in what is going on in the particular vocational tracks relevant to their industries;
(d) financing is more diverse for vocational education. While general upper secondary education is mainly funded by the State, some types of VET, such as the dual system of apprenticeship, require strong financial contributions by employers.

Another area where VET and general education differ is in their respective status. This is a sensitive issue but VET is largely perceived as inferior in status compared to general education. This has been claimed both by country experts consulted in this project as well by a representative survey of the public perception of VET in Europe which found that most respondents consider 'general education as having a more positive image than VET' (Cedefop, 2017b). That survey found that agreement is highest among respondents who went through general education themselves (82%), but those who participated in vocational education are also likely to agree with the statement (71%).

However, there are also interesting exceptions to what might be considered a general rule of VET in Europe. For instance, in Finland the introduction of a new law in 1998 has given eligibility for graduates of the vocational track to access polytechnics and universities, and VET is nowadays considered equal to general education ([9]). School-based VET in Austria (which is a separate but equally important track alongside the apprenticeship system at upper secondary level), is also perceived as equal to, or even higher than, general education ([10]). These are both examples of the changing role and perception of VET, but also of the huge variety of VET discussed in Section 1.4.

1.4. The variety of VET

Our research – more than in previous studies – has demonstrated that there is impressive diversity in European VET. This is partly a result of the broader scope taken: we have not been limited to a specific topic, target group or type of VET; we have covered initial vocational education and training (IVET),

([9]) Country questionnaire. See also Stenström and Virolainen (2018).
([10]) For details of these examples see Chapter 4.

continuing vocational education and training (CVET) and higher VET; we have looked at a longer period than most other Cedefop studies or other comparative studies of international organisations; and we have analysed all Member States plus Norway and Iceland. We have also tried to be more sensitive towards differences which are often ignored. For instance, we have taken the different national understandings and conceptions of vocational education and training seriously, revealing even more diversity (Cedefop, 2017c, 2017d). National approaches, to and systems of, VET varied greatly in 1995 and still vary in 2015. We knew before that, in many countries, a clear majority (at least two thirds) of all students at upper secondary level are engaged in some sort of VET, while there are also regions in which VET is a minority track (Iberian peninsula, Baltic States and the east Mediterranean part of Europe). We also knew that most VET students at upper secondary level in Europe follow school-based programmes, although in a few countries dual education dominates (as in Denmark and Germany).

Accordingly, VET can be understood either as vocationally oriented school education or work-based initial training (Cedefop, 2017d). However, there are also conceptions of VET which would be better described as 'further training' (e.g. in Ireland or the UK) and there are countries which seem to have abandoned the dichotomy of initial and continuing education and perceive VET as a part of lifelong learning (as in Finland). Some countries see CVET as exclusively job-related non-formal learning for adults (most Visegrád States), others see formal education for adults and even liberal education as part of CVET (e.g. Ireland). Hence, the notion that 'VET is always occupation-related' should be treated with caution when the full variety of VET conceptions in Europe is considered. For instance, VET in Ireland is understood as further education and training (FET) and adult literacy; community education, which is regarded as liberal (adult) education (as opposed to VET) in most countries, forms part of the Irish notion of FET. It has to be noted that national conceptions of IVET and CVET are not necessarily logically linked (see also Section 1.5 and Cedefop, 2019c).

Also, we now know much more about the different labour market and educational outcomes of the various set-ups of upper secondary education and training. For instance, countries with dominantly apprenticeship systems (Denmark, Germany and Switzerland) or countries with combined work- and school-based vocational education (the Netherlands and Austria) have positive impacts on the labour market entry of vocational school graduates, sheltering them from unemployment and unskilled jobs and ensuring their

entry to skilled positions on the occupational ladder. But these countries do not automatically provide their graduates with the opportunity to continue their studies in formal or non-formal education later in life. In countries where general upper secondary education dominates (e.g. Mediterranean and Baltic countries) vocational education graduates are also less likely to continue their studies in formal education than general upper secondary education graduates. But in these countries the vocational effect is positive on participation in non-formal education and training, which may indicate a 'compensation' effect, with individuals needing to fill gaps in their skills left by formal vocational education in the upper secondary phase. Vocational education does not have a strong negative effect on educational and labour market outcomes in this type of country group. Unfortunately, such findings only provide a snapshot of the diverse effects of different IVET settings; due to lack of data, we could not study the changes of these effects over time (Cedefop, 2018c).

The variety of VET even increases when looking at types of VET or types of programme. The variety of VET forms and approaches in Europe may not be so surprising given the diverse traditions. While more similarity may be expected when a certain segment or type of VET, such as apprenticeship programmes, is examined, the contrary is the case: even in allegedly similar programmes there is impressive diversity. As an example, almost all Members States provide some form of apprenticeship programme. They differ as regards their position in the overall national skill formation system and the number of apprentices enrolled, but they also differ greatly in duration (one to four years), structure (one-phased, two-phased), target group (youth, adults, unemployed) and governance (steered by the State or social partners). Apprentice pay varies by more than 100% between countries; in most countries it is paid by employers, but in a few cases exclusively covered by the State.

Leaving the differences in details aside, there still seems to be two fundamentally different notions of apprenticeship in Europe. One sees apprenticeship as a specific type of programme, which aims to qualify people for jobs as skilled workers; the qualification obtained is usually unique for the type of programme (as in Denmark, Germany, Croatia and Austria). The other sees apprenticeship as a mode of learning that includes on- and off-the-job learning, but which is not restricted to the level of skilled workers or a particular type of programme. Instead, it can be applied at any level and

may lead to qualifications at any level (for instance in France, Finland or the UK) (Cedefop, 2018a).

There are also important differences in external factors impacting national VET systems. Technological change is affecting – though to different degrees – any industrialised economy, as did the financial crises. However, other external factors relevant for VET also differ across Europe. For instance, there are rapidly shrinking populations (due to low fertility rates and emigration) in many eastern Europe countries and stable or increasing populations in many western and Nordic countries. Consequently, some countries face favourable and others unfavourable socioeconomic conditions for the development of VET (compare also Cedefop, 2018d). Some trends seem to be universal, as in increasing provision of and participation in VET at higher levels, while others are cyclical, such as interest in apprenticeships.

The scope and pace of change of VET differs between countries; this is not necessarily linked with exogenous factors, but more so with the political system or culture. Some countries, notably the UK, seem to be more volatile as regards changes in VET policies and structures. While there seems to be a long-term policy goal in the UK which is essentially that of creating a market for VET, the 'VET system, or parts thereof, are periodically subject to sometimes swinging reforms affecting the qualification system, curriculum development, introduction of new qualifications, training providers, funding levels, etc. It is a highly dynamic system' (Gambin and Hogarth, 2018, p. 2). In contrast, in 'conservative' countries, such as Germany or Austria, changes in VET policies and structure seem to be more modest or gradual in the past two decades.

We are interested here in change and particularly the direction of change in terms of the 'broad picture' in Europe. However, the broad picture can also conceal interesting differences. For instance, we have found that upper secondary VET at aggregated European level has been very stable in the past two decades, but both relative increases and decreases in VET enrolment can be found at country level over the same period. There have been remarkable increases in VET enrolment in Spain and Portugal – though starting from a very small base - at the same time as remarkable falls in Denmark and Germany (starting from a very high level). Other countries, in which VET at upper secondary was already prevalent, have seen further increases, as in the Netherlands, Austria and Finland (Chapter 4).

1.5. Managing the variety of VET

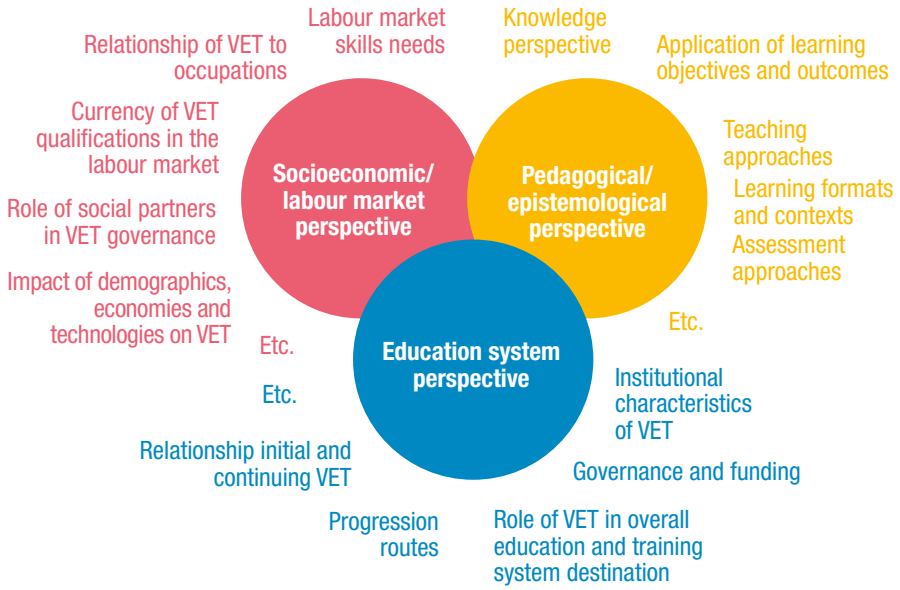
The diversity of VET systems has been dealt with by different authors from different angles, resulting in a range of different typologies of national VET and education systems. Wolf-Dietriech Greinert (2004a, 2004b) took a cultural-historical approach and distinguished a dual model (Germany), education-led model (France) and market model of education (UK-England) in the context of broader models: dual-corporatist, State-regulated bureaucratic and liberal market economy models. From a political economy perspective, Busemeyer and Trampusch (2012a) refer to the relative engagement by firms and the State in VET and separate skill regimes into collective (Germany), segmentalist (Japan), statist (France) and liberal (UK-England). From a sociological and educationalist perspective, Green (1991) and many others take the set-up of upper secondary or post-compulsory education as starting points and include the articulation of central governments, labour markets and firms as a basis for their typology. In our research we partly applied the (admittedly simple) approach taken by Hanushek and colleagues (2011) who classified countries based on the percentage of upper secondary education students studying in vocational programmes and the percentage of students in combined school- and work-based vocational programmes. The country groupings emerging from this come close to those proposed by later work by Green and Pensiero (2016). We cannot give a full account of these approaches here and refer the reader to the excellent overview provided by Rageth and Renold (2017) as well as other reviews of VET typologies by Gonon (2016) and Bosch (2016) or typologies of lifelong learning systems by Saar and Ure (2013).

We partly drew upon these typologies in our research, and in Cedefop (2018c) we explicitly used a classification based on Hanushek et al. (2011). We also used an approach which tried to combine pedagogical, education-system and labour market perspectives and more fine-grained categories to describe country differences (Cedefop). Further, we scrutinised national understandings of VET and CVET. When looking at such a detailed level, there is no single pair of countries in Europe which is identical and can be put into a box. This is not to say that there are no similarities between countries, but that we have to be cautious with typologies, especially if they do not consider the changes taking place in each country (which they usually do not).

Instead of applying a predefined typology of countries, we have developed an analytical tool to describe differences in VET between countries and over time from three different, partly overlapping perspectives: an epistemological

or pedagogical perspective; an education system perspective; and a socioeconomic or labour market perspective. In the following paragraphs we briefly describe the differences between these perspectives; learn more in Cedefop (2017c) and (2017d).

Figure 1. **A conceptual framework to characterise VET**



Source: Cedefop, 2017c

In the epistemological or pedagogical perspective, it can be argued that vocational education's identity is rooted in distinctive production, representation, use and transfer of knowledge, which can be associated with distinctive ways of teaching and learning. VET emphasises tacit as distinct from cognitive knowledge. The tacit knowing view understands knowledge as experience and emphasises that knowledge is mainly practical (know-how, skills), implicit, personal and situational. Learning is through practical experience (learning by doing) and happens through socialisation in communities of practice. Teaching can be through a master-apprentice relationship and more generally involves creating learning environments in which students can gain experience, such as workplace-based settings.

With an education system perspective, the variety of forms of VET, types of provider, levels and funding sources and mechanisms come to the fore; this is the approach taken in international statistics. An education system perspective looks at the way VET as an institution has evolved, and continues to evolve, over time. It considers such issues as whether the State or employers are the main VET providers, the nature and scale of VET in the initial (compulsory) phase of education and for adults, and the status of learners (whether students in education or apprentices holding employment contracts with employers). It touches on the issue of parity of esteem between vocational and general education since this is mainly determined by the dominant forms of VET provision and the occupations or professions for which they prepare people.

Using a socioeconomic or labour market perspective, the wider functions of VET are considered: the ways in which it contributes to social stratification by providing access to particular career pathways and to the skills, competences and attitudes required by companies and their work systems, allowing workers to cover the requirements of their given workplace, while workplaces allow the acquisition of skills. VET provides benefits for employer organisations and individual workers alike, giving centre stage to questions such as who contributes how much to the costs of VET and how benefits are distributed.

An obvious distinction that arises in any discussion about VET covering more than two countries is that between broad and narrow understanding of VET. At some point in these discussions there is always someone arguing (or thinking): 'But this we do/or do not consider VET in our country!'. However, what is considered as 'broad' and 'narrow' differs substantially. For instance, in most European countries VET is clearly understood as initial vocational education (mainly at ISCED level 3 and 4), as a particular part of a school-dominated initial education system. But in some countries (UK-England and, to some degree, also Ireland and Cyprus) VET is understood as further training for all age groups (with high shares of older learners) at various levels (including lower levels, such as ISCED-11 level 2) offered by a wider range of further and higher education providers. Programmes for the unemployed or second chance programmes usually form part of this understanding of VET while they do not in the previous case (Cedefop, 2017d). CVET in most European countries is understood as job-related formal and non-formal education and training for adults following the completion of initial education or as education carried out after entering the labour market. It is provided

by employers, training centres, and formal education systems and covers different qualification levels. However, a narrower understanding of CVET as exclusively job-related non-formal education and training for adults also exists (in Greece, Spain and Italy). In these cases, CVET is understood as further education and training outside the formal education system, aiming at upskilling and employability goals or complementing knowledge, abilities and skills gained in initial education. While countries apparently differ in their emphasis on initial or continuing forms of vocational education and training, some seem to abolish the distinction between IVET and CVET and both form part of one conception of VET seen as lifelong learning (s in France and Finland). Table 1 summarises possible meanings of broad and narrow in the context of vocational education and training. The point here is that a country's conception of VET is not necessarily broad or narrow in all dimensions, but that various combinations can be identified. Also, there is not necessarily a relation between the types of VET system and the understanding of CVET (Cedefop, 2019c).

Table 1. **Meaning of broad and narrow in the context of VET conceptualisation**

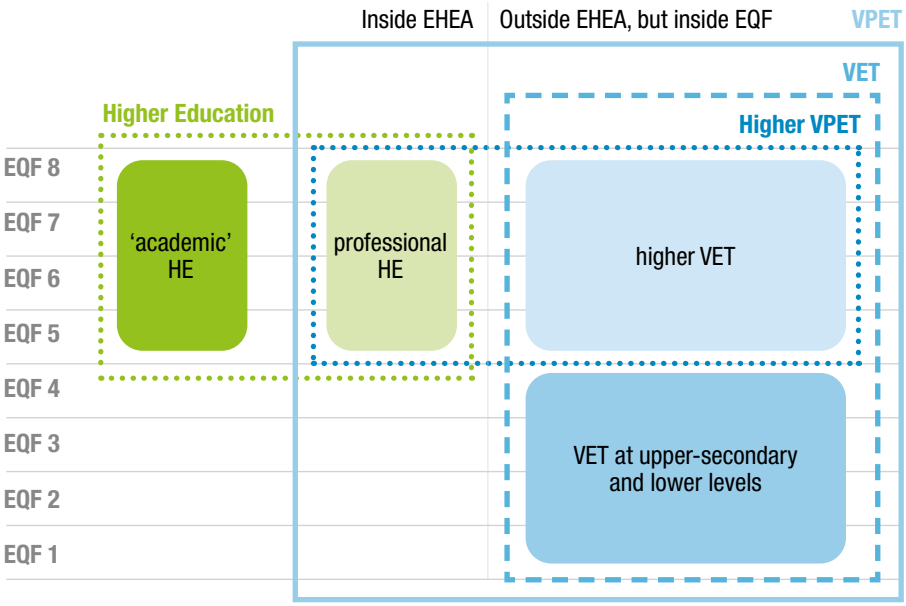
	Broad	Narrow
In terms of	VET mainly understood as…	VET mainly understood as …
Forms of learning	formal and non-formal learning	formal learning only
IVET and CVET	covering IVET and CVET	focused on IVET
Scope of CVET	covering job-related and non-job related CVET	exclusively covering job-related CVET
Education sectors	a cross-sectoral term or particular feature of any education and training (including forms of HE)	as a particular sector or set of subsectors of the education system (e.g. distinct from HE).

Source: Cedefop.

The expansion and broadening of the notion of VET has also raised the question about its relationship with higher education. This becomes apparent in the confusion of terms used for vocationally oriented higher-level routes within and outside higher education, including higher VET, vocational or professional higher education. For the purpose of this study the following terms are used (see also Figure 2):

(a) vocational education and training (VET) comprising both VET at lower, upper secondary and post-secondary level (EQF 1-4) and higher VET (EQF 5-8);
(b) higher VET used for vocationally oriented types of programmes and qualifications that are fully outside the European higher education area (EHEA) and are linked to EQF levels 5-8 via their inclusion in a national qualifications framework (NQF);
(c) professional higher education (professional HE) for higher professional and vocational types of programme that fall under the EHEA, particularly short cycle and professional bachelor and master degrees;
(d) (higher) vocational and professional education and training (higher VPET), if it needs to relate to both VET and professional higher education.

Figure 2. **Schematic definition of terms used in the report**



NB: Width of levels roughly illustrates distribution of VET student.
Source: Cedefop. See also Cedefop (2019a).

Despite the prevalence of different conceptualisations of VET, our research has provided evidence that, in the period investigated, there has been a tendency towards a broader understanding of VET. Obviously, this is not a new phenomenon, but it started earlier than some authors contend. For example, as West contends, based on his analysis of the evolution of VET policies in the European Community since the Treaty of Rome in 1957, 'The overall conceptualisation and positioning of VET has moved from being fairly specific training or retraining for particular jobs to a very wide concept, overlapping with general education and spanning, in theory at least, secondary education, adult training both general and in connection with active labour market measures, much of higher education and lifelong learning as a whole (including quite explicitly non-formal and informal learning)' (West, 2012, p. 19).

The past two decades have seen many and varied changes in VET, and having a sound understanding of where we have come from is essential if we are to plan well for the future. The rest of this report is dedicated to this goal.

CHAPTER 2.

VET in a changing world: the challenges

The past 30 years or so have proved to be both invigorating and challenging times for policy-makers across Europe, with significant changes in respect of technology, the economy, society and demography. These factors have interacted in different ways at different times and in different places. Untangling this complexity can be challenging, made more difficult by the fashion to talk about change centred around technology and the obvious changes that can be seen in everyday lives as a result of factors such as computer technology, smartphones and social media.

The risk here is focusing only on what is immediately in front of us and missing other, equally (or more) important factors and the complex ways in which they interact. There is also the challenge posed by the various theories/explanations of change and future expectations: these often pose insights and perspectives that are contradictory. For example, some declare the advent of the 'second machine age' (Brynjolfsson and McAfee, 2014) which will put an end not only to manual work, but to cognitive work as well, fuelling fears about mass unemployment and increasing social inequalities. Others contend that 'the phenomenon currently referred to as "digitalisation of the economy" is not a new technological revolution, neither is it Brynjolfsson and McAfee's second machine age, nor Rifkin's "third industrial revolution", nor the World Economic Forum's 'fourth industrial revolution', nor even the "fifth industrial revolution" (which started as long ago the early 1980s)' (Valenduc, 2018, p. 12). Instead, they believe that what we are living through is 'the transition to the deployment period of the fifth great surge' motivated by a 'new model of growth which harnesses the potential of digital services and technologies without forgetting the importance of social inclusion and ecological sustainability' (Ibid).

To assist in unravelling the complexity of change in VET, we identify a number of broad groups of factors that have had a bearing on it during the 1995-2015 period. These form the basis for the rest of this section (for detailed discussions of the factors in the next sections see Cedefop, 2018d).

2.1. The economy

VET has been affected by both long-term structural economic shifts and short-term cyclical changes. Structurally, since the mid-1990s, the decline of manufacturing industry has continued: in 1996, the share of industry in EU employment was 20.7% but it had fallen to 15.3% by 2016 (Eurostat, 2017). In contrast, the share of 'professional, scientific and technical activities' in employment rose from 7.6% to 12.7%. These trends have posed a challenge in some economies where VET and apprenticeships were traditionally associated strongly with manufacturing and suffered a blow to their reputation through being associated with declining sectors. VET has sought to develop new and/or enhance existing programmes for new/growing occupations.

Globalisation and technology were continuing to stimulate the relocation of manufacturing jobs outside Europe during the 1990s and fuelled the idea that Europe needed to become a high-skilled knowledge-based economy, as embodied in the EU's Lisbon goals for 2001-10. Alongside these global trends, Europe has continued to experience its own geographic shifts in production, not least as a result of ex-Soviet bloc countries being attractive sources of well-skilled labour on relatively low wage rates. The pursuit of higher skills has continued to the present day, stimulated by Europe's competitors, such as China, moving into more highly skilled production, and placing concomitant demands upon VET systems.

Globalisation has also had consequences for the internationalisation of the workforce, with multinational corporations setting the same skills and training standards for their employees irrespective of their location. Competing in this globalised economy has increased the need for Europe to become a single, united entity with regards to the supply of labour; it continues to drive measures to establish common reference points and standards for VET and qualifications across Member States.

Another important trend has been the growth of temporary and part-time employment. Between 2002 and 2017 the share of temporary employees in the EU increased from 11% to 13%, and the share of people working part-time rose from 15% to 19%. At the same time, inter-country variation is high: the highest shares of temporary employees are in Spain and Poland (both 26%), and the lowest in Romania (1%); part-time employment is highest in the Netherlands (47%) and lowest in Bulgaria (2%) (Eurostat, 2018d). Such changes are linked to the rise of new forms of work organisation, such as

the Hollywood model and the gig economy (Hogarth and Papandoniou, 2017); they raise questions for VET systems in terms of how to deliver VET efficiently and effectively into workplaces where temporary and part-time employment are growing in importance, or are already the dominant mode of employment. Technology means many of the workplaces are 'virtual' shared spaces rather than traditional physical locations.

In terms of economic cycles, by the end of the 1990s, Europe's economy had largely recovered from the deep recession many countries had experienced at the start of the decade. Globalisation was stimulating growth. The economic shock of 2007 was therefore all the more intense, and many economies in Europe are still recovering, with associated effects such as less public funding available for VET. The emphasis on work-based learning means that it can be vulnerable to the economic cycle because of its reliance on employer demand for skills and labour. In some countries there is less reliance on work-based learning as school-based courses available; this helps even out cyclical effects. There is a more general expectation that ensuring the skills supply system is tied to employer demand may ameliorate some cyclical effects. VET has thus sought to be more responsive to employer demands that can now change quickly by ensuring national VET standards are closely tied to occupational standards and improving the involvement of social partners where necessary.

2.2. Social and demographic change

Human capital has played a large part in Europe's response to the economic challenges it has faced over recent decades. The need to raise skill levels while simultaneously ensuring that they are better matched to current and future economic needs has played a central role in policy-making at both pan-European and country levels. However, ageing populations and falling birth rates mean that it has become less feasible to rely on young people to acquire the new skills needed to sustain economic growth, since their numbers are declining and recent data highlight the limits to the rises in life expectancy that have been experienced ([11]). Retraining and upskilling of adults, along with the validation of skills acquired informally or non-formally, have become important VET goals in this context. These changes have also

([11]) See for example Donelly (2018), Farand (2017) or Gentrup and Krieger (2018).

provided a stimulus to the growth of (new) sectors and occupations, such as care for elderly and more health professionals specialising in geriatric care. At the same time, the effect of the ageing population on labour to replace workers who retire is that there will continue to be substantial demand in medium- to low-skilled jobs, many of them in the VET domain ([12]).

Cross-border labour flows within Europe might even out the demographic pressures to some extent across Europe, augmented by the increased inflow of third country migrants, although the latter development poses new challenges in terms of identifying existing skills and, where necessary, augmenting them. However, migration is also a cause of social and political pressures, being one of the factors behind Brexit for example.

There have also been other social factors influencing VET. More women are now engaged in paid employment, closing the gap with men in most, though not all, countries ([13]): in 2001 the EU-28 female employment rate was 58% and it had risen steadily to 64% by 2015, while, over the same period, male employment fluctuated in the range 75% to 78% (Eurostat, 2018a). Women are much more likely than men to be employed part-time: in 2016, 31% of women aged 20 to 64 in the EU worked part-time, compared to 8% for men (Eurostat, 2018d). This raises important issues for VET providers in terms of how to meet the needs of women for training, given that part-time employees are less likely to receive training in the workplace than full-time ones.

Social values have also changed since 1995. Especially relevant is the spread of notions of individual choice. These are bound up in complex ways with changes in family and social structures related to the economic changes described above, as evidenced in the continuing fall in household size ([14]) and increasing prevalence of lone parent households ([15]). Ideas about individual choice are also related to Internet use, with social media empowering individuals, and other technological changes making it possible for manufacturers and service providers to offer increasingly individualised

([12]) See Cedefop' skills forecast for 2018: http://www.cedefop.europa.eu/el/events-and-projects/projects/forecasting-skill-demand-and-supply/data-visualisations [accessed 7.12.2018].

([13]) In some countries, such as Czechia and Sweden, the gap has been maintained; in two countries, Latvia and Lithuania, employment rates are now lower among women than among men following a sharp drop in rates among men in 2010, and a much more modest rate drop among women (Eurostat, 2018b).

([14]) Average household size in the EU-28 fell from 2.4 in 2007 to 2.3 in 2017. This is a near universal trend in all countries, with the largest recent fall being observed in Lithuania, with an average household size going from 2.6 members in 2007 to 2.1 members in 2017 Eurostat (2018c).

([15]) In 2017, 15% of EU households with children comprised lone parents Eurostat (2018c).

goods and services. Individualism has also fuelled – and been fuelled by – neoliberal ideas about the role of the State in liberal market economies, pushed along in Europe by the end of the Cold War. Vocational education and training, like all other areas of public policy, is now subject to demands that provision be more responsive to the needs of individuals: in this case it is the right to choose when and how they learn. This demand, along with economic and technological changes (see Section 2.3.), underpins the move to improve VET flexibility, including through the increasing use of learning outcomes.

At the same time, the rise of individualism has started to intersect with the question of social mobility. In many western economies the challenge of ensuring social mobility has become clear: the promise of the welfare State has been to reduce inequalities but, in some countries, little or no progress has been made in this respect, while in others, like the UK, it has gone backwards. In education, the promise of upward social mobility has changed into the imperative of preventing downward social mobility through education. More generally, these factors, coupled to the criticism that there are growing numbers of people who are being left behind by globalisation, has fuelled the rise of 'anti-establishment' populist politics and fears that a potential post-democracy (Crouch, 2004) is emerging and project Europe (Krastev, 2017) is in danger.

2.3. Technical change

Technical change, notably stemming from digital innovation, has been increasingly seen to have a transformative impact on production processes. It is also bringing about economic and social change at unprecedented rates: it took a century to transition from an agricultural to manufacturing economy, whereas the fourth industrial revolution may happen in less than two decades, giving both learning providers and policy-makers much less time to adapt.

The challenges of technology pose a significant challenge to VET systems, requiring them to be able to respond more quickly than ever before to changes in the labour market. Technological change means skills become outdated more quickly than in the past and that new skills in new jobs emerge with unprecedented speed. Important here is the role of skill anticipation systems, where the skills system is able to respond flexibly to emerging/foreseen skill demands in a timely fashion. On the VET supply side, ensuring

adequate provision for adults (as in enhanced CVET) so that they can update or acquire new skills is increasingly critical.

VET systems also need to ensure that VET teachers and in-company trainers have access to up-to-date technologies and associated technical knowledge so that the teaching they deliver is relevant to industry needs. This involves reconfiguring the ties between industry and the VET system in specifying competences and curricula, which is sometimes reflected in giving social partners more say over VET content.

2.4. The nature of change: the interplay of endogenous and exogenous factors

Change comes about in VET systems through the interplay between the types of exogenous factors described above and factors that are endogenous to VET systems. The exogenous factors described in this chapter have included social and demographic shifts, technological advances, and economic changes; they can be incremental changes and also sudden 'shocks'. However, their effect on VET systems depends significantly on an individual VET system's endogenous institutional structures and processes, dominant conceptions of VET and the behaviours or 'cultures' that have developed as a result of those structures and conceptions. These dimensions come in different configurations in different countries and this affects how individual VET systems interact with exogenous factors, over which they have relatively little influence. In general, however, VET system change takes the form of both regulatory or policy change and/or changes in behaviour amongst various actors within the system.

Exogenous factors play out in different ways. Some of the broader societal / economic changes described above have direct analogies in VET. For instance, the increasing individualisation that is apparent in consumer behaviour and life styles is paralleled by the shift towards increasingly individualised pathways in VET. Other external factors may appear to be universal but may not apply to all parts of Europe to the same extent or may run in different directions; this is particularly the case for migration and population growth/decline.

Over time, VET systems may be reacting to similar, though not necessarily identical, external pressures, but they are doing so from very different starting points. This means there is an element of 'path dependency': how

systems respond is partly conditioned by the path they are already taking. The processes and structures of skill formation differ considerably between nation States (compare, for example, Germany and the UK) which can mean different policy responses in different countries to the same external stimuli. Within countries we may also find different behaviours by stakeholders. Regional/local authorities and training providers and employers might react in different ways to similar policy inputs 'from above' depending upon their own structures, processes, norms and values as well as those within the system.

In light of these observations, are there any 'theories of change' that can help us to understand better the processes that might be taking place between exogenous and endogenous factors? We return to a discussion of how to explain change in Section 4.1 when introducing the country analysis. But before presenting the changes within the past 20 years country by country, Chapter 3 looks into changes in VET in Europe across countries.

The way we have described changes in VET has, so far, mostly followed the idea of what is known as PEST analysis ([16]): the analysis of political, economic, sociological and technological (PEST) change and how it affects VET. This approach is grounded in a rational perspective on change in which the main logic of coupling problems and solutions is linear. It is the policy problem (such as youth unemployment) that forms the basis for policy solutions (such as expansion of apprenticeship). In this perspective, stages of a policy process (agenda-setting, decision-making and implementation) can be clearly identified.

However, daily experience shows us that change is not always like this. Quite often change looks like the result of a range of factors that can be difficult to predict and untangle. This does not mean that actors involved would not have specific preferences for particular solutions, but there are unplanned and uncontrolled events and constraints that influence the process and its outcomes. This perspective on change emphasises the non-linearity of systems, in which the same impact can lead to different results in different contexts and, vice versa, similar solutions may be the result of different impacts. In the rational perspective solutions follow problems, but in the irrational perspective problems and solutions may exist more or less independently.

Another idealised perspective is change driven by the solution. A solution-driven process of change occurs when there are normative views on what

([16]) See Wikipedia definition: https://en.wikipedia.org/wiki/PEST_analysis

a good solution is: an example is the sort of policy borrowing by other countries of the German VET system which is regarded a good solution. Introducing a dual system following the German or Swiss example is not necessarily the answer to a problem in a given context; rather it may itself 'provoke' problems (Gonon, 2014).

Another model of change is provided by proponents of historical institutionalism or historical contingency (Thelen, 2014). The perspective of historical contingency emphasises, on the one hand, incremental and path-dependent evolution and, on the other hand, explains change as the result of critical junctures (for instance, the new emphasis on apprenticeships in Europe as a result of the dramatic rise in youth unemployment following the economic crises in 2008-09). New policy initiatives in this perspective are rarely new, but often seen as repackaging or reframing of existing solutions (Elken, 2015).

These different perspectives on change provide a helpful backdrop to the analysis of the changing role and nature of VET in the following chapters. In Chapter 3 we examine how VET has changed from three different but complementary perspectives before looking, in Chapter 4, at how change has manifested itself within countries and the patterns that can be discerned.

CHAPTER 3.

The changing world of VET

3.1. Introduction: VET in 1995 and previous research on long-term trends

Before looking at developments since 1995, an eye should be cast backwards to the years before so that the most recent changes can be seen in context. Examining the period from the early 1980s to the mid-1990s, Green, Leney and Wolf (1999) used data collected as part of an EC-funded project and identified a number of important trends relevant to current interests; however, at that point they were concerned with the then 15 EU Member States.

Green and colleagues (1999) found that European systems were responding to powerful general trends but they remained highly distinctive, with no obvious movement towards a single common pattern: 'while they may have been moving in the same directions, it is not clear that countries are significantly more like each other than they were a decade or a generation ago' (ibid. p. 200). They also found great stability in respect of apprenticeships: those countries that had had 'high participation, high-status, work-based routes' 10 to 20 years earlier had retained them, while those in which apprenticeship had traditionally been 'marginal or low status' had been unable to change this, 'even with concerted government effort' (ibid. p. 200).

During the same period, it had become the exception rather than the rule for people to leave the education and training system at the end of compulsory schooling, with most remaining in full-time schooling. At the same time, students who would have left school for the labour market in earlier years were entering vocational post-compulsory options by the mid-1990s, while students who would have previously followed these were entering academic ones.

Significantly, Green and colleagues (1999) found that the role played by vocational upper secondary programmes was changing, functioning less as direct preparation for the labour market but increasingly as a pathway into further education and training, with a corresponding change towards more general content as well as a reduction in the number of distinct vocational

options. They also note the rising interest in the idea of 'competence' ([17]) although, at that point, it had only been in the UK that this had been translated into a complete system of competence-based assessment.

They also found increasing diversification of pathways in almost every Member State studied. This mainly took the form of creating formal pathways between vocational and general programmes, primarily as a means of enabling vocational students to proceed to higher levels. In mainly school-based systems, governments had redefined vocational certificates as acceptable to tertiary studies. In contrast, in systems with strong apprenticeships, pathways were intended to maintain the popularity and quality of recruitment into apprenticeships, not just to meet demand for progression routes.

In terms of governance, they found a trend towards decentralisation: the dispersal of powers to social partners along with regional and local devolution of some responsibilities was combined with greater central involvement and control over assessments.

At higher levels of education and training, considerable expansion and change were identified; these had brought an increasingly complex hierarchy of status and labour market rewards associated with different types of tertiary qualification. In binary systems, greater status tended to be accorded to the academic sector, although to varying degrees.

In continuing VET, it was found that 'a striking characteristic of the past 10 to 20 years, is that vocational training is becoming an increasingly important component of adult participation, and general education correspondingly less prominent' (ibid. pp. 222-223). This was not least as a result of government economic policy, in contrast to earlier eras when the key drivers of the development of adult education had been mainly social and cultural goals. By the mid-1990s, a greater role was being played by employers. There had been marked increases in the numbers of adults in CVET by the mid-1990s, but the development of qualifications was lagging behind; 'while Member States may be in accordance on the importance of access to and recognition of qualifications, major implementation issues remain' (ibid. p. 232). They also note the diversity of providers.

As we shall see in the following sections, many of the trends described above recur. This suggests that many – if not all - trends began before 1995 but may have been limited in scope and to certain countries (as in

([17]) Note the different ways in which 'competence' is understood in different countries (Brockmann et al., 2011).

the case of competence-based approaches). Since 1995 they appear to have increased in prevalence, pace and intensity. In Chapter 4 we take up many of these issues and add various new trends. We will do so by following the three-perspective model of VET developed in Cedefop (2017c) (see also introduction). Although these perspectives partly overlap and are not independent of each other, they allow the various features of VET to be structured to maintain an overview.

3.2. Common trends from an epistemological and pedagogical-didactical perspective

VET in the early 1990s tended to be identified in terms of job-specific, on-the-job learning, separated from general education. Competence-based approaches were only just being developed in most countries and, while there was recognition that workplace-based learning was advantageous, it remained underdeveloped.

Since then VET has been subject to a number of developments. In initial school-based VET, there has been a crossing of the boundary between schools and workplaces, as work-based elements have been introduced into school-based VET, with more practice-oriented curricula emerging. Many countries have strengthened or developed apprenticeships. For example, in Norway a comprehensive school reform of 1994 enabled integration of the vocational track into the general upper secondary education system and the forging of tighter links between the apprenticeship system and upper secondary education during the 1990s. This 'drift' of VET and general education toward one another has also been observed at higher levels (see below). However, it has not been a strong feature in CVET: only in a few European countries does the conception of CVET include liberal adult education and lifelong learning alongside job-related training.

There has also been a pluralistic trend to increase the forms of VET (unified, dual, trial), offering more flexibility in the time and place of learning; workplace-based learning has emerged as the preferred means of delivering VET in many countries. Even in a country like the Netherlands where there is already close collaboration between VET schools and labour market stakeholders, recent reports have stressed the importance of strengthening learning at the workplace and particularly in the work-based training pathway as a means of bringing education providers and companies closer together.

Increasing emphasis has been given to VET qualifications that are based on learning outcomes, signalling a move to strengthen the link to the labour market and to make VET qualifications less 'input driven'. This shift has often been related to the way qualifications frameworks are designed, with competence-based approaches becoming widely accepted as part of VET systems. There has also been a broadening of course content, and more generic or transversal skills have been included in VET programmes. In many countries the number of occupational profiles or qualifications has decreased, transversal or generic skills have been increasingly emphasised in curricula, and/or programmes that lead to both general/academic and vocational qualifications have been introduced. In Finland, for instance, there has been a long-term trend towards a competence-based system based on learning-outcomes which has already seen the introduction qualifications that could be taken by adults and young people alike. This process culminated in the passing of legislation in 2017 (Cedefop, 2018e) which will offer every student the opportunity to design an individual path for completing an entire VET qualification or a supplementary skill set; the aim is to stimulate young people to apply for and complete a VET qualification. The new system will be based on broad-based competences so the number of qualifications, which had already been falling, will be further reduced from around 360 to 160. Learners will be able to acquire qualifications flexibly, attending programmes in education institutions, workplaces and in digital learning environments. In the Netherlands, the Vocational Education Act of 1996 signalled a switch from learning a subject to developing a competence related to a profession; by 1999, greater emphasis was being placed on learning 'core competences' which led, in 2002, to the introduction of a competence-based qualification system. In 2015 there was a reduction in the number of qualifications available.

Modularisation of programmes at upper secondary level and for adults has also been a feature, opening up the possibility of increasing the flexibility of VET and enabling more individualised pathways, for example in terms of the sequence in which modules are taken. In Lithuania, old VET programmes, based on VET standards designed for a specific qualification, are gradually being replaced with modular programmes to promote flexibility of VET options and contribute to individual learner needs (Cedefop, 2014a, 2018f). Opportunities to choose, accumulate and combine separate modules will improve accessibility and attractiveness of learning both for young persons and adults. The possibility to take parts of qualifications – rather than full

qualifications – has also been developed, sometimes linked to the need to assist migrants to access the labour market, as in Sweden (Cedefop, 2018h). In 2008 it was unclear to what extent modularisation had been used in such ways (McCoshan et al., 2008). Learning outcomes and NQFs offer this possibility in theory but require providers to create such paths, and it is unclear to what extent they actually do so. At the same time, VNIL/RPL enables people to have de facto individual pathways into VET, but the extent to which their formal programmes are 'individualised' is debatable.

At higher levels there has been both academic and vocational 'drift' in curricula and pedagogics, although use of the concept of 'drift' is open to much interpretation and the trends are not universal. Nonetheless, it has been observed that profiles of vocationally oriented programmes and qualifications at higher levels often include both academic and vocational components and finding the best balance between them seems a continuous process for competent authorities. Transversal learning outcomes are becoming increasingly important but higher VET programmes and qualifications tend to maintain their traditional focus on applied knowledge. On-the-job learning has increasingly been integrated into vocationally oriented education and training at higher levels, as with internships or as new formats of dual or apprenticeship training. However, there are also indications that 'academic' principles or research competences have been more strongly emphasised in professional higher education in some countries. While professional experience is increasingly important for teachers at higher levels, this does not necessarily mean that they do not also need to have a higher academic qualification. Academic requirements have, in some cases, been emphasised even more in recent years.

Table 2 provides a summative comparison of the main characteristics of VET content and pedagogics in 1995 and 2015 to highlight the key changes.

Table 2. **Changing VET content and pedagogics**

1995	2015
VET and general education conceptually distinct	Crossing of boundaries (school-workplace; general-vocational)
Work-based learning underdeveloped outside apprenticeship systems	Increased work-based learning in all VET forms
Much school-based IVET 'input driven' and weakly linked to labour market	Reorientation to learning outcomes and competences
Programmes and qualifications narrowly defined and specific	More flexibility in time and place of learning; increased acceptance of prior learning

Source: Cedefop.

3.3. Common trends from an education system perspective

Prior to the mid-1990s, outside those countries with established apprenticeship/dual systems (such as Denmark, Germany or Austria), VET was emerging from a situation of often fragmented provision due to training having been largely led by industry. Standard setting was often in the hands of specific industries. VET attractiveness was often relatively low, with few VET graduates progressing into higher education.

In the past 20 years, however, significant developments have taken place and the position of VET in the education and training landscape has generally improved. Fragmentation has been replaced by more coherent VET systems, with qualifications accredited under NQFs. Within these more coherent frameworks, there has been diversification amongst VET providers and programmes (e.g. liberal education institutions), opening up new opportunities for potential VET students. This diversification has been notable for adults as well as young people. Apprenticeships have also been renewed, enhanced and expanded. Opportunities to move between VET and general programmes (and vice versa) have been opened up. 'Dead-end' programmes were largely removed within the first decade or so after 1995 although challenges for participants in moving between tracks remained (McCoshan et al., 2008).

Contrary to what has often been believed, patterns of enrolment in vocational and general education in Europe have been largely stable.

Demographic changes have led to a drop in the total number of young people attending upper secondary education and training but, in most countries, VET has been able to retain its position relative to general education in terms of enrolments at this level. This is not true in all countries, of course: in some major 'VET countries' there has been a decline ([18]).

VET programmes have tended to change through a reduction in the number of qualification profiles/broadening profiles which could be regarded either as expansion (making programmes more general) or strengthening/reshaping the profile of programmes (caused by hybridisation of occupations). In Norway the knowledge promotion reform of 2006 means that students are now offered vocational training in fewer trades, so many students now have broader and less trade-specific training during the first two years of their training in vocational school (the final two years being based with the employer). At the same time, they also now undertake a subject named 'vocational specialisation' to introduce them to authentic work methods and tasks within relevant trades and occupations at an early stage of their training, partly to counteract the presumed negative effects of broad vocational programmes.

The control of standard setting has become more centralised – related to the development of NQFs – with some autonomy granted to vocational schools/regional authorities. A law of 2014 in France gives regions authority over managing training policies, implementation of VET including apprenticeships for young people and adults, and supporting small and medium size enterprises in their territory. In most countries programmes have tended to develop in a piecemeal fashion: programmes have not been deleted but instead have had their content adjusted to reflect external requirements. Where changes have occurred, it indicates that the distinction between VET and general education, and between IVET and CVET, has become less clear-cut during the period.

Another important development has been the expansion of VET out of its traditional 'heartland' in the upper secondary level of education. There are several aspects to this. First, VET and apprenticeships have been expanded to lower levels. New provision within the compulsory phase has been developed to prepare students better for taking vocational options at upper secondary

([18]) It is these falls (such as in Germany, France, Poland and the UK) which account for the decline in European figures on VET and which have led to the view that 'VET in Europe' is declining overall. Compare also Chapter 4 and Cedefop (2018b).

level (McCoshan et al., 2008). Measures include reform of vocational qualifications to extend vocational pathways into the lower secondary level, and improvements to existing vocational courses to prepare better students for upper secondary courses. Pre-VET programmes have often been designed to assist students from socially disadvantaged backgrounds.

The second aspect of VET's expansion has been the development of VET at higher levels. Many European countries now have a separate strand of higher education or have added new vocationally or professionally oriented higher-level degree programmes (professional HE) to their offers, in most cases creating a 'binary system'. Many countries also offer higher level vocationally oriented education and training outside higher education (higher VET), which includes a variety of different types of programme and qualification. Notwithstanding such expansion, vocationally oriented education and training qualifications at higher levels are often accorded lower value than 'academic' higher education qualifications at the same levels, although in some countries they have an equal and sometimes even higher status because of their value for the labour market. Countries have opened up higher education to people with vocational qualifications and/or with work experience, but actual use of this non-traditional access route, as well as in professional HE, is still relatively low in many cases. Higher VET qualifications are generally based on IVET qualifications and work experience, and there is no evidence that this has changed significantly over time. 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, they primarily prepare for access to the labour market or provide access to further learning and the labour market.

The third aspect of VET's expansion has been the development of CVET, although the pattern has been highly varied country to country. At European level, the change in CVET provision seems to have been minor, though in a positive direction; greater participation in the average number of hours spent in CVET courses and a slightly higher incidence of non-formal education based in companies. Diversification has been a key feature. The range of different types of provider has increased (notably in Estonia, Croatia, Luxembourg, the Netherlands, Poland, Portugal and Sweden), although employers continue to be the most common providers. There has also been

diversification so that CVET is no longer focused on occupation-specific and job-related skills but, in many countries, also includes training for key competences. Flexible learning opportunities, tailored specifically for adult learners' needs (distance education, evening courses, part-time programmes, modularised studies), are also developing in many countries, and seem to be encouraging increased participation. In some countries the CVET target group is becoming more diversified. Many of these developments signal that a clear distinction between IVET and CVET is no longer relevant to wider social and economic needs, and VET tends no longer to be narrowly defined as IVET. There is a trend for IVET providers to offer CVET programmes and for IVET programmes to be opened up to adults. In some countries the number of adult learners in IVET has increased. At the same time, such trends in CVET appear to vary from sector to sector, as well as between countries (Cedefop, 2019c).

How have these developments affected parity of esteem? Countries with traditionally dominant general education have tried to raise the relatively low esteem of VET, while those with traditionally well-established dual VET conceptions (such as Denmark and Germany) have tried to stop its decline. These attempts have not been generally successful, showing that changing perceptions of education and training is likely a difficult and long-term process. A notable exception may be Finland with a series of reforms since the 1990s which made the vocational track eligible to access polytechnics and universities, making VET equal to general upper secondary education as a pathway to higher education. VET today is considered equal to general education. Similarly, in France, the vocational baccalaureate has increased the attractiveness of upper secondary VET because the upper secondary vocational pathway can lead to certification at level EQF4, or higher: the creation of the vocational baccalaureate in 1985 was followed by the possibility to take higher education exams through apprenticeships in the 1990s and, most recently, by the decision in 2009 to set the duration of the vocational baccalaureate to three years rather than four, in order to make it the same as the technological and general baccalaureates.

Table 3 summarises the main characteristics of VET systems in 1995 and 2015 to highlight the key changes across the intervening period.

Table 3. **Changing VET systems and institutions**

1995	2015
• Provision often fragmented, strong links to industries and sectors, weaker to overall education and training systems • Dead-end programmes, restricted to medium levels with little progression to higher levels • VET narrowly defined as IVET • VET addressing a narrowly defined target group (16-20 year-olds)	• More coherent VET systems integrated within the overall education and training systems • Increased permeability and fewer dead-ends • More centralised standards setting in State-funded provision • Fewer qualifications and broadened profiles • Diversification of target groups, including adults • Higher level VET and CVET more developed

Source: Cedefop.

3.4. Common trends from a socioeconomic and labour market perspective

Looking at VET in terms of its wider functions, it is clear that there have been increasing efforts to enhance its responsiveness to labour market needs to meet structural shifts related to globalisation, technological change (digitalisation) and the need to maintain the competitiveness of European industries. The steep cyclical rises in unemployment that followed the 2008 economic crisis have also had an impact. The development of apprenticeships and greater use of work-based learning in school-based VET are both attempts to tie VET closer to what actually happens within workplaces. Similarly, employers or their representatives have been given more say over the content of VET and particularly the development of work-based learning in many countries. Such trends are apparent not just in initial VET but also in higher education, where employer involvement in governance structures has tended to rise. At higher levels, both academic and vocational drift have been anchored in economic imperatives. In the case of 'vocational drift', there has been an even stronger policy focus on the employability of graduates and professional relevance of programmes/qualifications than hitherto, while the justification of 'academic drift' places greater emphasis on the need to meet increased knowledge and skills demands and on attracting prospective students. Recent years have also seen the development of

methods of skills anticipation ([19]) and of feedback mechanisms between VET and industry (Cedefop, 2013).

VET has also responded to the challenges posed by demography and technology. During the past 20 years the steady ageing of Europe's population has become a significant policy issue, prompting an increase in the retirement age in some countries; people are also remaining fitter and able to work for much longer than used to be the case. Such developments are intersecting with changes in the nature of employment, due to the rise of new technologies, which mean that people are much more likely to change occupations and careers several times during their lifetime than previously. Changes are also creating new forms of employment based around web platforms, as in the case of *Uber* in personal transportation (Acemoglu and Autor, 2011).

These challenges create uncertainty for VET systems, and systems are managing such uncertainty in a number of ways. VET systems are starting to become more flexible, with people increasingly able to pass in and out of learning throughout their lifetimes, but progress has been variable between countries and generally slow. Learning outcomes and mechanisms to validate non-formal and informal learning have been introduced, decoupling what skills are acquired from how they are acquired. VET programme content is broadening and there is an increasing focus on transversal skills. We might also expect to see much stronger CVET systems emerging. However, notwithstanding increased diversification, a trend in this direction has been much harder to discern, with much variation between countries.

Another consequence of new digital technologies appears to be a loss of mid-skilled occupations, the so-called hollowing-out or polarisation of the labour market (Cedefop, 2015). Automation has already replaced many routine jobs in manufacturing but robotics and cyber systems are now replacing jobs with a cognitive element that were previously untouched: examples are paralegal work, accounting and back-office transaction processing. This challenges traditional VET provision and is acting as a spur for the trend for VET to spread to higher levels. It also raises questions about VET in relation to the service sector. Certain service sector occupations do not have the well-defined occupational background typically found in manufacturing, which makes it difficult to define the occupations which learners/apprentices

([19]) See Cedefop project *Skills anticipation methods and practices.* http://www.cedefop.europa.eu/en/events-and-projects/events/skills-anticipation-methods-and-practices

are being prepared for. As a result, trade certificates for the service industries sometimes have low labour market currency and employers have come to prefer training and recruitment strategies disconnected from the formal VET system. In England, where the apprenticeship system has permeated the service sector, there is continuing debate about whether an EQF level 2 qualification in, for instance, retailing is really equivalent to that of, say, a level 2 qualification in electrical engineering. VET responses include involving employers more closely in qualification/ programme design and broadening qualifications/ programmes.

An important demographic trend in many countries, especially in central and eastern Europe, has been a decline in the youth cohort as a result of emigration and/or falling birth rates, although this has been offset to some degree and in some countries by immigration from third countries and from within Europe. Consequences of this include increased competition for students between VET institutions and also between general education and VET. In Italy there has been competition for students between vocational and technical upper secondary education (five years) on the one side and regional IVET courses (three years) on the other side since 2000, when the number of 14 to 15 year-olds reached a critically low level; the number of students enrolled in three-year certificate regional VET courses has increased in recent years while enrolments in the national vocational education system have stagnated. In turn, this can mean less income/revenue for VET schools. Some VET schools have cut down on the variety of courses on offer, closed or merged with others. Elsewhere, falling student numbers have also led VET schools to focus on CVET and to broaden their offer to adult learners; this is not an easy solution since such providers are likely to face severe competition from private providers who already operate in this field. VET centres in the Netherlands are offering more flexible delivery and modular courses to make VET more attractive to adult learners; there are also policy discussions about establishing incentives for adults to enter VET. In Estonia, the proportion of students aged 25+ has increased from 14% in 2007 to 34%, offsetting the fall in the number of young people: formal VET institutions offer CVET courses at no or low cost to unemployed and inactive adults partly thanks to financial support from the European Union.

Such trends run counter to other developments, such as the situation that has also been observed where the development of VET in some countries and across sectors has made it more challenging for VET providers to find sufficient company training places /internships for the number of potential

apprentices/trainees. This illustrates the complexity of the pressures on VET and of VET's response.

It is also evident that VET has been increasingly seen in policy as a means of achieving a variety of goals beyond ensuring a supply of skills for the labour market. It has already been noted that VET developments have occurred with the aim to combat youth unemployment. VET has also become a tool to achieve broader social equity goals, such as tackling early school leaving (by providing a form of education that might be more attractive to early school leavers than general education) (European Commission and Ecorys, 2013). At the same time, CVET on the whole has yet to reach its full potential as a tool in this respect; while CVET is increasingly understood as an integral part of lifelong learning, in very few European countries is there a close link between CVET and lifelong learning policy and strategies.

Funding has also emerged as a common trend. The constraints on public finances following the financial crisis have meant that the demands placed on VET have tended to go up as the resources available to deal with them have gone down: generally, VET is expected to 'do more with less'. In Finland, 2007 saw the passing of legislation specifying that the organisation of vocational education requires a population of 50 000 inhabitants; since most Finnish municipalities have fewer than this number it led municipalities to form consortia for VET delivery and to close VET units to save costs. Countries have also been debating the question of who should pay. This is especially germane to VET outside the compulsory phase where it is the State that funds provision. Apprenticeships and CVET have both raised questions about the appropriate funding contributions to be expected from employers and individuals, since they both stand to benefit from provision ([20]).

It is also evident that different IVET systems partly function as a consequence of how national employment systems are organised. This is a highly complex area, with an important distinction between whether what is termed 'organisational' space or 'occupational' space is dominant in a country. This affects the role and timing of initial and continuing vocational education.

Organisational space is thought to fit well with simple and Tayloristic forms of work organisation, yet not so well with lean models of production. Initial vocational education and training (IVET) at secondary level is typically marginalised, often more remedial in nature and poorly rewarded in the

([20]) See Cedefop's project on financing training: https://www.cedefop.europa.eu/en/events-and-projects/projects/financing-training

workplace. Many workers acquire vocational skills on the job. Examples of countries with work systems dominated by organisational space include France and the United Kingdom. Where occupational space dominates, discretionary and lean modes of work organisation are likely, while simple or Tayloristic modes of work organisation seem less appropriate. Firms organise work processes by exploiting broad and standardised vocational qualifications, which allow graduates to perform a multitude of job roles. IVET at upper secondary level is a key part of the education system, enjoying high prestige, and it may allow for smooth entry into the labour market and grant membership to an occupational group. Beyond traditional pathways for moving up the blue-collar career ladder (for example the craft master qualification), various forms of continuous higher VET at post-secondary and tertiary level are growing in importance. Country examples where occupational space dominates include Denmark, Germany, the Netherlands and Austria. An important question is whether economic and technical developments are leading to changes in work organisation which might affect VET systems. New forms of work organisation, such as the Hollywood model and the gig economy (Hogarth and Papandoniou, 2017), are, however, only now emerging and have not yet had a major structural impact on VET systems.

Table 4 provides a summary of the main features of VET's socioeconomic context in 1995 and 2015 to highlight the key ways in which it has changed:

Table 4. **Changing socioeconomic context**

1995	2015
• Limited goals; preparing for job entry and securing skilled labour • Industry- and sector-based standard setting and anticipation of needs • Jobs requiring medium level skills dominate in the labour market • Digitalisation one of several factors influencing VET	• Broader goals – social as well as economic; excellence as well as integration • Increasing role of skills intelligence systems • Jobs requiring middle-levels skills starting to decline; future developments contested • Digitalisation a key-driving force

Source: Cedefop.

3.5. Reflections

This section has described the common trends that have been affecting VET in Europe in the past 20 years. Comparing this period with the 10 to 20 years before 1995 (whose main developments were set out at the start of the section), it is evident that the key trends were already underway. Since 1995 they appear to have increased in intensity and/or speed and/or country coverage, perhaps given increased impetus by other factors. Prior to that date, trends which have since become major driving forces were in their infancy. An example is digitalisation. Before 1995 its effects on VET were comparatively weak and indirect, being limited to certain aspects of manufacturing production; since then, its effects have run throughout economies and societies, becoming part of everyday life. There has also been and interaction with other factors, such as individualisation and democratisation, to drive new demands in VET, such as for flexibility, as well as offering new opportunities for how and where we learn. In VET, not only has the pace of change increased but new forms of VET have emerged in response to social and economic demands.

VET has also become a more mainstream policy instrument to ensure the supply of skills in European economies, being expanded, enhanced and made more coherent in order to achieve this goal, and also being seen as a means of achieving wider social goals. At the same time, there has been growing recognition of the value of 'de-institutionalising' VET, removing the barriers between different forms of education and training, and enabling diversification into new programmes, forms of delivery and providers.

While there are several important common trends, they have not proceeded at the same pace or to the same extent, and different countries have different mixes of trends. The most common trends appear to be those that have had the force of common EU objectives behind them and in countries with the ability to enact legislation; the latter includes the spread of learning-outcome-based approaches and the development of national qualifications frameworks, and also (spreading more slowly) tools to validate (prior) non-formal and informal learning. Even in these cases, there is substantial variation between countries in the form of the approaches and frameworks adopted.

Other trends such as the inclusion of transversal skills in qualifications and programmes, diversification of provision, and the expansion of VET beyond its traditional heartland, especially to high levels, vary substantially from

place to place. In some cases this is because national governments have not regarded them as policy priorities, but it also reflects the fact that, in an area such as higher education, the tools available to national governments to bring about change are limited. Perhaps the area of slowest progress is in CVET. Although the need for expanded and enhanced provision in this area seems to have become widely recognised during the past two decades (if not before), action appears to have been slow given the growing need to upskill and reskill workers in light of technological advances and demographic trends.

As this section has also demonstrated, the common trends identified sit in a wider context of developments, as illustrated in Figure 3. Some are structural, such as the ubiquitous and increasingly rapid spread of digital technologies, while others, such as the 2007-08 financial crisis and subsequent surge in unemployment, are more cyclical.

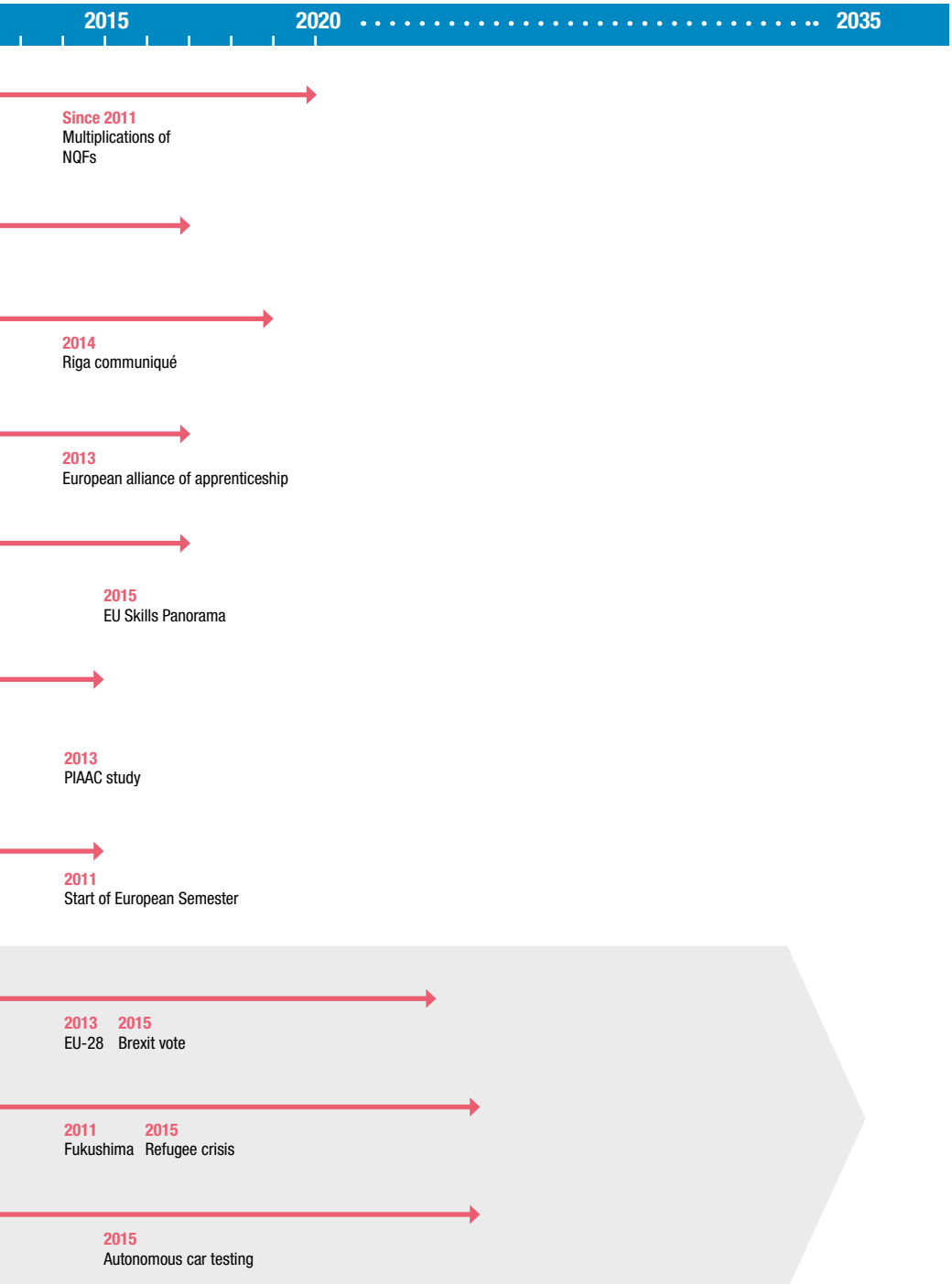
Wider developments have impinged upon VET to different degrees and with different effects at different times. There is no doubt that the financial crisis and unemployment have had a major effect on the direction of VET policy. As example, focusing attention on youth unemployment and providing a strong stimulus to the (re)development of apprenticeships; it also led to constrained public resources, which has meant that fewer have been available to support the expansion of provision for adults. This provides a good illustration of the way in which short-term cyclical factors can interact with longer term structural factors: lack of public resources has come at a time of declining youth cohorts, which has led to the consolidation of provision in some countries to save costs. The breaking down of differences between IVET and CVET, while a deliberate policy goal aimed at lifelong learning, can also be seen as an indirect effect of falling youth student numbers and constrained budgets, as providers seek new 'customers' (adults).

Identification of the broader developments affecting VET also enables some observations to be made regarding the relationship between exogenous needs, the formulation of policy and policy outcomes:

(a) it is evident that not all exogenous developments have led (yet) to a quick or deep response in VET: for example, despite the rise of digital technologies, they have still to penetrate deeply into VET pedagogy as e-learning. Similarly, although the need to upskill and reskill adults through better CVET provision is widely recognised, the sector is hardly developed in some countries and other priorities, such as apprenticeships for young people, have dominated the policy realm;

Figure 3. **Major developments in VET in Europe from the 1990s onwards and their historical context**

Source: Cedefop.


2015
2020
2035
Since 2011
Multiplications of NQFs
2014
Riga communiqué
2013
European alliance of apprenticeship
2015
EU Skills Panorama
2013
PIAAC study
2011
Start of European Semester
2013
EU-28
2015
Brexit vote
2011
Fukushima
2015
Refugee crisis
2015
Autonomous car testing

(b) it is important to ask questions about the potential limits of policies in terms of achieving their intended outcomes; it is also important not to overestimate the actual impact of all VET developments so far. For instance, while we can observe increased permeability and opportunities for progression in VET, the question is: to what extent are these opportunities actually taken up? VET is still predominantly conceived as IVET and, although data are lacking, IVET is likely still to be used mainly by young people for labour market entry. VET systems have become more coherent in the past two decades but much development is still in progress and, in many countries, VET systems are by no means established and stable, as evidenced by continuing reforms. Frameworks are in place, but their benefits now have to be delivered. Further, despite the large number of trends identified, broad conceptions of VET within EU Member States and also the esteem of VET compared to general education remain mostly unchanged. In a sense these are broad structural components of VET systems related not only to the 'surface' technicalities of policy and provision but also to 'underlying' social values. On the evidence presented here, and also as Green and colleagues (1999) found for the decades before 1995, they are clearly difficult to change.

In short, there is still much distance to be travelled as we journey into the future in order to realise the potential of the developments set in train in many countries.

CHAPTER 4.

The changing nature and role of VET: country patterns and variations

Chapter 3 described major trends in vocational education and training across countries. This chapter focuses on similarities and differences between countries and tries to identify possible country patterns. How relevant are the trends described in Chapter 3 for specific countries or groups of countries? Which countries show similar trajectories? Are any countries diverting from the overall trends? Is there overall convergence?

The chapter begins with some general remarks on change, followed by a model to describe country trajectories in a comparative way, including a simplified graphical representation. The main part of this chapter discusses changes at country level by groups of countries. Finally, we summarise the changes and discuss the issues of convergence and divergence.

4.1. Introduction to country analysis

Against the background of large differences between countries, as demonstrated in the introduction (Section 1.3), is it possible to see any common patterns of change in VET in Europe that go beyond randomness on the one hand and universal change on the other? To answer this question, we need to consider the different 'starting positions' of countries, to determine how we define change in VET and, if possible, explain changes. Each step is tricky:

(a) taking a reference year (1995) is necessary, but not always helpful, because major changes may have happened or been initiated shortly before; this was shown in Chapter 3 where it was seen that all the major trends of 1995-2015 began in some form – though perhaps only in a few countries – before 1995. This is certainly the case for all eastern Europe countries where the political and economic systems were turned on

their heads after 1991; Croatia was fighting a war until 1995. Further, in comparing data from 1995 and 2015, dynamic change in a few years may be mistaken for steady change over the two decades. For the purpose of comparability, we keep a focus on the period from 1995 to 2015 and discuss the possible shortcomings and limitations of this at the level of country analysis (Section 4.4);

(b) the project has studied changes in VET on numerous dimensions: too many to be easily displayed, and too different to be simply aggregated. Nevertheless, aiming for the big picture requires synthesis. We do this by suggesting a focus on changes in VET with regard to its 'role' (in terms of its position in the overall education system and to general or academic education) and with regards to its 'nature' (in terms of major characteristics). For this purpose, we have developed a model which allows us to relate most, though not all, of the observed changes to two major dimensions (Section 4.2);

(c) the project has developed a model to analyse and describe changes in VET following three overlapping perspectives (Cedefop, 2017c). It has also suggested a model that illustrates the impact of external factors (Cedefop, 2018d). A model to describe trajectories of change is also presented. However, the project has not yet presented a model which explains change.

There are several reasons why we do not follow a particular theory of change, already discussed in Chapter 2, but the most important is a practical problem. Our analysis for the individual countries does not go deep enough at the level of partisan politics and power resources to apply the appropriate theoretical concepts. It would be very challenging and time-consuming to do a detailed analysis for 30 countries from the perspective of historical institutionalism which we deem the most fruitful approach. Instead, therefore, we must content ourselves in the country analysis with cursory explanations of change, but this should not downplay the conceptual approach to illustrate the 'big changes' developed in Chapter 5.

4.2. A model for trajectories of change in VET

4.2.1. **Introducing a two-dimensional model of change in VET**

In Cedefop (2017b) we assumed various trends in VET which we analysed more in-depth in the subsequent research activities. We structured these trends according to our three perspectives model and classified them as 'strengthening' (or intensification) on the one hand and 'diversification' (or expansion) on the other. In Cedefop (2019a) we took up the issue of 'vocational and academic' drift at higher levels. In the following, we use these distinctions and bring them together in a two-dimensional model which should allow us to obtain the 'broad picture' of the changing 'role and nature' of VET in Europe and describe changes in national VET systems in a comparative perspective.

Simplified, the 'role of VET' can be understood as a function in a social system (such as preparing for further education or for jobs, social stratification) or in terms of its position (how is it positioned vis-à-vis general or higher education). We focus here on the latter. For this purpose, it is helpful to retrieve some old dichotomies. While there is a blurring of boundaries between VET and general education and interlinking of professional and academic knowledge (or practical and theoretical), these categories still feature in many classifications and data. At least at upper secondary education level we have a fairly good idea of what is considered vocational education on the one hand and liberal or general education on the other, with a few but increasing exceptions (see also Cedefop, 2018b). But at lower and higher levels classifications seem to be more difficult. In many countries a line can be drawn between professional higher education and academic higher education at the level of programmes or institutions (Cedefop, 2019a), but this is more difficult than at secondary level and not backed up by international data. In countries without a binary structure of higher education it seems harder to make a reasonable distinction between vocational and academic programmes. Also, at lower levels pre-vocational education is often impossible to distinguish from general education; this is one reason why in the implementation of ISCED 2011 many pre-vocational programmes have been reclassified as general.

Nevertheless, there is an understanding of what it means that an education system or part of it is becoming more vocational or more general/academic, and previous reports of this project provide plenty of examples (Cedefop, 2018b, 2019a). For instance, a relative increase in the enrolment in secondary-

level programmes classified as vocational would be an indication for vocational drift. Equally, extending handicraft lessons, lessons for typewriting or computer skills at the expense of lessons for arts, literature or Latin would be seen as vocational drift of the syllabus. This allows estimating the degree to which an education system is more vocational or more academic (though it may be difficult in practice) and using that as a first key dimension for our model. This distinction is partly described also as 'education versus training' or *'Bildung versus Beruf'* (see also Cedefop, 2017c).

The second key dimension, the 'nature of VET', or what we can consider as VET's particular characteristics, is even more challenging. There has been a renaissance in apprenticeships in Europe in the past few years and, even though this is not (yet) visible in terms of numbers, it could also be considered as a sort of vocational drift or at least 'strengthening' of VET. At the same time there has been substantial diversification of VET in terms of target groups or skill levels addressed, type of providers, learning approaches, funding and governance, and in many other aspects in recent decades, so that any common picture or possible European core of VET (as in the form of apprenticeships) seems to have unravelled. VET has always been diversified and has very different origins: the apprenticeship training of medieval guilds, the early engineering schools in France or the factory schools in the early era of the industrial revolution could not be more different in terms of skills learned, didactics or social status. Many aspects of these early forms of vocational education and training live on in today's VET systems and these partly explain the different VET conceptions observed (Cedefop, 2017d). But, despite the fact that VET can take many forms, a shared perception held in Europe seems to have a sort of inner benchmark which indicates if something, such as a programme or didactical approach, is more vocational than another. For instance, we tend to consider the apprenticeship training for mechatronics more vocational than a school-based VET programme in the same field; the training of a pilot more than that the education of a mathematician; training for a specific occupation more than training to increase employability in general. In the same vein, we consider the German VET system as a best-practice example for vocational education but less so the Czech VET system, despite the fact that the share of VET students in Czechia is substantially higher than in Germany. Why is that so?

Table 5. **Pluralistic versus distinctive views on VET**

	Distinctive	Pluralistic
What is VET's position in the wider education and training system?	VET organised around professions, clearly distinguished from other forms of education by its close relationship to enterprises and sectors	While having close links to the labour market, VET is moving closer to other parts of education
Who is it for?	Focus is on professional entry, associated with medium to high-skilled professions	Increasing diversity of target groups; covering lower levels as well as medium and higher levels
What type of pathways?	Work-based learning and apprenticeships have high status and stand out as the 'gold standard'	Numerous VET pathways operate side by side; school- and work-based pathways have the same status and are mixed pragmatically
What type of provision?	Employer-led provisions	Variety of providers
How is VET understood?	VET is understood as a clearly defined subsector consisting of clearly defined institutions.	VET is understood as a feature of education, not a particular set of institutions. VET is relevant to all levels and types of education, training and learning
Keywords	A modernised version of 'vocational training'	'vocationally oriented learning'

Source: Cedefop.

In such considerations there seem to be invisible principles of VET which constitute a certain hegemony and which are difficult to grasp comprehensively: *Beruf* as organising principle, duality or work-based learning as didactic principle, and, workmanship as a key quality principle are among them. It is almost as if there is an inner benchmark for the 'intensity' or 'distinctiveness' of VET. Analogously, is the idea of distinctive academic education strongly rooted in the tradition of liberal arts and scholarship (scholarly method). While those in a vocational tradition would praise workmanship (compare e.g. Pye, 1968; Sennett, 2008; Veblen, 1898), the concept of erudition perhaps best encompasses ideals of academic communities. These different values are still traceable in today's debate on educational and curricular reform. However, there is also an increasing coexistence and hybridisation of these distinctive views resulting in a pluralistic conception of education. Based on this (admittedly vague) idea we can distinguish a distinctive view of vocational education and training which builds on some core principles, and

a pluralistic view of VET which acknowledges diverse forms. Table 5 roughly characterises these opposing views according its position in the education system, target groups, provision and conception.

Figure 4 brings the two dimensions together in a coordinate system to be used both for the analysis of change in VET at country level (Section 4.3) and for the development of scenarios (Chapter 6). Hence, we describe any increase of the significance of VET (in relation to general/academic education at the same skill level) as vocational drift, and any decrease as academic drift. Following earlier assumptions (Cedefop, 2017b), we describe trends towards more distinctive VET as 'strengthening' of VET principles and the trends towards pluralistic VET as 'diversification' of VET principles and approaches.

4.2.2. **The model and indicators for describing trajectories**

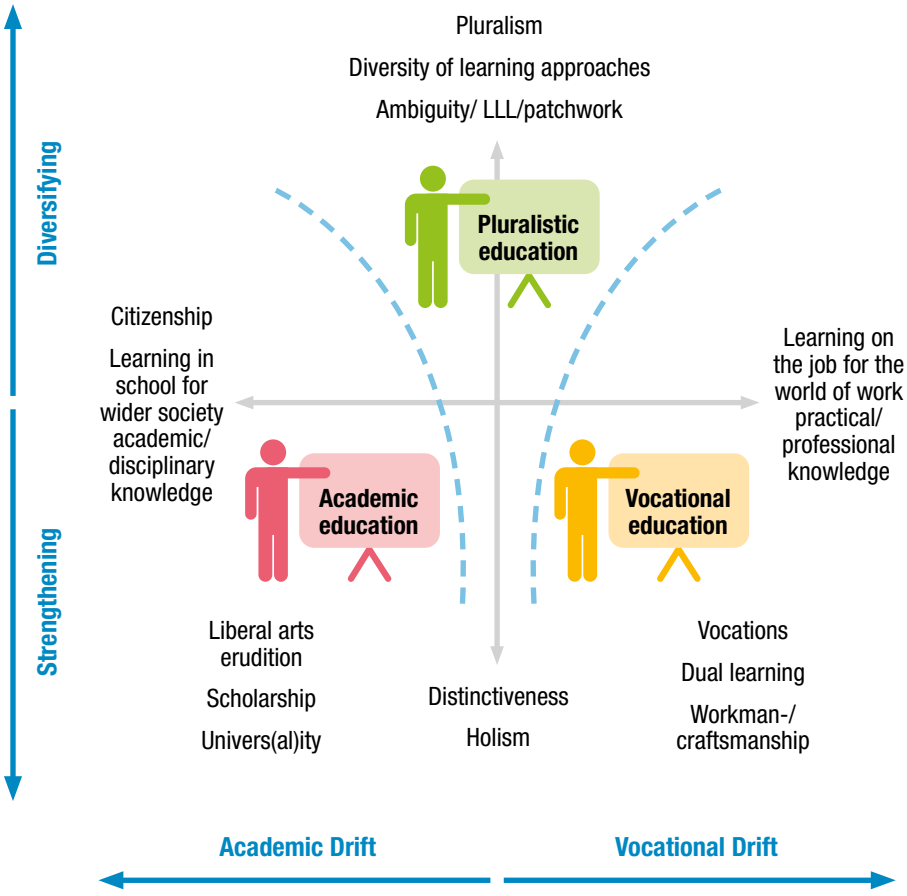
Below we discuss the above model and possible proxies to describe the changes of a country's education system in more detail according to the three perspectives.

From an epistemological perspective, vocational drift (a drift to the right on the horizontal axis) means the appreciation of vocational, practical, tacit or professional knowledge at the expense of the esteem of academic, theoretical, abstract or disciplinary knowledge. This does not imply disregarding science or research as they equally build on professional knowledge, but to emphasise the importance of practical and professional knowledge for research practices. From a pedagogical perspective it means to engage more teachers with work experience from business and industries (in addition to their pedagogical degrees); it means to increase work-based elements in school-based VET or in higher education (such as relatively more students taking part in obligatory internships; less classroom teaching; more hands-on learning; or more practice-based, case-based or project learning).

From the education system perspective, the share of enrolment in vocational education at upper secondary level is perhaps the most reliable indicator to measure vocational or academic drift at this level ([21]). A general

([21]) There may also be paradoxical developments in quantitative and qualitative aspects of vocational and academic drift. For instance, more people may attend VET programmes (vocational drift in the education system perspective), but those programmes may have increasingly more general content (academic drift in the pedagogical perspective). These are obvious shortcomings of a simplified two-dimension model. However, the subsequent country analysis in this chapter will show it is more likely that quantitative and qualitative aspects go together, in the decline as well as in the rise of VET.

Figure 4. **Model to describe changing role and nature of VET**



Source: Cedefop.

comparison of enrolments in VET and HE can be deceptive and only makes sense if the same education/skill level is compared. Much of what is interpreted as academic drift or academisation of VET (e.g. upgrading of VET programmes to higher education) is actually a vocational drift at higher level in our understanding (see also Cedefop, 2019a) ([22]). The increasing relative enrolment in professional HE in relation to traditional universities

([22]) The upgrading of VET programmes may result in lower shares of VET at secondary or post-secondary level, and could therefore also be seen as academic drift at this level.

is also an indicator of vocational drift of higher education. Since it is not always a matter of numbers, but also quality and the esteem, any increase in the latter is considered a sign of vocational drift from an education system perspective.

From a labour market perspective, the strengthening of the role of social partners or giving more power to employers over content is an indicator of vocational drift. However, more State influence does not necessarily mean academic drift. Improving the responsiveness of education to the labour market (as in faster update of curricula, fostering employability) or other measures that bring education closer to the world of work are also signs of vocational drift. Table 6 summarises the main characteristics of vocational and academic drift.

The vertical axis of the above model is less intuitive than the horizontal axis. One way of looking at it is in terms of VET heterogeneity and whether there is a small set of characteristics and a narrow definition (as in VET at a particular level, serving a particular purpose and taking a particular form) or a broad set of characteristics (multipurpose VET, at several levels and taking various forms). But this captures only part of the story, because it does not determine which sort of VET we talk about when we talk about distinctive VET. It would merely define the form of VET in terms of variations on the one hand and unification on the other hand.

To take an example, VET in the German education and training system seems rather distinctive in contrast to the Finnish or Dutch system, but at the same time the German VET system is also very diversified and heterogeneous. There are plenty of school-based VET programmes besides the dual system and, according to ISCED mappings, Germany has more different VET pathways than any other country (Cedefop, 2018b). However, it is the supremacy of the dual system (the hegemony of VET principles) which is characteristic for Germany. Heterogeneity or fragmentation might be a sign of a pluralistic VET system, but only if it comes with an egalitarian notion of approaches to, and fundamentals of, VET.

Some trends can only be interpreted correctly in relation to a country's starting position. For instance, 'increasing apprenticeship places' in Germany (by funding measures or awareness campaigns) would strengthen the hegemony of the dual system and make it even more distinctive. In contrast, increasing apprenticeship places in Spain (besides their existing school-based systems and at the scale at which it is currently done) will not make the Spanish system more German-like. It actually makes

Table 6. **Indicators, trends and developments indicating academic or vocational drift (here understood as decreasing/increasing significance of VET): horizontal axis**

	Vocational drift Increasing significance of VET	Academic drift Decreasing significance of VET
Epistemological/ pedagogical perspective on VET	Increasing esteem of vocational / professional knowledge Increasing work-based elements (e.g. internships) in school-based VET or HE Increasing emphasis on employing teachers with comprehensive work experience (in addition to their academic degree)	Increasing esteem of academic / disciplinary knowledge Accentuation of theoretical and abstract knowledge, a gradual reduction in the emphasis attached to practical or experience-based knowledge Increasing emphasis on the academic background of teachers (increasing importance of their scientific competence)
Education system perspective on VET	Increasing relative enrolment in vocational education at upper secondary level Increasing relative enrolment in professional HE and higher VET (in relation to universities) Increasing esteem of VET (in relation to VET)	Increasing relative enrolment in general education at upper secondary level Increasing relative enrolment in universities (in relation to professional HE and higher VET) Increasing esteem of general education/HE (in relation to VET)
Socioeconomic/ labour market perspective on VET	Fostering employer engagement Strengthening role of social partners Improving responsiveness to the labour market Increasing attractiveness of vocational education (in terms of public opinion)	Increasing attractiveness of general and academic education (in terms of public opinion)

Source: Cedefop. See also Cedefop (2019a).

it more pluralistic, because apprenticeships become one possible VET option besides others. Therefore, we have to look very closely and from case to case whether vocational principles within VET are strengthened, or whether VET is extended to 'new land', making it more pluralistic.

From a pedagogical perspective, signs of distinctive VET are a preference for learning in real-life work environments and professional knowledge instead of classroom teaching and theoretical knowledge, the duality or crossing of boundaries between practical and theoretical learning, and the vocation ('Beruf') as a key organising principle. A pluralistic view of VET acknowledges all this, but also accepts any other approach. Disciplinary and professional knowledge are seen as equal; and so are narrowly on-the-job learning and comprehensive professional education. They are different, but equal forms of VET. Distinctive VET offers, and at the same time draws upon, identities based on occupational ethos, professionalism and workmanship. Pluralistic VET, in contrast, accepts other identities, such as those based on social or economic status or disciplinary background.

From an education system perspective, a VET sector that is clearly separated at all education levels from other education sectors is an obvious sign of distinctive VET: VET separated from general education at upper secondary level, CVET separated from (liberal) adult education, and higher VET separated from professional higher education. Expanding apprenticeships to lower and/or higher levels is also indicative of distinctive VET, but only to the degree that VET principles are retained. In contrast, apprenticeship as just a specific form of employment contract combining provider- and company-based learning (but not organised around the vocation and related to an occupational/professional community) would be a sign of more pluralistic VET. Other signs of pluralistic VET would be the coexistence of broad and narrow (occupation-specific) programmes, an ambiguous sector of vocationally oriented higher education or an increased crossing of boundaries between education sectors. An increasing diversification of VET providers, programmes, target groups or learning approaches is a further unmistakable sign of VET becoming more pluralistic.

The key purpose of VET is often described as education and training which prepares for particular occupations, and this is certainly also central to distinctive VET as characterised here. A broadening of this aim (such as preparing more broadly for the labour market or securing employability) and additional purposes (preparing for further education) makes VET more pluralistic. Introducing or increasing double or hybrid-qualifications combining occupational and general qualification would also be a sign of more pluralistic VET. Table 7 summarises key characteristics of pluralistic and distinctive VET and provides examples of its diversification and strengthening.

Table 7. **Indicators, trends and developments which indicate drift towards pluralistic or distinctive VET (vertical axis)**

	More pluralistic / diversification	More distinctive / strengthening
Epistemological/ pedagogical perspective on VET	Increasing diversity of forms of VET in terms of learning sites (school-based, dual, trial) and in terms of learning approaches Coexistence of disciplinary and professional knowledge Diverse identities (defined by social/ economic status, occupation, discipline, etc.) Increased blurring of boundaries in terms of knowledge/ content (general/vocational; school/ workplace)	Duality (or extended duality, i.e. learning in school, at workplaces and training centres) dominates/ increases Vocation (Beruf) as key organising principle/concept and constitutive for self-identity Learning in real-life work environment and professional knowledge highly appreciated
Education system perspective on VET	An ambiguous sector of higher VET and professional HE; increasing ambiguity Increased crossing of boundaries in terms of education sectors Diversification of providers, programmes and target groups	Renewed emphasis on apprenticeship A distinct and increasing higher VET sector VET at all levels clearly separated (VET versus general education, liberal adult education versus CVET, professional HE versus higher VET)
Socioeconomic/ labour market perspective on VET	Various new and additional purposes of VET (e.g. equity, combat youth unemployment) VET as preparation for occupations/ jobs AND/OR further education	VET as preparation for particular occupations/jobs Focus on job entry and business/ economic growth

Source: Cedefop.

4.2.3. Positioning countries on the two-dimensional model and potential proxies

For most of the criteria discussed above there is no yardstick; for some it is hard to imagine a metric at all. Nevertheless, certain estimates allow us to position each country's VET system in 1995 (starting position) and 2015

(current position) in the coordinate plane (see Figure 4). For an initial positioning we use the share of VET at upper secondary level ([23]) as an indicator of the significance of VET and academic or vocational drift respectively (horizontal axis). Where available, the share of professional higher education and a possible change of higher VET (Cedefop, 2019a) is also used to include academic or vocational drift at higher levels. Attractiveness (Cedefop, 2017b) and esteem of VET ([24]) are further indicators to help with positioning countries. Finally, data from the stakeholder survey *Changing VET 2035* (Chapter 5) help to verify the extent of change where possible. For instance, respondents in some countries strongly confirmed the growth of VET at higher levels while others did not or did so more moderately.

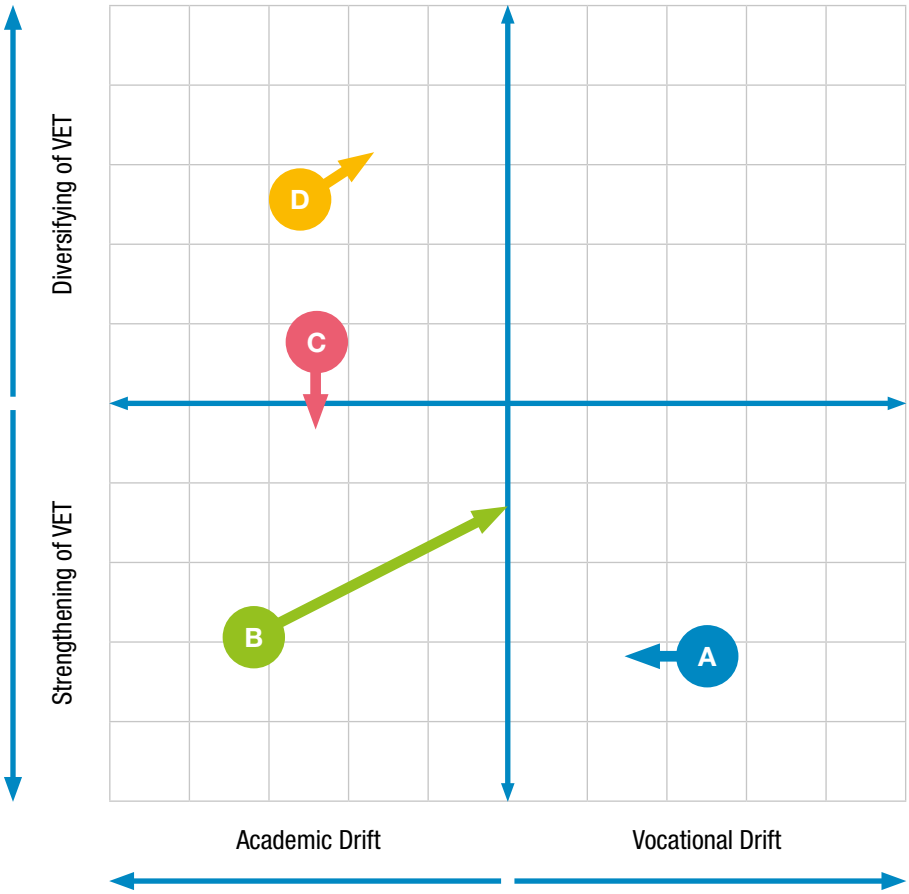
Analogously, we use the share of work-based learning at upper secondary level as first proxy for the vertical axis ([25]) supposing that a VET system building almost exclusively on apprenticeship (such as in Switzerland) can be regarded as distinctive in the above sense, while a lower share of work-based learning also presupposes other forms of VET and being more pluralistic. If available, the share of work-based learning at higher levels (as with higher apprenticeships and dual study programmes) is used as further proxy (Cedefop, 2019a). A strong occupational effect (Cedefop, 2018c) (avoiding unemployment and unskilled jobs, employment in medium skilled jobs) is characteristic of distinctive VET; a high share of VET students continuing studies in higher education underlines the broader purpose of VET (not just job-related). Also, an increasing share of adults in IVET and increasing diversity of VET or CVET providers marks a trend towards pluralistic VET (Cedefop, 2019c). Further, a narrow conception of IVET and CVET as discussed in Cedefop (2017d) and Cedefop (2019c) can be expected for distinctive VET, while a broad conception would be typical of pluralistic VET. These estimates can also be complemented by results from the Cedefop stakeholder survey. For instance, a trend towards more 'influence of employers on training content' can be regarded as strengthening of VET, while 'increasing flexibility and individual pathways' can be regarded as a move towards more pluralistic VET.

Figure 5 provides a schematic representation for the trajectory of change of four fictitious countries. The circle with a letter or the beginning of the

([23]) Eurostat and own data (Cedefop, 2018b) for 1995 and 2015.
([24]) Changes as described in an expert survey carried out in WA1 Cedefop (2017b) and case studies carried out in Cedefop (2018d), Cedefop (2019c) and Cedefop (2019a).
([25]) Eurostat data for 1995 and 2015 complemented with national data and analysis of ISCED mappings.

vector illustrates a country's position in 1995, the end of the vector marks the position in 2015. Logically, the length of the vector illustrates the extent of change. The direction of the vector shows the direction of change within our two-dimensional model.

Figure 5. **Schematic representation for trajectory of change for four fictitious countries (1995-2015)**



NB: Beginning of vector shows the position in 1995, end of vector the position in 2015, length of vector extent of change, direction of vector shows direction of change.
Source: Cedefop.

In Country A, vocational education at upper secondary levels is relatively more significant than general education, which may be also reflected in the attractiveness of VET. The VET system can be considered distinctive in so far as the vocational principles of duality and *Beruf* are strong. While this has not changed in the past two decades, there has been a modest academic drift, such as a relative decrease in VET enrolment.

In Country B, VET in 1995 was residual and most was work-based learning. However, a strong vocational drift has taken place since then and VET and general education are more or less equal in 2015. In addition, the variety of VET provision has increased.

In Country C, VET is also a minor, but in contrast to country B most of it is school-based. There has been little change, but the direction is clear: the increase in work-based learning (WBL) elements in school-based VET and professional higher education (by extending the duration of internships, more hands-on or case-based learning) could clearly be seen as strengthening VET.

In Country D, general education dominates, just as in countries B and C. As in country B, both vocational drift and a trend towards more pluralistic VET have taken place, but to a lesser extent. For instance, little has happened at upper secondary level, but the introduction of professional HE (such as universities of applied sciences) has resulted in a modest vocational drift (there is relatively more VET at higher levels than before) and a shift towards pluralistic VET which involves higher levels, having been limited to medium levels before.

These schematic representations of countries' trajectories are used in the subsequent analysis of Section 4.3, but they are approximations (based on quantitative and qualitative information) of relative change that enable countries to be compared; they are not absolute assessments. We present this analysis by broad geographic groups of countries starting with central and eastern Europe, followed by southern, western and northern Europe. We go through Europe roughly clockwise, starting with Estonia and ending with Finland. Within the broader geographic groups, we use subgroups where it makes sense, either because there are similar cultural, historical or economic contexts or because of similarities in VET systems ([26]). Before presenting this analysis we discuss below some limitations of the model.

([26]) For the benefit of the analysis a few countries have been grouped differently as in Cedefop (2018b).

4.2.4. **Model limitations and ambiguous trends**

Changes of VET systems are multidimensional and multilevel: any attempt to aggregate them poses questions. How do we balance out the difference forms of VET in determining a country's position? Do we consider IVET more important than CVET? Is upper secondary level more relevant than higher levels? Are changes in quantity (more apprenticeship places) more relevant than changes in quality (more effective work-based learning)? In a fully operationalised model we would have to make decisions on such questions and propose weighting factors. But the data collected over the past three years are still patchy and not sufficient to do so; and even if available, further modelling may not succeed. Nevertheless, and despite its vagueness, the model is intended to offer a fresh look at past and continuing changes. It should help to illustrate the fundamental differences of VET systems and the position of VET systems in a country's overall education system, and give an impression of the similarities and differences of change.

Although the model can be improved, there is also a risk of overstretching it. We have tried to integrate more than the trends and drifts discussed above, but for various reasons did not succeed. There are a few important developments or possible characteristics of VET systems which cannot easily be illustrated in the model. The following examples relate to the familiar debate about generic and specific skills.

For instance, an increasing emphasis on generic and transversal skills would probably be seen as academic drift at first glance. However, it could actually be a sign of either vocational or academic drift, depending on the type of skills. Most of what is currently discussed as generic, transversal or 21st century skills are actually skills which foster vocational drift: entrepreneurship, leadership, teamwork, collaboration, cooperation, digital skills, economic and financial literacy. Others, such as civic competences, literacy and numeracy would probably be associated with academic drift. Thus, transversal skills can be vocational or academic.

Similarly, there is using the degree of occupational specificity as an appropriate yardstick to determine the distinctiveness of VET. A VET system in which curricula are organised according to 300 or more occupations is considered more distinctive than a system that provides 30 to 40 broad vocational qualifications. However, increasing the number of qualifications endlessly does not result in a more distinctive VET system but the opposite.

This is counterintuitive at first sight, but evident if we recall the organising principle of vocation (*Beruf*). The German debate on modularisation reflects

this specific issue (Ertl, 2002; Hellwig, 2006; Pilz, 2012). Some modularisation is compatible with the principle of vocation and may even strengthen it, but modularisation per se and at large scale leads to disbandment of vocations and indicates pluralistic VET (a myriad of vocational qualifications at different levels and different in scope existing in parallel).

Consequently, we have to be careful how we interpret a decreasing number of occupational profiles or the broadening of profiles on the one hand and increasing modularisation on the other. Depending on the starting point and the way it is done, it could indicate a trend towards either more pluralistic or more distinctive VET. For instance, reducing the extensive number of vocational qualifications in the UK could be seen as part of a trend to encourage valuable qualifications and improve the quality of apprenticeships ([27]). In contrast, the grouping of around 100 apprenticeship programmes into thematic clusters in Denmark (Cedefop, 2018b) could be a (weak) sign of more pluralistic VET or academic drift. The point here is that pluralism is not the same as variety. Variety may be reduced without affecting pluralism.

The problem with the concept of 'specificity' of skills or the dichotomy of general and specific skills is that we tend to mix views on content (narrow/broad, easy to acquire/hard to acquire) with economic views (portable/non-portable, in-demand/not in-demand, easy to replace/hard to replace, low = vocational/high = academic). But, as Streeck points out, '… there are broad skills that have severe small-numbers problems with respect to their portability, as those of astrophysicists in the world of high academic skills and of Japanese automobile workers among non-academic skills. Conversely, there are narrow skills that are widely portable, like in brain surgery or, at the non-academic level, in sports such as European football. Moreover, specific skills that are neither broad nor portable in the market or the human-capital sense need not be low and occupational; they can also be high and academic, like specialised expertise in early Byzantine military history. Furthermore, and importantly, it is not just academically trained professionals who have skills that are both substantively broad and economically portable' (Streeck, 2011, p. 17).

([27]) See Sainsbury et al. (2016).

The apparent shift to learning outcomes is also difficult to depict in our model. The strong version of learning outcomes postulates ([28]):

(a) learning outcomes can be achieved irrespective of whether or not learning outcomes lower in the cognitive hierarchy have been already achieved;
(b) learning outcomes are related to narrowly identified workplace tasks;
(c) learning outcomes can be independently defined.

Proposition 2 is a would-be candidate for distinctive VET or vocational drift, but has to be rejected for the same arguments made above about specificity. Propositions 1 and 3 could be regarded as potential characteristics of pluralistic VET. However, it can be assumed that, at country level, learning outcomes are quite differently implemented, and it remains an open question to what degree this strong version is actually followed.

4.3. Central and eastern Europe

4.3.1. **Baltic States**

In August 1989 2 million people joined their hands to form a human chain spanning several hundred kilometres across the three Baltic States – Estonia, Latvia and Lithuania – to demonstrate peacefully for independence. What has become known as the 'Baltic way' is not the only common ground shared by the three Baltic States. They all regained independence in 1990-91; since then they have achieved substantial economic success. Market economies have been established and living standards have increased, which culminated in admittance into the European Union in 2004 and to the Eurozone in 2011. Before the global financial crisis, and particularly during 2001-07, the Baltic economies grew rapidly. However, economic growth slowed in the aftermath of the crisis ([29]) and income levels are still substantially below those of old Member States.

In the 1990s, the exports of the Baltic States gradually evolved from products from low-skilled sectors to products from medium-skilled ones. High-tech products comprise a relatively small share of total exports,

([28]) Winch, C. (2018). *Thoughts on future VET scenarios for distinctive VET.* [informal, unpublished note; July 2018.].
([29]) The Baltic States show the strongest long-term increase in real GDP (comparing 1995 and 2015), but also the strongest decline in the years 2007-09 (Cedefop, 2018d, p. 32).

changing little since the global financial crisis (Staehr, 2015). The Baltic States have seen a rapid increase in the old-age dependency ratio that is expected to continue in the coming decade; this trend may be aggravated if emigration continues to reduce the size of the working-age population.

Despite similar recent economic and demographic developments, historical and cultural differences should not be overlooked.

For instance, the Latvian and Lithuanian languages belong to the Baltic language family, which culturally links these nations to one another, while the Estonian language belongs to a distinct language family, the Finno-Ugric group of languages.

Considering both economic and cultural commonalities and differences, has there been a Baltic way in vocational education and training?

At first glance, similarities between the Baltic vocational systems and their recent developments are striking. The Baltic education systems can be considered 'general or non-vocational' in terms of the set-up of upper secondary education and this has changed little since the early 1990s. The Baltic countries are among those with the lowest rates of enrolment in vocational/technical tracks in Europe (around one third of an age cohort) and there is practically no work-based learning on offer. VET is considered as vocationally oriented school education which mainly takes place in classrooms with some learning in school workshops. While the ratio between VET and general education has remained stable over the past two decades, all three countries have seen a net reduction in student population at upper secondary level due to shrinking youth cohorts ([30]). In contrast to upper secondary level, higher education saw a period of strong expansion in the 1990s in which the number of both higher education institutions and students grew constantly (and youth cohorts were still rather stable), but a strong decline between 2006 and 2016. To understand developments in the Baltic VET systems both changes in the higher education sector and the legacy of the Soviet vocational education and training have to be considered., We use the example of Estonia to illustrate this.

During the socialist period, 'the Estonian education system was an integral part of the Soviet education system with its ''party-State institutional structure, main principles of centralisation and standardisation, […] utilitarian and egalitarian goals"', (Saar and Lindemann, 2008, p. 152) and 'deeply rooted in a vocational education/applied science paradigm' (Soltys, 1997, p.

([30]) In 2015, the Baltic countries had only 80% of the young population of 1995 (Cedefop, 2018b).

137). Just as in many western societies, a transition to universal secondary education took place in the 1970s, which resulted in a differentiation of the education system. After graduating from basic school, students were tracked into general secondary schools (the traditional academic track), vocational schools (which trained skilled workers for industrial work) or specialised secondary schools (which combined vocational training with academic subjects and were originally intended to educate semi-professionals (Saar and Lindemann, 2008)). Although the three types of secondary school were officially equal, the general level of teaching was considerably poorer in vocational and specialised secondary schools and oriented toward young people of lower social status. Despite various reforms, general secondary schools gave their graduates the best chance of continuing their studies at a university, while the vocational track was dominated by negative selection and vocational schools were educational dead-ends (Saar, 1997). After 1990, through various reforms, dead-ends were removed and initial VET systems became more differentiated (providing VET from ISCED level 2 to 4). In this sense, today's Estonian education system is relatively open as most programmes allow direct advancement to the next level and horizontal permeability is also possible. However, although there are no longer any legal restrictions, actual progression is low. Initial VET is considered a good preparation for jobs, but 'for own relatives it is not suggested' (Pärtel and Petti, 2013). This situation is partly reflected in Cedefop's opinion survey: in this representative survey, 84% of Estonians totally agreed with the statement 'It is easy to continue into higher education such as university after vocational education at upper secondary education'. This is the highest score in the EU (68% in Latvia, 66% in Lithuania, compared to only around 40%-50% in Denmark, France, the Netherlands, Austria or Sweden), yet the image of VET for young people is only average compared to other Members States (Cedefop, 2017b, p. 64).

A reason for this is that vocationally oriented education and training at higher levels have also become available. Between 1989 and 1991, professional higher education was established as a second higher education track resulting in a binary divide of the Estonian higher education sector ([31]). During this period several former specialised secondary schools under pressure from economic and political insecurity started to form a new sector

([31]) All Baltic States have binary higher education systems with a relatively strong professional strand, most pronounced in Latvia.

of professional higher education modelled after German *Fachhochschulen* (universities of applied science). Consequently, professional higher education in Estonia has greatly increased in the 1990s (just as in Finland), finally catering for around one third of all students in higher education; this also indicates the vocational drift which has taken place at higher levels (see Figure 6) ([32]). With the widening of educational opportunities (also due to increases in private providers and fee-based education) at the higher education levels as well as a large increase in non-formal education opportunities in specific sectors, VET has remained a viable (second) chance primarily for early school leavers and for young people who had graduated from general secondary schools to continue their studies.

To make up for shrinking youth cohorts, both VET schools and higher education institutions have started to open up to adult learners, particularly in the past decade. The proportion of students aged 25+ in IVET has increased from 14% in 2007 to 34% in 2016. The share of adult learners in higher education has increased from 38% to 47% in 2016 (Roosalu and Saar, 2018). The opening up of VET to adult learners has been also partly due to financial support from the European Union and VET schools have started to offer CVET courses at no or low costs to unemployed and inactive adults.

Estonia, like other newer Member States, has been receptive to EU education policy goals and tools (Raudsepp, 2010) and accepting of EU norms and policy goals less critically than older members (Toots and Kalev, 2016; Toots and Loogma, 2015). While this may look conformist from the outside, it is logical when looking at the developments described above. Estonia entered the Copenhagen process at a time when no established Estonian institutional setup for VET was in place; and general liberalisation and marketisation tendencies in education fitted both with the values of the Lisbon process and Estonia's national goals in education (Toots, 2009).

To sum up, many aspects of European education policy goals have been realised in Estonia, such as an influx of adult learners in formal VET and more flexible provision. VET has been given a much wider task in terms of social cohesion, by filling the function of catering to early school leavers and securing the unemployed and other disadvantaged groups access to any or new skills and knowledge. This, together with an increased share of (more

([32]) More recently, vocational qualification at higher levels have been established, either provided by vocational schools or higher education institutions, indicating some minor growth of higher VET (Cedefop, 2019a).

privileged) adult students in IVET whose main purpose of studying is perhaps not job-related, has resulted in a substantial diversification of the student body. However, the esteem of VET for one's first level of qualification both at secondary and post-secondary education continues to be low (Roosalu and Saar, 2018, p. 11).

Have Lithuania and Latvia taken different trajectories? In Estonia, the diversification of provision for adult learning seems to have been more dynamic but starting from a lower level. In Latvia the share of higher education students studying in professional higher education is much higher than in the other two Baltic countries: more than two thirds of all students in higher education (Daija, Z. et al., 2016). In Lithuania, the number of secondary school leavers opting for a combination of general and vocational studies has increased, while the proportion of young people studying only in vocational schools has declined substantially (Taljunaite, 2008), reflecting a trend towards broadening or opening of VET. The main institutional changes which took place in Lithuania since the transition up to EU accession include the decentralisation of VET provision (giving schools autonomy in curriculum design) and recognition of full autonomy of universities and universities of applied science (Saniter and Tūtlys, 2014). Policy borrowing was mainly from the UK: the British liberal approach to economy and functional approach to education were used as a model for most reform action ([33]). Despite the fact that they seemed to be easier to implement than, for instance, the German approach, there were a number of obstacles to implementation, particularly due to lack of capacity and capabilities of actors and agents of change (Laužackas, Tūtlys, and Spūdytė, 2009; Tūtlys, 2018).

Expansion of higher education and vocational drift at higher levels has taken place in all three countries. An increasing share of adult learners in VET can also be observed, though overall is still low compared with EU averages. Further, enrolment figures in VET do not show any marked differences between the countries, and work-based learning, in terms of apprenticeships, is marginal.

([33]) As West pointed out, based on interviews with people involved in policy transfer projects, at that time there was the Anglo-Saxon approach and the German approach to VET trying to be developed in the eastern countries. The introduction of the German dual system of apprenticeships proved very difficult in countries which did not have this tradition. Therefore, the NVQ system developed in the UK was more successfully introduced and also supported very much by many consultants. There were consultants from Denmark, Germany, Ireland, the Netherlands and the UK but not from France, though many eastern Europe countries had much in common with or were originally influenced by the French school-based system (West, 2013, p. 46f.).

While key IVET figures suggest stability, the content and structure of VET changed substantially in all three States since they became independent. They effectively built up a new VET system and required extensive legislative work and various reform periods, including new ways of education planning, curriculum renewal, and implementation of quality assurance measures (Bünning, 2008).

In our survey among VET stakeholders (Chapter 5) respondents from Estonia and Lithuania (Latvia was excluded because of low numbers of respondents) were more likely to confirm increasing work-based elements in curricula, a shift towards learning outcomes and growth in VET provision at higher levels.

Despite the low esteem and the fact that VET is not a first choice, vocational education does not have a strong negative effect on labour market outcomes in the Baltic States. Differences between individuals with vocational and general upper secondary education are smaller in these countries compared to other types of country, especially for the 30 to 34 age group. VET functions quite well, especially from a long-term perspective in terms of sheltering their graduates from low-skilled jobs and unemployment and ensuring entry to positions in the middle of the social hierarchy. A generally weak connection between education and the labour market might exist, suggesting that the labour market is less determined by qualifications (Cedefop, 2018c, p. 41) ([34]).

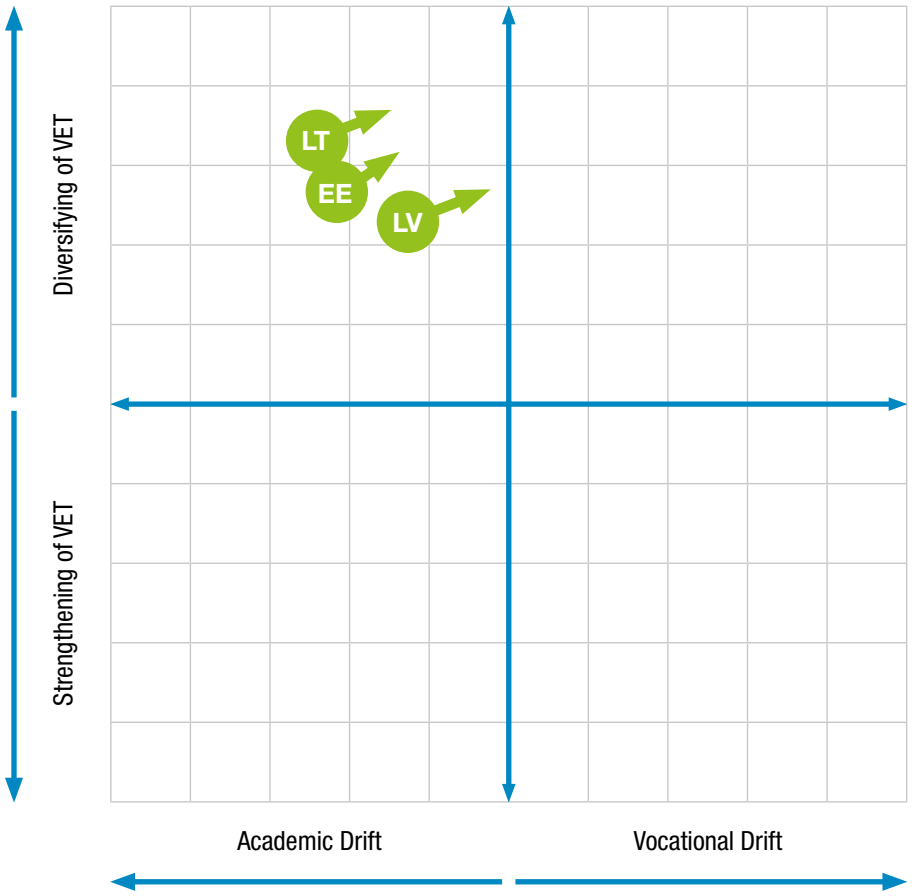
4.3.2. **Visegrád Group**

Since the migration crisis of 2015 the Visegrád countries (V4) – Czechia, Hungary, Poland and Slovakia – have become more prominent as a group ([35]), although the political alliance was already formed in 1991 at a summit in the Hungarian castle town of Visegrád. The original purpose of the group was to foster military, cultural, economic and energy cooperation with one

([34]) See also Kogan and Unt (2008) which, in a comparison of Estonia and Slovenia, found in the latter that school leavers, irrespective of their educational qualifications, hardly differ regarding the speed of entry to their first significant employment. Neither those with vocational credentials at the lower-secondary level, nor university graduates were able to secure their first stable employment more quickly than the least educated.

([35]) During the migration crises and up until now they have articulated a very pronounced and distinctive stance on migration: they basically stood against the open-door policy attributed to Germany (and the European Union in general).

Figure 6. **Schematic representation of change in VET in Baltic countries 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

another along with overcoming communist structures and furthering their integration in the EU ([36]).

The commonalities of these four countries certainly go beyond common political goals on migration or (pro-)nuclear power and can be related to many cultural and historical parallels: various territories being ruled by the Habsburg Empire and its successors at various times from the 1500's to World War I; becoming satellite States of the Soviet Union after World War II; and going through the EU accession process in parallel (1993-2004) ([37]).

All four countries have enjoyed more or less steady economic growth for several decades and did not experience the extreme economic downturn after the crises that the Baltic States did ([38]). Compared to other post-communist countries, some market-oriented reforms were already in place before the transition in the Visegrád countries. At the time of the fall of the Iron Curtain, Czechoslovakia and Hungary were the wealthiest countries of central and eastern Europe (CEE) with a GDP per capita twice that of the poorest CEE countries Romania and Bulgaria. The Baltic countries were ranged in the middle, despite their disadvantaged position within the former Soviet Union. The Visegrád countries have also been very successful in attracting foreign direct investment (FDI) since then and the industrial sector (such as car manufacturing) has been a growth engine. The other side of the coin is that average households have not seen enough of the fruits of economic growth. Those rewards have gone disproportionately to the owners of capital, mainly foreigners.

There is one area where the Visegrád countries face a particular challenge and which they share with the Baltic States: demographics. Most European countries have ageing populations, but western countries have positive net immigration while most CEE countries have emigration ([39]). The youth population has been declining in the Visegrád countries, being most pronounced in Poland. During this period, there has been significant

([36]) According to the official website the formation of the Visegrád Group was motivated by four factors: the desire to eliminate the remnants of the communist bloc in central Europe; the desire to overcome historic animosities between central European countries; the belief that through joint efforts it will be easier to achieve the set goals, i.e. to accomplish social transformation and join in the European integration process; and the proximity of ideas of the then ruling political elites.

([37]) The euro is an exception; only Slovakia adopted the euro as its official currency in 2009.

([38]) The Polish economy proved to be resilient following the financial crises. In the years 2007-09 (measured by real GDP) Poland grew by 7%, Slovakia stagnated, Czechia shrank by 2% and only Hungary, at -6%, was below the EU average (- 4%) (Cedefop, 2018d).

([39]) With the exception of Czechia which had positive net immigration especially in the economic boom period.

labour mobility to the western parts of Europe, and this is probably partly responsible for the significant fall in the youth population. Despite some temporary increases (e.g. in Poland between 1995 and 2005), a decline in the youth population (15 to 30 years old) has resulted in a net loss of more than 20% in 2015 compared to 1995 in all Visegrád countries. Slovakia has only half as many live births as there were by the end of the 1970s (around 100 000). The ageing index increased severely from 34% in 1970 to 83% in 2011 and ageing of the population is expected to continue. The share of the population over 65 is projected to be more than double over the next 35 years, with the number of young people (aged 0 to 24) declining by more than a third; there will be also fewer people of school age. The old-age-dependency ratio is expected to more than treble: from 19.6% in 2015 (the lowest in the EU) to 65.9% in 2060 (Allinckx and Monico, 2016, p. 8).

Economic growth and foreign investment along with shrinking working populations have resulted in skills shortages which very likely will intensify ([40]). Unemployment rates, which were among the highest in Europe when the Visegrád group joined the EU, are currently among the lowest: as an example, unemployment in Poland was above 20 % in 2003 and is now below 4%. This may come as a surprise to many other countries in Europe which have seen an influx of migrants from this region in the past decade and considered CEE countries as an endless pool of skilled workers ([41]). Immigration to solve the increasing skills shortage is currently political not opportune in the Visegrád States ([42]), but the current renewed emphasis on VET and its changing role originates from these economic developments. To understand this change we have to go further back in history, taking Poland as an example, before going more into details on enrolment numbers in VET in the V4.

As in other countries of the eastern bloc, Poland's VET regressed with the transition from a centrally planned to a market economy. Large State-owned enterprises were closed or privatised, and new owners refused to support VET schools previously linked to them. The direct links between enterprises and VET schools were disrupted. This was due, on the one hand, to lack of

([40]) Shotter, J. (2018). Central Europe: running out of steam. After 20 years of growth, labour shortages threaten to shake up the region's economic model. *Financial Times*, 27 August 2018.

([41]) E.g. emigration in Poland since 2004 is estimated to be more than 2.5 million workers or every fifth person aged 25-34 left Poland for the long term (Fihel and Okolsi, 2017).

([42]) It is estimated that more than 1.3 million Ukrainian workers entered Poland after 2014 (Chmielewska, Dobroczek and Puzynkiewicz, 2016) which has become one of Europe's biggest, yet least visible, migrations.

money, and on the other, to the popular belief at the time that vocational education was too expensive, held no future for Poland's economy, and to the preference for higher education. Polish employers at that time neither saw a need to invest in training their employees nor to contribute to the VET system. A strong increase in the salaries of those with higher education and the rising unemployment of those with basic vocational education contributed to this development of 'de-vocationalisation' of the Polish education system (Dębowski and Stęchły, 2015). VET was not the object of reform actions during the entire transition period: 'At the beginning of 2010, the most important problems of vocational education were determined to be: the inadequacy of the educational offer to the needs of the labour market, outdated curricula, poorly equipped educational facilities, low involvement of employers, the poor quality of vocational training, and the depreciation of vocational education in the public eye' (ibid. p. 68). Only recently has VET become a new national policy priority as reflected in various national and regional strategic documents and actions, among them the implementation of learning outcomes-based curricula and assessment, investment in infrastructure, and measures to improve the image of vocational education (ibid.) ([43]). A recent study shows that also the attitudes of employers have changed. They are now more willing to support the VET system (such as by taking learners for practical training or contributing to sector councils or advisory boards), although they are still reluctant as regards more operational tasks (such as developing curricula or participating in exams) (Dębowski and Reegård, 2018).

To what extent are these developments reflected in enrolment data for VET? Have the other Visegrád States taken similar trajectories in the changing role of VET? Do the countries have similar VET systems at all, despite the fact that education is not part of the political agenda of the Visegrád States?

The countries do show remarkable similarities. In contrast to the Baltic States, they all have strong school-based VET systems which have shown steady erosion within the past three decades. They have a similar conception of IVET and also of CVET (conceived as job-related formal and non-formal education), and in all four countries we see a clear trend towards combined general and vocational education (dual qualifications providing access to

([43]) See for instance the VET curricula reform in 2011/12 and the very recent VET reform (September 2018) aiming at improving the prestige of vocational education in Poland. https://eacea.ec.europa.eu/national-policies/eurydice/content/national-reforms-vocational-education-and-training-and-adult-learning-50_en [accessed 15.10. 2018].

higher education and a technical/professional qualification) at the expense of more practical VET at lower ISCED levels in the past two decades.

In Poland the share of students in vocational education has decreased from 78% to 58% over the past three decades (1990-2017) (Chłoń-Domińczak, A. et al., 2016; Fedaczyńska, 2015). In Hungary it has decreased almost to the same extent from 76% to 58% between 1990 and 2018 ([44]). In Czechia and Slovakia the decline has been less, from around 80% to 70% (between 1995 and 2015). The data show a steady decline without any major breaks.

Despite some changes in the past two decades, the education systems of Czechia and Slovakia are remarkably similar and substantially based on the Czechoslovak system as established by a fundamental reform in the 1970s. It featured strong secondary VET, originally designed for 85% of the respective age cohort, complemented by a slim, strongly academically oriented general education stream and restrictive access to tertiary education (Cedefop, 2016b, p. 13).

The education system of both countries still features a high share of secondary VET graduates, but many continue at universities which have expanded substantially in terms of number of institutions as well as students. Bachelor programmes aimed at entering the labour market are, however, rare and large numbers of students progress to master programmes (Chłoń-Domińczak, A. et al., 2016).

Most VET students in Czechia graduate by a *maturita* examination (44% of all upper secondary graduates) enabling further studies at tertiary education level. This type of VET has been increasingly preferred over programmes which do not lead to *maturita* and are intended mainly for direct entry to the labour market (Kaňáková, M.et al., 2016, p. 7) ([45]). The same applies for Slovakia: in 2015 the majority of those who graduated from upper secondary graduated through VET with *maturita* (44%), 18% from VET without *maturita* and only 29 % from general education with *maturita* (Cedefop, 2016b, p. 18).

([44]) See data of the national statistical office: http://www.ksh.hu [accessed 2.8.2018]. In this share the vocational grammar schools are included. According to Farkas, P.et al. (2016), they are considered vocational, while according to ISCED, this programme is considered general. The ISCED mapping for Hungary states that 'the schools are vocational, but the programme is academic'). According to a Hungarian country expert, roughly 30% of the curriculum is vocational. See further details below.

([45]) Since 2014 this trend has reversed again due to the introduction of the State *maturita* which is generally more demanding than previously non-regulated *maturita* and deterred some pupils from such programmes (Kaňáková, M. et al., 2016).

A similar pattern can be observed in Hungary. Under the socialist education system, the most popular secondary education institutions were apprentice-school programmes which lasted for two to three years and combined three days per week in school with two days per week of work experience. Apprentice graduates were not eligible to continue their studies at tertiary level. The second most common type of school was the technical secondary school, at which pupils sat a 'maturity' exam after the fourth year, providing access to universities (Bukodi and Róbert, 2008). Since the end of the Soviet occupation, the overall share of VET has fallen, but within VET those programmes which offer access to higher education upon graduation have increased relatively. The secondary vocational schools (now vocational grammar schools), which combine general and vocational learning and lead to matriculation after four years and a technical qualification after the fifth year, have increased relative to the vocational schools (now secondary vocational schools). In 1995 there were more students starting the practical track (57%), while in 2015 there are more in the combined general and vocational track (53%). This pattern is not restricted to CEE countries but can also be found in France, the Netherlands, Austria and many other countries.

Despite the absolute and relative falls in the more 'practical' VET track in Hungary, work-based learning and the number of apprenticeship places have slightly increased in the past decade ([46]). To understand this apparently contradictory development it must be noted that work-based learning in the narrower sense (apprenticeship) is not a separate pathway in Hungary as it is in Austria, Germany or Switzerland, but an option for organising learning in one of the two VET tracks. Currently 40% of the students of vocational schools participate in apprenticeship training in Hungary, compared to only 9% of vocational grammar school students.

The increase in apprenticeships in Hungary can probably be regarded as a direct result of policy interventions rather than a 'natural' development based on student or employer preferences. Since the beginning of the century, every government has supported and attempted to develop apprenticeships further; this is particularly so with the second Orbán government since 2010. In 2011, a reform of the previous system was undertaken by introducing a 'dual VET system' which carries some substantial characteristics of its German counterpart (presupposing a contract between the apprentice and

([46]) Compare this with a similar development in France. In both cases it reflects the efforts of national policy and funding in this area.

the company), but adjusted to the Hungarian context (State subsidies for companies taking apprentices).

The dual VET system of the German-speaking countries has also inspired the Slovak government (originally initiated by employer representatives, particularly from the automotive industry) to introduce a specific case of dual VET. A new VET Act was adopted in 2015 to make this happen. In 2018 a substantial amendment of this act was adopted to make dual VET more attractive schools, companies and individual learners (Cedefop, 2018g). However, in both countries it is too early to assess the impact and they cannot be compared to the Hungarian case.

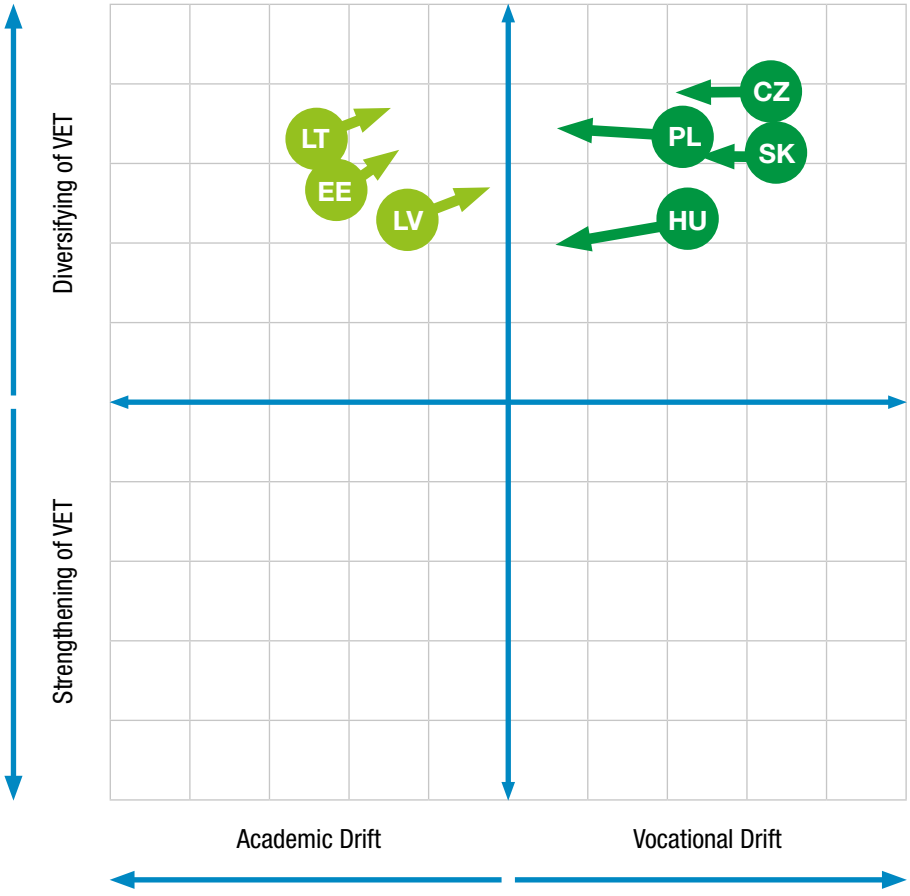
VET systems at upper secondary level in the Visegrád countries have obviously experienced some academic drift, but still a very high share of students start a VET programme each year. Also, there are signs (as in Poland) that VET has recently taken a U-turn and will become more attractive again, partly due to public reforms but mainly due to the changed economic situation and changing attitudes of employers and parents. Nevertheless, during 1995 to 2015, VET programmes which do not provide access to higher education have dramatically decreased, while hybrid VET programmes offering dual qualifications (professional diplomas and as higher education entrance qualification) have become an important supplier for a greatly increasing higher education sector. West (2013, p. 31) explains this by the fact that general upper secondary education had been supressed in communist times and because upper secondary general education was the 'royal road' to university, there was a tendency for general education to expand at the expense of vocational.

Hence the (negative) effect of VET on participation in higher education is weaker in these countries with school-based vocational education compared to dual system countries. The probability for VET graduates to continue studying at higher education is lower in every country than for general upper secondary education (Cedefop, 2019c). But this is not because VET generally fails to bring up students to higher levels; it is because this is a new additional function for VET, while for general upper secondary education it still is the exclusive function.

As in the Baltic States, people in the Visegrád countries find it relatively easy to continue into higher education after VET at upper secondary level (only Hungary is below the EU average) (Cedefop, 2017b). Asked whether they would recommend general or vocational education to a young person about to decide on their education at upper secondary level, people from the

Visegrád States are also much more likely to recommend VET (between 61% and 67% compared to only 21% and 26% in Belgium, Denmark, Ireland or the UK (Cedefop, 2017b, p. 55). This is further confirmed by a largely positive image of VET and a preference for government investment in VET (ibid.).

Figure 7. **Schematic representation of change in VET in Baltic and Visegrád countries 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

4.3.3. **South-eastern countries**

Bulgaria and Romania – which joined the EU in 2007 (three years after the Baltic States and the Visegrád countries) – had experienced economic and demographic developments similar to other CEE countries, with some less favourable. As a result of the transitional recession during 1991-93 triggered by the structural changes in the economic system, the Baltic countries suffered heavily due to the breakdown of trade relations with the Soviet Union countries, though this was followed by rapid growth. In comparison, Bulgaria and Romania not only had the lowest GDP per capita of all CEE countries in 1990, but both were hit by a second recession at the end of the 1990s due to delayed restructuring (Kogan, Gebel, and Noelke, 2008, p. 36). However, GDP per capita in both countries showed steady and strong growth in the 2000s. This growth continued in Romania after the short set-back in the year of the financial crisis, while in Bulgaria it has fluctuated since the crisis. After radical reforms in the late 1990s, economic growth in Romania has led to a complete reshaping of the country's economic and social landscape. Private capital became the economy's leading force, and services came to prevail both in terms of their contribution to GDP formation as well as in overall employment (Cedefop, 2011; Musset, 2014).

Despite this remarkable economic catching-up, GDP per capita in both countries is still among the lowest in Europe. This partly explains underperformance in some key education indicators, such as participation in lifelong learning (Markowitsch, Käpplinger and Hefler, 2013). Like other CEE countries, Romania and Bulgaria have experienced a decline in the youth population over the years, but even more pronounced. They both lost more than a third of their youth population (15 to 29 years old) between 1995 and 2015 (Cedefop, 2018b), the birth rate in Romania low between 1990 and 2012, down by 43% (Iancu et al., 2015). Consequently, participation in secondary education has been decreasing and many smaller schools have been merged with bigger ones.

As in other CEE countries, Bulgaria and Romania have predominantly school-based systems with general academic and vocational provision in different types of dedicated upper secondary institutions ([47]). The share of

([47]) Both countries introduced a track combining school- and work-based learning: in Bulgaria the dual track in 2015 and in Romania the professional track in 2014, with its dual form starting with 2017. This may explain the above-average expectations for the future in the development of work-based elements in curricula (Chapter 5).

VET students at upper secondary level is clearly above the EU average and a majority of students opt for VET at this level. In Bulgaria, the share of VET has remained rather stable in the past two decades. However, the apparent stability of VET's share of upper secondary education conceals significant shifts between programmes. In 2002, the school-based programme 'VET programmes for second level of professional qualification' was extended to include an extra year (13th grade), which increased enrolments slightly. In 2011, the 13th grade was abolished and students now transfer to third degree programmes of professional qualifications, which are also school-based but with work-based elements included since 2015 (Cedefop, 2018b). Although legislation encourages dual VET ([48]) and the new school curricula and training programmes for dual VET for 2017/18 are ready, implementation is still mostly project-based (Cedefop 2018a). In Romania, the share of VET at level 3 and 4 was stable between 1995 and 2005, declined significantly until 2011 and started to increase thereafter. Starting in 2012, three-year vocational programmes ([49]) (ISCED-P 352, (*învățământ profesional*) were reintroduced, after a three-year break. In November 2016, the dual form of initial VET for qualifications EQF levels 3, 4 and 5 was introduced through a Governmental Decision, endorsed in April 2018 by amendments to the Education Law. The methodologies for the organisation and functioning of the dual form of professional programmes was developed in 2017 and its implementation started in the school year 2017/18.

As in Hungary, work-based learning in Bulgaria and Romania is a compulsory element of every VET programme. It can take place either at school premises as part of regular classes during the school year or in a real working environment. In Bulgaria, work-based learning forms a substantial part (50% to 70% or more) of all VET programmes (spotlight on VET, Bulgaria). Practice at school premises is called study practice (*учебна практика*) and that for professions related to high-end technology, that takes place in a real working environment (called production practice, *производствена практика*) (Cedefop, 2018i, p. 26). In Romania all work-based-learning is called *stagii de practica* and it can take place either at school (mainly for

([48]) Including the updated 2015 Ordinance No1 on organisation of dual training at schools that clarifies stakeholder (VET school, company, mentor, teacher and learner) responsibilities.

([49]) There is no agreed English term for the programmes. They are sometimes referred to as 'vocational', sometimes as 'professional', hereafter we call them 'vocational'.

technological programmes) or in real work environment (as is the case with vocational programmes).

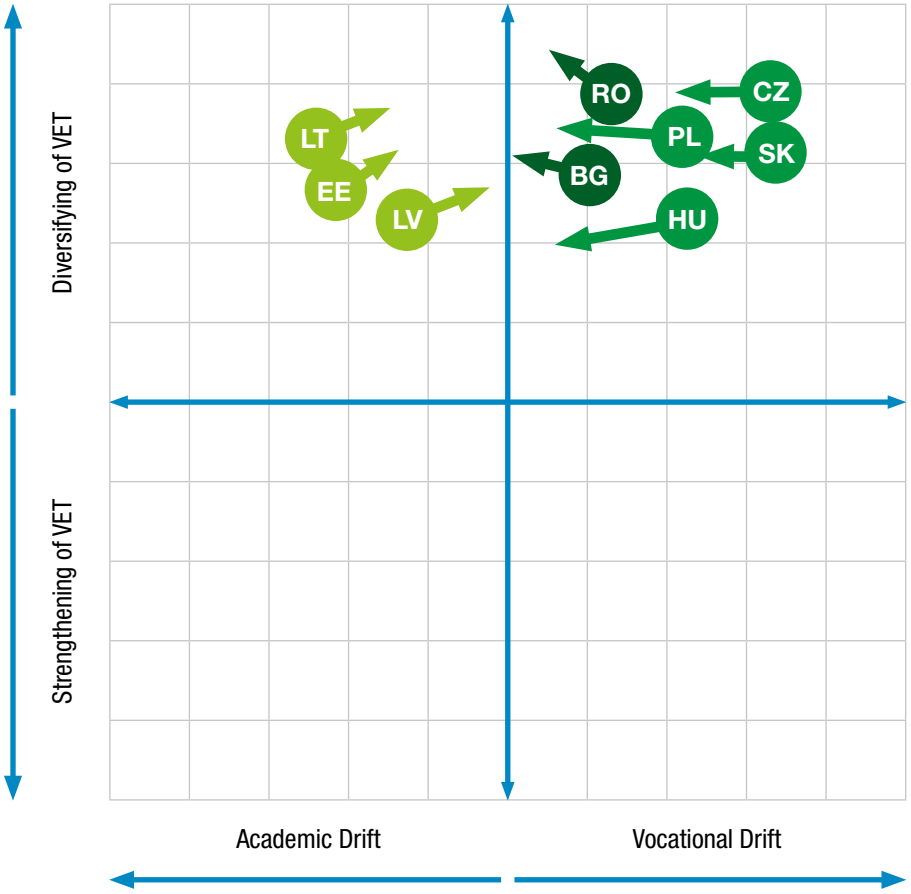
In Romania, all types of upper secondary education give direct access to higher education, and most also offer a qualification and therefore an opportunity to obtain a job after graduation. One of the strengths of Romanian IVET is the inclusiveness of the system: a serious effort has been made to create avenues between different levels of learning and between vocational and academic tracks, to raise the status of VET. In 1996, about 85% of all VET institutions offered a final secondary examination (*baccalauréat*). Between 1993 and 1998, enrolment in vocational education leading to a *baccalauréat* examination increased, while vocational tracks offering a qualification decreased in importance. Throughout the 2000s, there was an increasing trend towards expansion of vocational schools and a decline in apprenticeship schools (Mocanu, 2008, p. 301). Vocational schools were discontinued in 2003, replaced by a new vocational pathway called the 'progressive high-school technological route', aiming to facilitate access to higher education for students enrolled in vocational education. However, the progressive route was not a success: only a minority entered the labour market, and the academic performance of the students, witnessed by their graduation results, was poor. In 2009, a new change in pre-university education was initiated, making the first two years of high-school compulsory. Graduates of the two first years of high-school could now either continue the last two years of high-school or enrol in a six-month vocational course delivered as work-based-learning. In practice, this meant the termination of the vocational education programme, since almost all the students continued in high school. The enrolment shares for vocational programmes in 2009, 2010 and 2011 declined, as there were no new enrolments during these years. Finally, in the 2012/13 school year, the vocational programme was relaunched with entry points after the ninth grade, and from 2013/14 the entry point moved after the eighth grade (after the gymnasium). Since its relaunch, the vocational track has steadily increased every year.

In Bulgaria, VET programmes for school-age learners have vocational and general parts and graduates acquire qualifications for both: a secondary education certificate (which gives access to higher education) and a vocational qualification. To make VET more responsive to labour market needs, the Pre-school and School Education Act (2015), which covers VET as well, increased the responsibility of local and regional authorities. The 1995 Higher Education Act introduced a non-university type of higher

education provided by vocational colleges (ISCED 5b). They offer a three-year programme for vocationally oriented education in various fields, which counts towards obtaining the specialist degree (Kostova, 2008). However, the share of VET learners in post-secondary VET is marginal in Bulgaria. This may be related to several factors: access requirements, such as learners should have completed secondary education; progression to further education, since the qualification acquired at this level provides access to the labour market but not to another education level; financing, as most vocational colleges are private and learners have to use their own financial resources; and attractiveness of the programmes offered. In Romania, post-secondary educational attainment has increased significantly, from less than 9% in 2000 to 22% in 2012 (Musset, 2014, p. 11). The two main types of postsecondary vocational and training provision in Romania are 'post-high school system' programmes from one to three years, provided in service, commerce and technical areas, and the foreman programmes which deliver part-time courses for technicians in employment. However, as in Bulgaria, the numbers remain relatively small, not only in comparison with other countries, but also given the large upper secondary VET sector (Musset, 2014). Also, in our online survey, Bulgaria and Romania (with Croatia) had the lowest approval ratings for 'growth of higher VET in the last 20 years' (Chapter 5).

As regards the image of VET, both in Bulgaria and Romania respondents in a representative public survey were more likely to say that they would recommend vocational education at upper secondary level to a young person. Also, both countries rate the labour market outcomes of VET quite similar and, on average, in line with other European countries. However, most people in Romania (82%) find it easier to obtain a VET qualification compared to general education, while in Bulgaria respondents (45%) were less likely to agree with this statement (Cedefop, 2017b). A recent study in Romania, which goes more into detail on the question of choosing general or vocational education, found that those with higher ages, low level of education or belonging to households with low income levels, are more likely to advise young people to choose a vocational path (Maer Matei, Mocanu and Zamfir, 2018).

Figure 8. **Schematic representation of change in VET in Baltic, Visegrád and south-eastern countries, 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

4.3.4. **South-central: Slovenia and Croatia ([50])**

Despite fighting a war of independence from 1991 to 1995 and joining the EU much later (in 2013), Croatia experienced better economic conditions than Romania and Bulgaria at that point. However, since the crises, Croatia has experienced a deep and long-lasting recession, with an average growth rate of -2.2% during 2009-14 (cumulative fall of -13.2%) and so has been hit harder than Bulgaria and Romania. The decline in youth population has been marked, although less severe than in Bulgaria and Romania. Young people have been hit exceptionally hard economically, with youth unemployment reaching a rate of 50% in 2013. It has since fallen to 43.0% in 2015 compared with 20.3% in the EU but is still among the highest in Europe together with Greece and Spain (see below) (Cedefop, 2019b).

The education system in Croatia is more similar to the Visegrád countries than to Romania and Bulgaria: the share of VET students at upper secondary level is among the highest in Europe, and the rate of early school leaving is low. As in the Visegrád countries, Croatia underwent a very modest decline in VET in relation to general education in the past two decades, along with a shift away from practical VET without direct access to higher education towards VET programmes providing access to higher education (Agency for Vocational Education and Training and Adult Education (2016).

While the number of students enrolling in four-to-five-year technical or similar programmes has been relatively stable in recent years, the number of students in more practical three-year VET programmes has been steadily falling. Between 2008 and 2016 the number of students in the apprenticeship-like training programme for crafts and trades ([51]) halved and their share of all VET students decreased from 16% to roughly 7% (or 11 000 students) in 2016 (Cedefop, 2019b).

At the time of the fall of the Iron Curtain, Slovenia was in a privileged position relative to many other central and eastern Europe countries. It was the wealthiest part of the former Socialist Federal Republic of Yugoslavia and had more contact with western markets (Ivancic, 2008, p. 353). By GDP per capita it is the richest of the Slavic countries behind Czechia and the first formerly communist country to introduce the euro as its currency (in 2007).

([50]) We discuss Croatia here as part of the CEE countries and not southern Europe despite its long Mediterranean coastline. First, because Croatia can be considered a post-communist country and second, because Croatia's economy and VET system share more features with other CEE countries, in particular with the Visegrád countries, than they do with southern Europe countries.

([51]) *Jedinstveni model obrazovanja* – JMO.

In this sense, Slovenia ([52]) is among the most advanced new Member States; Croatia, while being the newest Member State, ranks before Bulgaria and Romania in economic terms. At the same time, in contrast to the Visegrád States, the level of foreign direct investment (FDI) per capita is low.

The economy of Slovenia is small, open and export-oriented and experienced strong growth before the crisis, growing on average by nearly 5% between 1993 and 2008 (average annual GDP growth). The financial crisis of 2007-10 and the European sovereign-debt crisis had a significant impact on the Slovenian economy. In 2009, Slovenian GDP per capita shrank by 8%, the biggest decline in the European Union after the Baltic countries and Finland. During the economic downturn, the rise in the unemployment was especially pronounced for young people, as in many southern Europe countries (see Chapter 5) ([53]). However, after the economic recovery in Slovenia, youth unemployment is much lower and employment rates are higher than in Bulgaria, Croatia or Romania. Since 2014, the employment rate has grown significantly in all age groups (15 to 24, 25 to 49 and 50 to 64). This was particularly evident for the years 2016-17 (Knavs, S; Šlander M., 2019).

An increasing burden for the Slovenian economy has been its rapidly ageing population. It is among the European countries with the most pronounced ageing of its population; the working-age group is diminishing in spite of immigration (which is higher than in the Visegrád States) and the old age dependency ratio will double in future decades (Hergan, M.and Čelebič T., 2016, p. 3).

Like Croatia, Slovenia has quite a large share of VET students at upper secondary level (64.7% in the 2017/18 school year) (Knavs, S; Šlander M., 2019), but it differs substantially from Bulgaria, Croatia and Romania when it comes to participation in lifelong learning. Around 12% of 25 to 64 year-olds participated in lifelong learning in 2015 in Slovenia, compared to less than

([52]) In many country groupings Slovenia is classified as a central European country together with Germany, Austria, etc. See for instance Cedefop (2018b). This is understandable because of both its location and advanced economy. Due to its common history with Croatia in the Socialist Federal Republic of Yugoslavia and the fact that it is a post-communist country we discuss it here together with other CEE countries.

([53]) In 2013, the unemployment rate stood at 21.6%, twice as high as before the crisis. Over the next two years, this rate dropped significantly to 16.3%, in line with the economic recovery (Hergan and Čelebič, 2016, p. 5).

7% in most other CEE countries and less than 3% in Bulgaria, Croatia and Romania (Cedefop, 2018d) ([54]).

In Slovenia, the share of VET students at upper secondary level dropped by 13 percentage points from 72% in 1998 to 59% in 2012 (Cedefop, 2018b). However, the labour market conditions for people with ISCED level 5-8 qualifications have deteriorated since the beginning of the crisis; this has created more interest in VET and, since the recovery of the economy, demand for VET seems on the rise again (Hergan, M. and Čelebič T., 2016, p. 10). This may also explain why Slovenia is the country where a majority (60%) believes that 'people who completed vocational education at upper secondary education are more likely to find a job after their studies than people who went on to complete higher education (compared to only 40% in EU average) (Cedefop, 2017b, p. 56). In 2015 64% of young people enrolled in ISCED 3 programmes were enrolled in VET.

Broadly speaking, VET at upper secondary level in Slovenia consists of shorter and more practical vocational programmes (lasting for two or three years) leading directly to employment, and more 'theoretical' technical programmes (lasting for four years) leading to a vocational *matura* which enable access to higher vocational education and professional higher education ([55]). According to Ivancic (2008), vocational programmes leading directly to employment have a lower value and usually represent the destination for those who are unable to enter general and technical education. Enrolment in these programmes was in constant decline between 1995 and 2005. In the school year 1995, approximately 36% of those enrolled in upper secondary education participated in two and three-year VET programmes, 36% in technical programmes and 27% in general programmes. In 2005 only 21% were enrolled in VET programmes, 38% in technical programmes and 40% in general programmes (Ivancic, 2008, p. 359). This illustrates both the overall academic drift and the academic drift within VET in this period; the same pattern identified for Croatia and for the Visegrád States (Section 4.3.2). However, in the aftermath of the crisis the pendulum has swung back towards VET (and within VET to longer and more theoretical) so that, in 2017, 17%

([54]) Only Estonia has equally high shares of participation in lifelong learning which may be explained both by better developed provisions for formal adult learning, but also more investments by firms in CVET in these countries. In Slovenia VET for adults is provided in public school centres, adult education centres and other private and public institutions.

([55]) Passing one additional subject from general Matura, enables learners to enrol in some of the first cycle academic programmes (Knavs, S; Šlander M., 2019, p.24).

were enrolled in VET programmes (a further fall since 2005, despite a slight increase since 2010), 47% in technical programmes and only 35% in general programmes ([56]). This has been confirmed by a recent Cedefop survey where there seems to be a shift in terms of general social opinion, considering that 63% of respondents would recommend vocational education over general education (Makovec R. et al, 2018, p. 20). Additionally, a large majority of the respondents in Slovenia (91%) was satisfied with the general skills they developed in upper secondary education. Satisfaction was expressed by 90% of general education students and 92% of vocational education students; 82% of the respondents were satisfied with work-related skills they developed in school (the respective European average is 72%) (Makovec R. et al., 2018, p. 14).

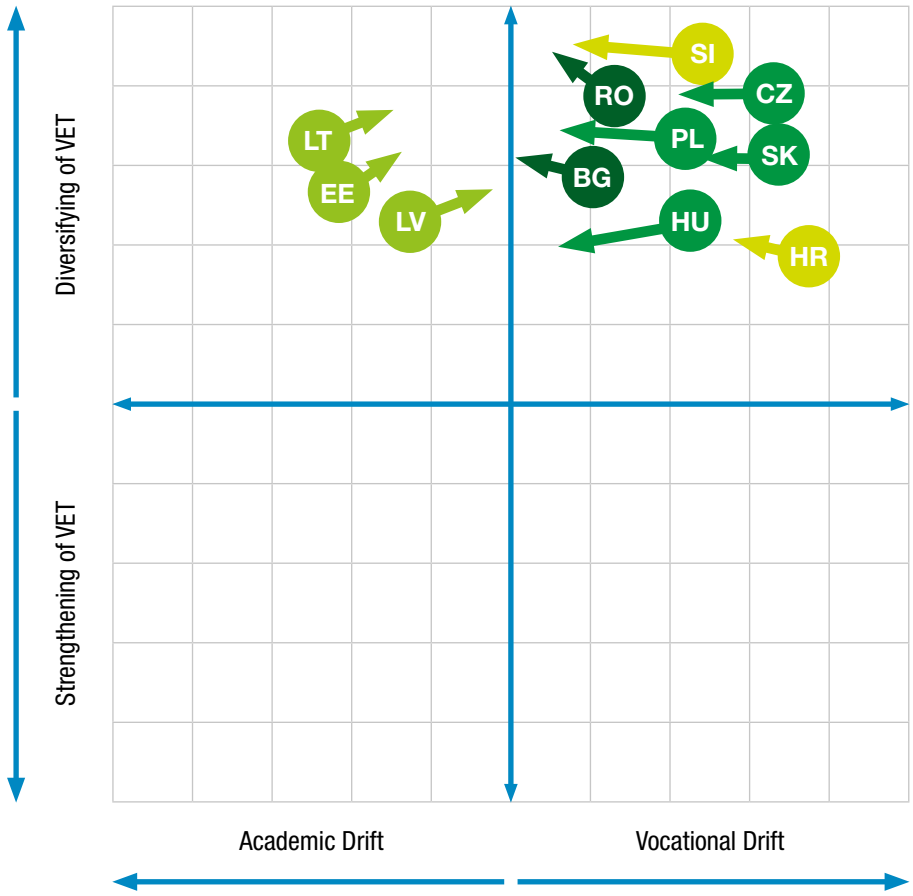
Strengthening work-based learning and practical training in the workplace has been a focus of VET policies in the past 10 years (since 2006 when the VET Act was adopted); since 2012, with renewed attention in EU policies and national developments, apprenticeship has been a policy priority for the Slovenian government and the social partners, resulting in a new law on apprenticeship (2017) (Cedefop, 2017a). In the 2018/19 school year, the pilot was extended to additional programmes and participation of new schools and companies (European Commission, 2018a).

The changes in VET at upper secondary levels should also be seen against the background of the expansion of tertiary education – not least due to the emergence of private institutions of higher education and the expansion of short, practically oriented programmes at the tertiary level (Ivancic, 2008). In Slovenia there are both professional higher education and higher vocational education programmes (short cycle) ([57]). The tertiary education sector has experienced a huge expansion since 1990, with the number of students enrolled in tertiary education almost doubling between 1995 and 2002 (Ivancic, 2008). In 2017, the level of tertiary education attainment (age 30 to 34) reached 46.4% (European Commission, 2018a).

([56]) Data for 2010/11 to 2017/18 retrieved on 3.10.2018 from the Statistical Office of the Republic of Slovenia – Demography and social statistics – Education.

([57]) Higher vocational programmes finish with a diploma exam and award the formal title of engineer; they are markedly more practical in content than other forms of higher education.

Figure 9. **Schematic representation of change in CEE countries, 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

4.4. Southern Europe

When moving attention from the central and eastern Europe countries to southern Europe and Mediterranean countries, and from newer Member States to some older Member States it should not be forgotten that some of them had also experienced dictatorships until the mid-70s: the Salazar dictatorship in Portugal and the Greek military junta until 1974 (the year of the Turkish invasion of Cyprus) and the Franco dictatorship until 1975. It was only in 1979 that the last British forces left Malta.

After democracy was restored and the countries joined the European Economic Community ([58]), stability and economic prosperity improved significantly. New infrastructure funds from the EU and growing revenues from tourism and services increased the standard of living. Portugal and Spain joined the euro in 1999, Greece in 2001. Having experienced an economic boom in preceding decades, the southern Europe countries were hit very hard by the financial crisis in 2008, resulting in all-time high debt levels and increased (youth) unemployment. In all southern Europe countries, the unemployment rate doubled or even tripled within the past decade, with the exception of Malta. In 2015 unemployment was around 12% in Italy and Portugal, and around 25% in Greece and Spain.

Southern Europe countries have seen more favourable demographic developments than the CEE countries. But rather than a declining youth population, youth unemployment has become a major issue, at least in the past decade ([59]). In 2015, youth unemployment in Cyprus and Portugal was about 30%, in Italy and Croatia around 40% and in Spain and Greece almost 50% (Cedefop, 2018d, p. 37). There is also evidence of over qualification (young higher education graduates being employed in non-graduate jobs, ibid. p. 64).

4.4.1. **Portugal and Spain**

Spain, Greece, Cyprus and Portugal can be considered non-vocational countries, because of the low level of enrolment of VET at upper secondary

([58]) Greece in 1981, Spain and Portugal in 1986, Malta and Cyprus joined the EU together with the Baltic States and Visegrád countries in 2004.

([59]) There are differences between countries. In Cyprus, the number of young people increased by almost 40% during 1995 and 2015; in contrast, the Greek youth population declined by about a third, from almost 2.5 million in 1997 to 1.7 million in 2015. Since 2010, the net migration rate in Greece has been negative and increasing every year.

level, just as in the Baltic States. Contrary to the European Union average, Spain has a polarised qualification structure with a high share of low-skilled and high-skilled, but a relatively low share of intermediate-skilled people. However, students enrolled at intermediate level (upper secondary) VET have increased in absolute numbers as well as in relation to general education. The most rapid increase in the share took place between 1998 and 1999 (from 22% to 31%) followed by a steady increase in the following years (Cedefop, 2018b). Since 2007/08, the absolute number of IVET students has increased by 55% (Sancha, I. and Gutiérrez, S., 2016). This can partly be explained by the economic crisis, in the sense that many young people were hit by unemployment and decided to go back to school as a possible way of finding a new (better) job. Before the economic crisis, many young people who left school after compulsory education found well-paid unskilled job quite easily. Despite the growth in enrolment, there are still more students (65%) who opt for high school than for the VET path (35%) in the intermediate VET cycle ([60]). In terms of increasing enrolments, vocational drift can also be observed at basic and advanced level (higher VET) in Spain.

In Portugal, the sharpest increase in the share of VET occurred during the crises between 2008 and 2009 (from 31% to 38%). This reflected the shift in political priorities. According to our survey, since 1995 the Portuguese VET system has been regarded by policy-makers with distrust, because it has still been associated with the technical teaching of the Portuguese dictatorial regime. The ensuing lack of investment in the Portuguese VET system led to decreasing enrolment of students in VET courses. To improve the situation, the New opportunities initiative (*Iniciativa novas oportunidades*) was launched in 2005 with the aim to extend vocational education to the public secondary schools and expand this offer at national level. New VET courses were launched, targeting both young people and adults. Hence, the growth in enrolments in VET at levels 3 and 4 in the past decade can be seen as a direct result of a political effort to improve VET provision in Portugal (Cedefop, 2018b). However, these developments have to been seen in the context of a wider set of policies which started already around 2000 to tackle the traditional underperformance of learners and the low level of educational attainment: elaborating adult education policies; creating a system of

([60]) Intermediate VET cycles are subject to criticism, as they are regarded as 'insufficient' qualifications for enterprises, particularly in relation to manufacturing. Therefore, many students are encouraged to go to high school and then opt for higher VET degrees.

recognition of prior learning; and developing measures to combat the high dropout rates at lower secondary level (DGERT, 2016).

Portugal and Spain are the two countries with the strongest relative increase in VET between 1995 and 2015, though starting from a low level. Only Finland showed a similarly strong vocational drift, but starting from a much higher level (see Section 4.6 on northern Europe).

Great efforts have been made in Spain in recent years to introduce and develop alternance training models, dual VET, to promote youth employment and acquisition of a vocational qualification (Renta-Davids and Fandos-Garrido, 2014). Various regulations have been passed aiming to strengthen the links between companies and VET providers, to bring them to work together and to encourage greater involvement of students in the labour market during their training period (Sancha and Gutiérrez, 2016, p. 24). Despite the political efforts dual education has remained a minority programme in Spain.

In VET at higher education levels, Spain has a unified higher education structure while Portugal has a binary one consisting of universities and polytechnics. In Spain, there are almost as many students in higher (advanced) VET (EQF level 5) as at intermediate level (EQF levels 3 and 4), and the sector has also steadily increased over the past decade. In Portugal, short-cycle VET has been marginal, but in 2014, polytechnics started post-secondary VET programmes, so-called higher professional technical programmes (*cursos técnicos superiores profissionais,* CTSP). These programmes run for four academic semesters, with 120 ECTS, award a diploma of higher professional technician, and also include on-the-job training, which takes place through an internship (lasting at least one semester and granting 30 ECTS) (DGERT, 2016, p. 20). In both countries there is some growth in professional higher education, and, for Spain, some vocational drift at this level, particularly in programmes related to manufacturing. Both countries have also opened up their IVET system to adults and are the only south European countries where 25 to 34 year-olds have higher than average rates in attaining VET qualifications during adulthood (Cedefop, 2019c). We found higher rates only in northern (Denmark, Finland and Norway) and western countries (Germany, the Netherlands and the UK). The expert questionnaire on CVET for Spain (ibid.) noted that participation of adults in formal IVET has gradually increased during the past 20 years and suggests flexible learning opportunities tailored specifically to adult learners needs (such as distance education) as one reason. Both horizontal and vertical permeability are at an average level in

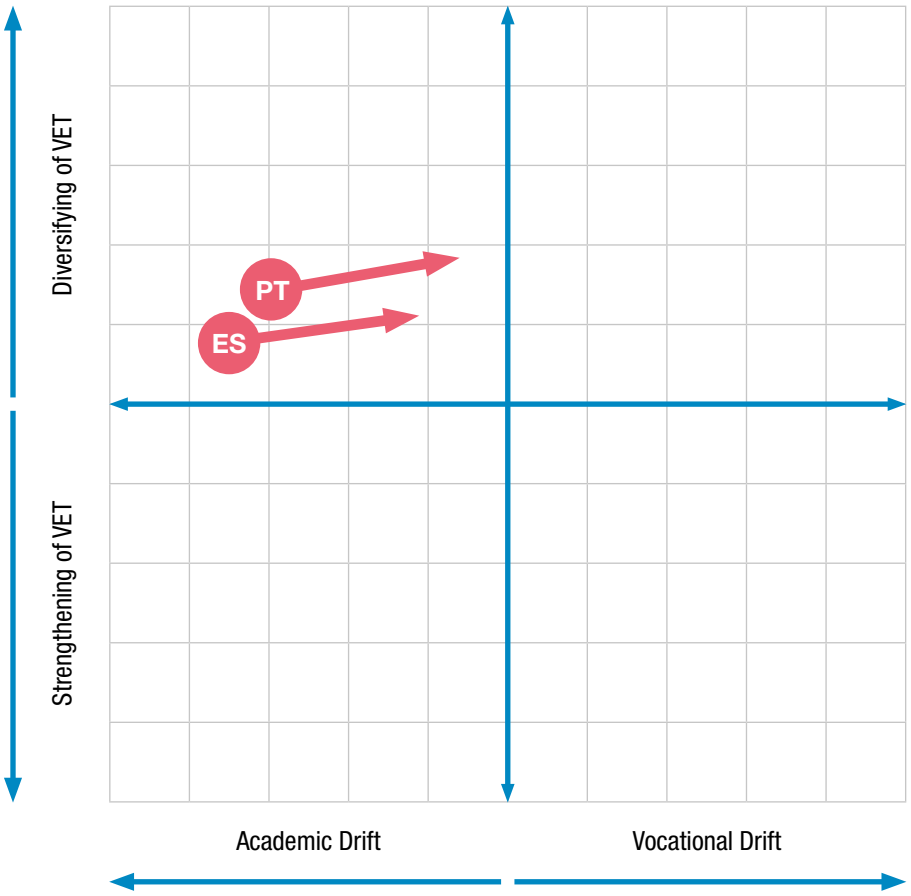
Spain and Portugal, but better than in other parts of southern Europe (ibid.). Also, the structure of provision of non-formal learning is quite diversified (not dominated by only one type of provider) and has not changed much between 2007 and 2016 according to adult education survey (AES) data.

Just as in the Baltic States, where general upper secondary education dominates, vocational education in Spain and Portugal also has no strong negative effect on educational and labour market outcomes. Although vocational upper secondary education may have a lower status compared to general education in these countries, it functions quite well, especially from a long-term perspective, in terms of sheltering their graduates from low-skilled jobs and unemployment and ensuring entry to positions in the middle of the social hierarchy (Cedefop, 2018c). However, the public perception of labour market outcomes of VET in Spain and Portugal is relatively poor (Cedefop, 2017b, p. 45), presumably due to current employment patterns. Cedefop's opinion survey also seems to illustrate the challenge of VET in times of crises. While in countries such as Denmark, the Netherlands, Finland or Sweden there is greater emphasis on being good at or interested in the subject when choosing a VET pathway, in Greece, Spain, Cyprus and Portugal there is a greater emphasis on career prospects and/or finding a job. However, this contrasts with the chance of finding a job. In the EU as a whole, 67% agree that 'vocational education allows you to find a job quickly after obtaining a qualification or diploma'. In Spain and Portugal, and also in Greece, only 40% to 45% think so (Cedefop, 2017b, p. 40). In Spain people believe it is easier to get a VET qualification, VET is seen partly as the route for less talented students, and people do not think that VET leads to well-paid jobs (Fundae, 2018, p. 17).

4.4.2. **Greece and Cyprus**

Greece has the largest economy in the south-eastern part of Europe and is also an important investor into neighbouring countries. From 2000 to 2006, GDP growth in Greece was above the Eurozone average. The subsequent great recession and debt-crises resulted in a sharp downturn and six years of economic decline. As in Greece, the Cyprus economy is open, free-market, and predominantly service-based. Since gaining independence from the United Kingdom in 1960, Cyprus has experienced strong and steady economic growth (in particular between 2000 and 2008), high employment and relatively low unemployment. However, a subsequent short downturn in 2009 due to the global recession was followed by a more

Figure 10. **Schematic representation of change in VET in Portugal and Spain 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

severe financial crisis in 2012-13. In both countries the economic decline has exacerbated the problem of youth integration into the labour market and resulted in exceptionally high levels of youth unemployment. The NEET rate in Greece doubled between 2008 and 2014, reaching almost 30%. The youth unemployment rate tripled between 2008 and 2013 (reaching almost

60%), going down to 43% in 2017. An increasing share of people at risk of poverty, increasing material deprivation and deterioration in living conditions are further consequences of the crisis and austerity policies.

In terms of demographics, conditions in Cyprus are more favourable than Greece: relatively high fertility rates and high rates of population born outside the country have resulted in old-age dependency ratio projections better than EU average. While Greece has one of the world's most rapidly ageing populations, it is estimated that the Greek population will shrink by 2.5 million people to reach 8.6 million by 2060 (Athanasouli, A. et al., 2016).

In both countries there is a strong cultural trend in favour of general secondary education followed by higher education. Family plays a significant role in encouraging and supporting young people to continue to higher education. Cyprus has the lowest share of VET students at upper secondary level in Europe (around 15%). Though Greece has double the share (around 30%), it also ranks at the lower end together with the Baltic countries. However, in Cyprus, the share of the youth population enrolled in general education at levels 3 and 4 decreased at a much higher rate than the share enrolled in VET between 1995 and 2015. According to our survey, there was a strong public perception after the financial crisis that the employment prospects of VET graduates were much better than those of tertiary education graduates. Moreover, investment in the VET sector exceeded investment in upper secondary general education (Cedefop, 2018b).

Only recently has Cyprus begun to diversify its VET provision. At upper secondary level, efforts have been made to improve what have been residual apprenticeship programmes (Cedefop, 2019d). In technical schools, practical training of students in enterprises has very recently increased. VET had not been available in Cyprus at post-secondary level before 2012 ([61]); since then, post-secondary institutes of vocational education and training have been established at the existing technical schools (two years programme, free of charge, including workplace learning of at least six weeks per year). Although still low in terms of the number of participants, these developments further underline the vocational drift and trend towards diversification in Cyprus.

([61]) Cyprus also has an unusual higher education sector, arising from the fact that large numbers of young people take bachelor and master courses abroad, especially in the UK; domestic institutions have been underdeveloped until recently and there are many providers from overseas delivering programmes on the island.

Apart from this, in Cyprus, as in most other southern Europe countries, vocational training is also understood as employment policy and extensively available as non-formal CVET for the employed, the unemployed, other groups at risk of exclusion from the labour market and adults in general, through a mixture of public and private provision such as colleges, training institutions, consultancy firms and enterprises. This is often associated with a negative image of VET but, in the case of Cyprus, the contrary seems to be the case. Labour market outcomes of VET are perceived positively by the public; and those who participate in vocational education are overall more satisfied than participants in general education regarding the skills they acquired, particularly work-related skills, and they believe that vocational education allows them to find a job quickly after obtaining a qualification (Korelli, 2018, p. 13).

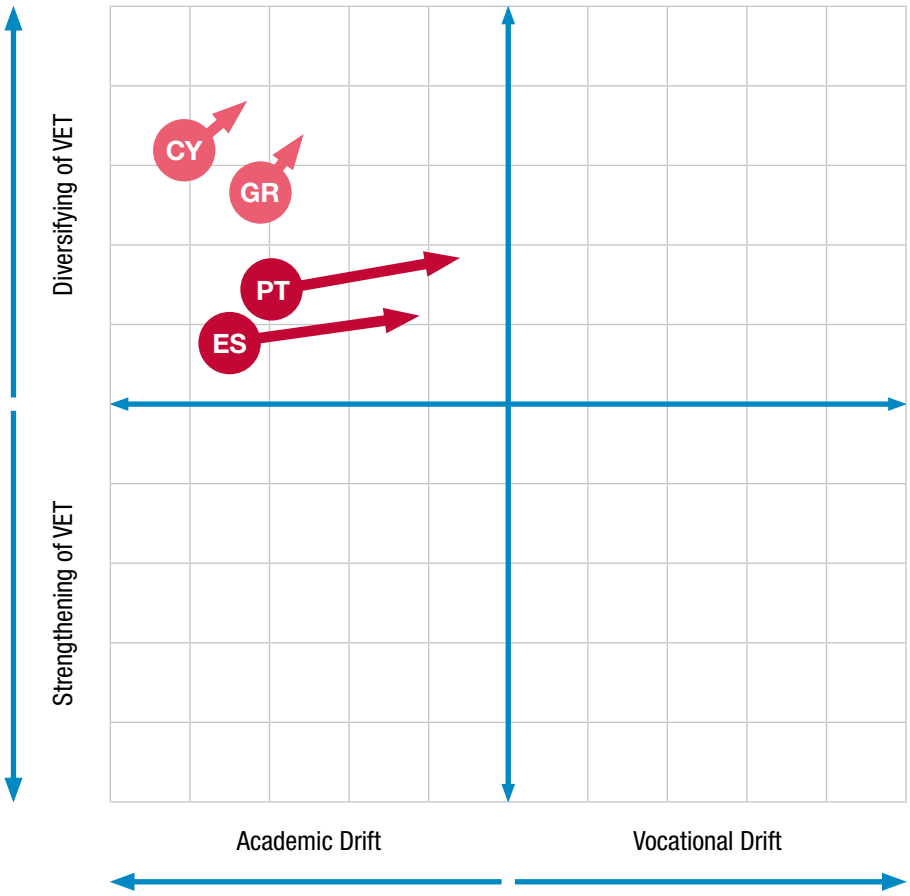
In Greece, the numbers of students in both upper secondary VET and general education have decreased since 1995 due to shrinking youth cohorts. Despite some up and downs in VET enrolment at this level, the overall share of VET has been stable comparing 1995 to 2015. Although not too obvious, there seems a tendency within VET towards vocational upper secondary schools (EPAL) which give access to higher education institutes, while apprenticeship schools (EPAS) have shown a steady fall until 2014.

However, as in Cyprus, VET in Greece seems to be on the rise in recent years, despite budgetary constraints, due to a new lifelong learning policy strongly promoting VET. In the period before 2010, VET was oriented towards targeting EU funds and fragmented. Since then a series of reforms has brought the two different subsystems of initial VET and continuing VET together under the national integrated strategy on lifelong learning. The strategy aims at modernising upper secondary VET, strengthening its work-based component within the school-based system and by apprenticeships; it is also aimed at better involvement of employers in the VET system (Galata, 2018). These reforms are not yet clearly visible in numbers, but it seems to be just a matter of time that the lifelong learning strategies in Greece and Cyprus (just as in Latvia, Portugal and Romania) will entail a substantially different conception of VET as part of lifelong learning as identified for France and Finland (Cedefop, 2019c).

4.4.3. **Italy and Malta**

Similar to other southern Europe countries, Malta has experienced a remarkable growth in GDP per capita over several decades. But, different

Figure 11. **Schematic representation of change in VET in Greece, Spain, Cyprus and Portugal, 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

to the other southern countries discussed above, it was not hit that hard by the global recession. In terms of real GDP growth, Malta has consistently outperformed the European Union and Euro Area averages every year since 2007. Between 2007 and 2017 the Maltese economy grew cumulatively by around 35%, compared 5% in the Euro Area and 8% in the wider

European Union. Household consumption and exports have been the main growth engines. Over the past decade there has been a shift away from manufacturing activities and a growing focus on services. Contrary to all other southern Europe countries, the unemployment rate has gone down since the crisis and is currently one of the lowest in Europe. Consequently, labour market pressures have increased as skilled labour shortages have become more widespread, despite immigration ([62]), and real earnings growth has accelerated. Youth unemployment has steadily decreased since 2000, and is equally low (around 5%). Being the smallest country in the European Union, such deviations from its larger southern counterparts may not be surprising. Still, Malta is an interesting case for VET. While it has much more favourable economic conditions, many education indicators are quite comparable to the southern countries, such as a low participation in lifelong learning, a high rate of early school leavers, a low share of VET at upper secondary level and low share of students in work-based learning.

However, vocational education and training (VET) has become an increasingly popular option for learners after compulsory education, with participation more than tripling since 2000. In 2015 VET exceeded participation in academic tracks for the first time (Cedefop, 2017e, p. 16). How does that finding fit the international picture which shows Malta close to Cyprus and among the countries having the lowest share of VET at upper secondary level in Europe? In Malta upper secondary education is considered education leading to Malta qualifications framework (MQF) level 3 (ISCED 3) and this includes (compulsory) secondary schools up to the age of 16. Following the completion of compulsory education, students may choose to continue their studies either in academic or vocational 'further education' at MQF levels 1 to 4. Consequently, students in their last two years in secondary schools (Junior Lyceum) at the age of 14 and 15 are included in the statistics ([63]).

([62]) Between 2002 and end-2015, the number of (full- and part-time) employed foreign nationals increased sevenfold and their share in total employment grew from 2.5% to 13.8% (Cedefop, 2017e, p. 14)

([63]) Taking data for 2013 (Official ISCED Mapping Malta) the share of VET including 14 and 15 year-olds from secondary education is 17%, taking only post-compulsory education (above 16), the share would be 37% (for ISCED level 3) and 57% (for ISCED level 3+4). Correcting the data this way clearly shows much higher shares for VET in Malta than in Cyprus, but also more than in Greece. Looking both at ISCED 3 and 4 the share is also clear above Spain and Portugal (roughly 46% in 2013 according to ISCED Mapping).

A real idea of the relationship between academic and vocational education in Malta comes more accurately from comparing enrolment in 'further education' (post compulsory education) in total and by age ([64]). Overall enrolment in vocational further education (all ages from 17 onwards, part-time and full-time) has tripled between 2000 and 2015 (from roughly 2 600 to 8 200 students) and the share of VET in relation to academic 'further education' has increased from one third to a half, marking a clear vocational drift. At the age of 17 most students in 'further education' opted for academically oriented programmes, but at age 19, more students are in vocationally oriented programmes.

Corresponding to this vocational drift, work-based learning has also been strengthened. Apprenticeships have expanded to new sectors and participation has increased due to reform of apprenticeships launched in 2014 which merged off-the-job education and on-the-job learning in a single apprenticeship scheme, helping place more emphasis on quality. It also strengthened the role of employers in assessment and set the stage for fully implementing a three-tier framework comprising work placements (EQF levels 1-4), apprenticeships (EQF levels 3-4) and internships (EQF level 5 and above) (Cedefop, 2017e, p. 28).

The modernisation of VET in Malta and the vocational drift are also reflected in other data.

According to a report of the European Commission, employment rates of VET graduates at intermediate level (ISCED 3+4) are highest in Europe (outperforming even Denmark, Germany, the Netherlands and Austria) (European Commission, 2015, p. 64). However, a reason for this might be the tight labour market in Malta and not, as the report points out, that 'only very few students take initial VET courses'. Cedefop's opinion survey also shows Malta at the top of a ranking of VET image in relation to a labour market outcomes index (measured by four items) before Germany and Austria (Cedefop, 2017b, p. 45). Further, respondents in Malta (89%) and Finland (84%) are most likely to say that vocational education has a positive image (ibid. p. 32). Given the favourable economic conditions and the VET developments described above, it is also not surprising that in Cefefop's survey *Changing VET 2035* respondents from Malta showed much

([64]) Vocational further education is predominantly provided by two State-run institutions, the Malta College of Arts, Science and Technology (MCAST), and the Institute of Tourism Studies (ITS). They provide secondary, post-secondary and tertiary VET at ISCED level 2-7.

higher rates of agreement than the rest of southern Europe countries for the following items (referring to the past two decades): increasing work-based elements, growth of VET at higher levels, shift towards learning outcome, increasing influence of employers. Also, falling training places is not an issue, as it seems to be for most other southern Europe countries (Chapter 5). All this makes Malta an interesting case when looking for (local or regional) examples of VET modernisation.

Italy ([65]), the third largest national economy in the Eurozone, has been facing economic and demographic developments similar to most other southern Europe countries, such as being hit particularly hard by the crises, a severe rise in public debt, a declining youth population and increasing (youth) unemployment ([66]). But in terms of VET, Italy clearly differs from the other non-vocational southern Europe countries and its trajectory resembles more that of the Visegrád countries. The share of VET students at upper secondary level has decreased from around 72% in 1995 to 56% in 2015 ([67]), mainly due to a decline in regional VET ([68]) in the 1990s which was not able to cope effectively with de-industrialisation The meaning of 'technological challenge' for the regional initial VET system has always been peculiar considering the prevalence of micro and small companies in the Italian economic system. In these companies, with some exceptions, have a tendency to informal and non-strategic innovation. Italy also has a longstanding weakness in terms of both dedicated funding and public policies, in developing and supporting technological innovation. The cases of worldwide manufacturing companies that excel in innovation are using private investment provided by the companies themselves. Only in recent years have dedicated instruments been put in place by the government: national programmes supporting innovation, funding for innovation in SMEs, Industry 4.0 programme, Italian research and young talents programmes.

([65]) Italy has one of the biggest VET learner populations at ISCED 3 in 2015 among EU-28 countries.

([66]) When considering average figures in Italy the considerable north-south divide has always to be taken into account: the average GDP per capita in northern and central Italy significantly exceeds the EU average, while some regions and provinces in southern Italy are dramatically below.

([67]) Figures for 1995 taken from OECD's Education at a glance (1997) may not be fully comparable due to changes in ISCED. However, comparable figures for a shorter time period also indicate a decline of VET from 64% in 1999 to 59% in 2012.

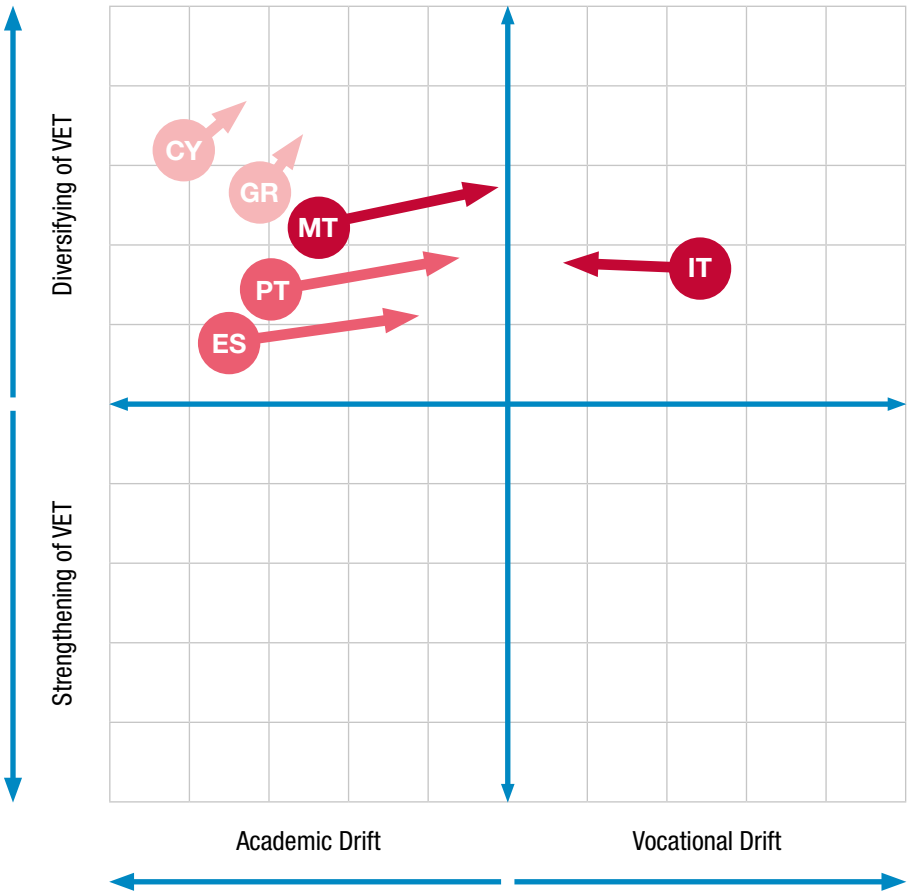
([68]) The Italian upper secondary level is divided into national five-year programmes (which include the two last years of compulsory education) in general schools, technical schools and vocational schools, and regional vocational training courses lasting for three or four (that is three plus one) years.

Another factor with a possible negative impact on the share of VET students at upper secondary level is the reduction in funding dedicated to regional initial VET: the most recent data refer to 2014 and show a 20% reduction in allocated funding (mainly due to the reduction in national and EU funding). This reduction resulted in the closure of many training institutions, especially in the less affluent and prosperous areas of Italy, which caused additional damage to the young people who live in those areas (ibid.).

The regional tier of government plays an important role in VET in Italy and regional VET has seen several reforms in the past 20 years, often spurred by EU initiatives. These changes have led to a new role for VET which has moved from being a part of active labour market policy to become part of the national education and training system, as students began to pursue learning objectives on top of employment ones. Reforms also led to a broader provision of training within regional VET, involving both public and private providers. This horizontal expansion was coupled with a vertical one, which resulted in students spending more time within the system, and a gradual activation of a post-secondary system which allows students to reach a further qualification level outside the university system (ibid). All reforms have been oriented towards giving initial regional vocational training a similar image and formal recognition to other education pathways implemented within the national education system.

A demographic issue affecting regional initial VET is the growing number of young immigrants – mostly second generation – entering upper secondary education with the obligation, in accordance to the Italian legislation, to stay in the system until the achievement of a three-year regional VET certificate or to 18-years-of age (ibid.). It is not clear to what extent the vertical diversification and shift towards post-secondary VET (which has also been confirmed by Cedefop's survey *Changing VET 2035* as shown in Chapter 5) has compensated for the academic drift at upper secondary level. The sparse data seem to indicate that this has not been the case. Also, vocational drift within higher education seems to be modest in Italy (Cedefop, 2019a). Comparing vocational drift in Malta with academic drift in Italy, the difference in policy and funding are striking: a clear policy, modernised VET structures and increased funding for VET in Malta, and a back-and-forth and 'repair' policy accompanied by reductions in budgets available at regional level for IVET in Italy.

Figure 12. **Schematic representation of change in VET in southern Europe, 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

4.5. Western Europe

4.5.1. D-A-CH region: Austria, Germany and Switzerland ([69])

The dual systems of the German-speaking countries ([70]) (as well as of Denmark and the Netherlands) have been highly praised in the aftermath of the economic crises for being able to counter youth unemployment. They are expected to be less prone to problems of educational mismatch early in someone's career, with firms expected to make timely adaptations to their training curricula to changes in skills demanded. Further, by establishing an early contact with firms and work experience, young people enter faster into the labour market – by either remaining in the same firm or gaining easier access to further employment – and learn about the types of jobs and occupations that they may prefer (Eichhorst et al., 2012, p. 14f.) This has led to a renaissance of apprenticeship training in the post-crises years and European policies promoting them, particularly in countries with residual apprenticeship systems despite criticisms regarding the likelihood of being able to transfer the dual system successfully (Gessler, Fuchs and Pilz, 2018; Valiente and Scandurra, 2017). Also, these developments seem to have made us forget about the crisis of the dual system in the 1990s (Baethge, Baethge-Kinsky and Kupka, 1998; Heidenreich, 1998) and the terrain it has lost since then.

The apprenticeship systems in Austria, Germany and Switzerland were fully incorporated into their respective education systems by the end of the 1960s, having already been part of the economic system. In the 1980s the commonalities between countries in terms of VET were striking. Very high levels of enrolment in comparison to general education and school-based VET, and similarities in the number and content of occupational profiles as well as in governance (involvement of social partners) has made it easy to put them in a box with the label 'dual system countries'. But despite similar challenges such as globalisation, Europeanisation or the trend towards higher education, the countries seem to have taken different trajectories since then.

([69]) Switzerland is not formally part of this study but has been added here to illustrate better the different trajectories of so-called dual system countries.

([70]) We refer in the following to the D-A-CH region acknowledging that there are also other official languages in these countries and that there are German speaking communities in Europe outside the D-A-CH region.

In Germany, VET's share of enrolments at upper secondary level fell steadily over the 1995-2015 period (despite the net increase in enrolments in VET) from more than two thirds to less than half of all enrolments, illustrating the academic drift at this level. At the same time the share of work-based learning (relative enrolment in apprenticeship) increased. In Austria and Switzerland, the share of VET at upper secondary level slightly increased. In Switzerland this was achieved by a renewal of the Training Act and integrating all (non-academic) occupations into the apprenticeship system, thereby expanding the nationally regulated apprenticeship from crafts, industry and trade occupations to occupations in the health, social, arts and agricultural sectors. A side effect of this change was an overall more balanced gender structure within the apprenticeship system, though strong gender segregation by occupation has remained. In contrast in Austria there has been a significant fall in enrolment in apprenticeship, but this has been offset by an increase in enrolment in school-based VET. Already in 2000 there were almost as many students enrolled in school-based VET as in work-based VET; since 2010, school-based VET in Austria has begun to outperform work-based VET in terms of student numbers ([71]). Apart from reductions in training places, a main reason for the shift to school-based VET in Austria can be found in student choices: a double-qualification as offered by VET colleges providing both access to the labour market and higher education is apparently more attractive in times of uncertainty ([72]).

Focusing on upper secondary level we find strong academic drift in Germany for the past two decades, but not in Austria or Switzerland. There is a strong trend towards school-based VET in Austria, and an opposite trend in Germany and Switzerland (Ebner and Nikolai, 2011). This may be explained by the exceptional case of VET colleges in Austria, which have no real equivalent in Germany. Comparable institutions in Switzerland (and Finland) were upgraded to universities of applied sciences in the 1990s, while in Austria universities of applied sciences were founded, starting from scratch, at the same time. In this way universities of applied sciences in Austria have been

([71]) At least since 2000 it would be more appropriate to speak of Austria as a hybrid-system country with equally strong work-based and school-based tracks rather than a dual system country (compare also Cedefop, 2018c).

([72]) Tracer data for Austria show that a half year after graduation almost all graduates from academic secondary schools are enrolled at university, while most apprentices are in jobs. For VET college graduates (school-based VET) the picture is mixed: half are in jobs, the rest in higher education (more at university of applied sciences than traditional universities) underlining the nature of double qualifications (Statistik Austria, 2015).

put on the level above school-based VET and thus further raised the value of the school-based track ([73]), instead of addressing graduates from the dual system as in Switzerland. Direct transition from apprenticeship to universities of applied sciences is therefore low in Austria, but substantial in Switzerland. Alongside the establishment of universities of applied sciences, both countries also introduced in the 1990s a sort of 'vocational *matura*/ baccalaureate' ([74]) for graduates of the apprenticeship system which provides access to higher education, ending the previous dead-end of apprenticeship; this system change has not been reproduced in Germany. Every tenth apprentice in Austria and every fifth apprentice in Switzerland uses this option, underlining the trend towards double qualifications and the relevance of vertical permeability.

In Switzerland (as in Germany) there is strong consensus across political parties and the social partners to strengthen the dual system; after some major reforms in the 1970s it has continuously been professionalised and made more attractive, in particular since 2000. A higher VET sector has been established that allows for access to professional education and training at tertiary level (in addition to the binary-structured higher education sector); this provides new career paths channelled into tertiary education. Further, obligatory revision of occupation profiles every five years has been introduced, and more emphasis has been put on general subjects and industry training courses as third training places. General stratification of the dual system has been taking place: access to higher education was facilitated by introducing a model of VET integrating the vocational baccalaureate, which allows apprentices to begin their preparation for the higher education entrance exams during their apprenticeship (Scharnhorst and Kammermann, 2017); and two-year apprenticeships for youth with low academic skills have been established and apprentices not finding an apprenticeship place at a company can attend a pre-VET programme, which can be school-based or combine school- and work-based training. This is further emphasised by the recent establishment of the Swiss qualifications framework which

([73]) The higher value of VET colleges in Austria is also acknowledged by a reclassification of the programme from ISCED97 to ISCED11. In ISCED 97 the programme was classified as level 4. In the new ISCED classification the first three years of the five-year programme of VET colleges are classified as level 3, while the last two years as level 5 (NQF/EQF level 5). Consequently, parts of the programme are considered tertiary education in international statistics, while clearly perceived as upper secondary by the public and in official national figures. The jump from level 3 to level 5 from the third year to the fourth year will also go unrecognised by the students enrolled as there is no particular interim examination or certificate they receive besides the annual report.

([74]) *Berufsmaturiä* in Switzerland and *Berufsreifeprüfung* in Austria.

distinguishes between a vocational framework with eight levels and a higher education framework with three levels corresponding to three upper levels of the vocational one. Austria, in contrast, only distinguishes between VET and higher education at the upper levels, while Germany has introduced one comprehensive framework (Baumeler and Engelage, 2017).

In contrast to Switzerland, Austria lacks a comprehensive vision and strategy for VET. There has been less consensus on how to improve the VET system, and different governance models and administration of school-based VET and work-based VET prevail. Despite a lack of coordination between VET subsectors and absence of a common VET policy, there have been incremental improvements to VET in the shadow of other major debates in education (including early selection, autonomy and financing of universities) and vocational drift at upper secondary level has happened more or less unrecognised. VET colleges (the major part of school-based VET) have become more important in providing applicants for higher education than the gymnasiums; they have achieved a reclassification in ISCED at a higher level and in the national qualifications framework and they have been the first to establish a system of quality management. As in Switzerland, stratification of the dual system has taken place: access to higher education was facilitated by introducing the *Lehre mit Matura* model, which allows apprentices to begin their preparation for the higher education entrance exams during their apprenticeship; and shortened or simplified apprenticeships (only parts of a profession are learned) for young people with learning difficulties and/or disabilities have been established and apprentices not finding an apprenticeship place at a company have been put into so-called supra-company apprenticeships where learning takes place in workshops and apprentice wages are paid by the public employment service.

Austria's active labour market policy use to sustain the apprenticeship systems marks a sharp contrast to Germany and Switzerland; the apprenticeship system is explicitly used by labour market policy to avoid youth unemployment ([75]). The drawback of this, and the simple existence

([75]) This is confirmed by the expert survey presented in Chapter 5. Respondents from Austria were among those who strongly confirmed the statement that the (current) purpose of VET is 'to combat youth unemployment and/or foster economic growth'. Also, Cedefop's opinion survey data seem to point in this direction, at least as interpreted by an Austrian VET expert: 'VET is in general seen as having a major positive role in Austria: whether as a contribution to strengthening the national economy, as an influential factor towards reducing unemployment or also as a way to tackle social exclusion. This does come slightly as a surprise as Austria, at least in an international comparison, boasts very low unemployment rates' (Schmid 2018, p. 26).

of the higher VET colleges, fosters a hierarchy within VET in which the apprenticeship system sits at the lower end in Austria, despite increased vertical permeability. Consequently, a competition between the dual system and higher education (as can be seen from the German discourse on academisation) or between apprenticeship training and the gymnasium (general education), as in Switzerland, is not comprehensible in Austria.

The overall lower prestige of apprentices in Austria (notwithstanding exceptions for certain occupations in the stratified spectrum) is also manifested by lower average apprentice ages (compared to Germany and Switzerland), and the fact that quite a number of graduates from gymnasiums and early leavers from universities in Germany begin an apprenticeship; this is rare in Austria. In contrast to Austria, Germany has not integrated those young people who cannot find an apprenticeship place into the dual system by replacing the company-based learning with learning in workshops to provide them with the same skilled worker qualification. Instead Germany 'parks' them in the waiting queue of the so-called transition system. In terms of numbers, this target group has been much larger in Germany from the start (around 20%, compared to less than 10% of all apprentices in Austria in the early 2000s) ([76]). it is not only the overall VET systems of the German-speaking countries, but also their dual systems that seem to have drifted apart since the 1980s.

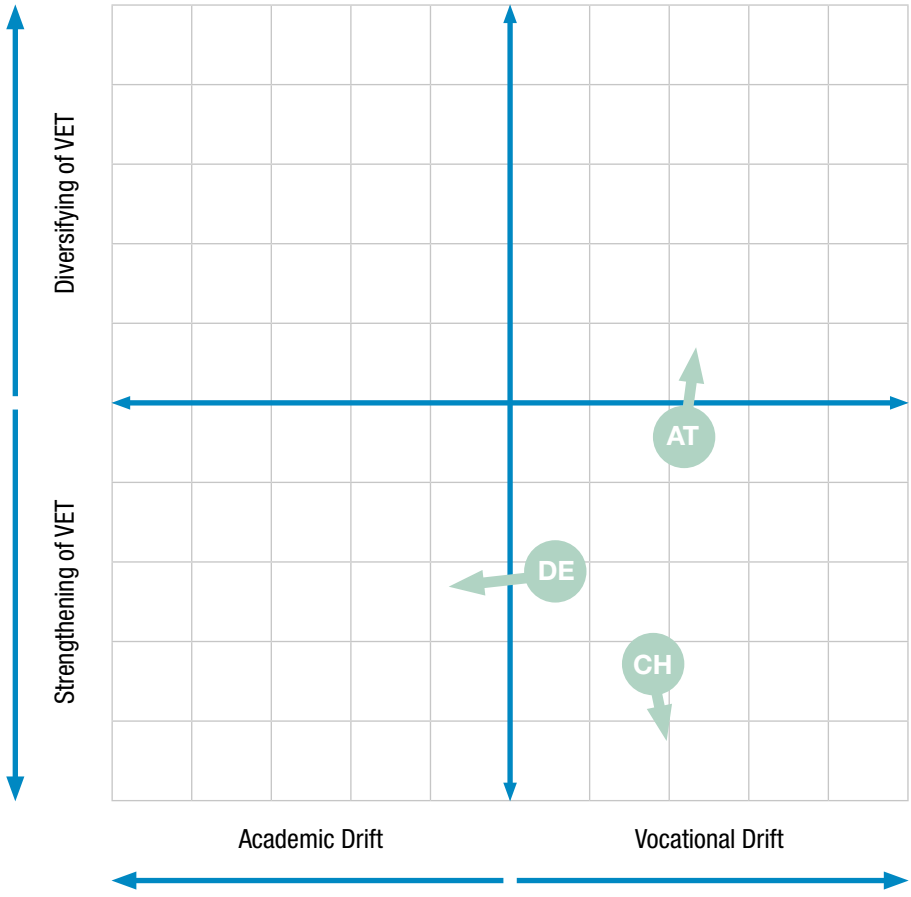
In Germany, the increasing preference of young people for higher education and the significant increase in the share of people who graduated from universities was accompanied by a steady reduction in training places offered by firms. However, this seems to be less a question of firms changing their recruitment pattern than a result of structural changes (Grollmann, 2018). There is anecdotal evidence that some firms prefer dual study programmes in higher education in commercial occupations, while in manufacturing they continue to rely on the traditional dual system ([77]). Also, the liberalisation of the labour market of the past 20 years has apparently not (yet) produced significant changes in firms' recruitment and training policies. Further, digitalisation does not seem to have been a major driver of further academisation in opposition to a strong vocational education system.

([76]) Due to changed demographics and economic growth the group has started to decrease in both countries.

([77]) Hubert Ertl, Head of Research at Federal Institute for Vocational Education and Training (BIBB) at a workshop during the Austrian conference for vocational education research, 5 July 2018.

The two major issues that are likely to continue to have a longer-term effect on the VET system in Germany are increased coordinated immigration, as a reaction to skill shortages, and the orientations of individuals and families towards higher education. These two may even reinforce each other (Grollmann, 2018).

Figure 13. **Schematic representation of change in VET in German-speaking countries 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

4.5.2. **Benelux and France**

The treaties for economic cooperation of the Benelux Union, founded at the end of World War II, have become less prominent with advent of the European Union, but political and cultural cooperation between Belgium, the Netherlands and Luxembourg are still strong. Like the German-speaking countries, the Benelux countries show strong economic and labour market performance where VET is relatively important. In all three countries the share of VET at upper secondary level was around two thirds in the mid-1990s, showing a modest fall in Luxembourg and some increase in Belgium and the Netherlands between 1998 and 2012 (Cedefop, 2018b). Only the Netherlands has higher rates of work-based learning at upper secondary level (roughly one third); in Luxembourg and Belgium respectively, only around 20% and less than 10% of students are enrolled in work-based learning according to Eurostat data. This depicts dominating school-based VET systems with general academic and vocational provision in different types of dedicated upper secondary institutions, with apprenticeships representing residual systems just as in the Visegrád States.

Looking at the key indicator used as a starting point, the position and trajectory of the Netherlands seems close to Austria (or Austria comes closer to the Netherlands than to Germany and Switzerland). Both Austria and the Netherlands have equally high shares of IVET, which slightly increased over the years due to increases in school-based VET at the expense of work-based learning (Broek, 2018; Smulders et al. 2016) ([78]). However, this similarity in indicators should not downplay important differences in the characteristics of the systems. In the Netherlands, major reform in the mid-1990s has turned the previously fragmented VET provisions into a well-structured and comprehensive VET system with a common governance structure; this has overcome the institutional divide between work-based and school-based education which prevails in Austria (Section 4.5.1).

Before the 1990s, there were many small sector-specific schools and secondary VET did not exist as such. The VET landscape at that time reflected the pillars (*verzuiling*) in Dutch society where each (based on religious orientation) had its own newspaper, church, political party, and

([78]) Within five years (2011 to 2015) the share of work-based learning (WBL) decreased from 30% to 20%, which could be a result of the economic recession. 'However, more structural reasons like upward mobility and growing preferences from youngsters and employers for school-based education, could not be excluded' (Smulders et al. 2016, p. 31) referring to Schipperheyn et al. (2016).

education system. In the 1980s and 1990s, under the pressure of government regulation and funding systems, the small schools started to merge into larger regional VET colleges and the higher-level education programmes of these schools were merged into the higher VET schools which became universities of applied sciences. At the beginning of the 1990s, there was still a clear distinction between secondary VET, which provided the school-based pathway and was fully funded by the government, and the apprenticeship pathway, which provided work-based training under the responsibility of companies and only partially funded by government. With the introduction of the Vocational education Act in 1996, hundreds of vocational training centres were merged to form the present regional training centres (ROC). Besides the merging of institutions, the Vocational education Act covered other important characteristics of the Dutch VET system which differs substantially from the Austrian situation: a coherent national qualification structure for all vocational education courses, in which employers are involved on a sector-by-sector basis to define learning outcomes; a high level of autonomy for VET institutions to organise VET ([79]); and the consolidation of two pathways, the school-based VET and work-based training, in one common system (Broek, 2018).

These changes have resulted in reduced ownership by employers and more State influence (as visible also in Switzerland). But, despite employers' diminishing influence, VET provision continues to be organised in close collaboration with the labour market and there are numerous feedback-loops between VET and employers to keep the system sufficiently responsive (ibid).

VET at higher level is more elaborated and dates further back than, for instance, in Austria or Finland. As early as the 1960s, colleges for higher professional education were brought under the same legal framework as universities. In 1986, they were legally acknowledged as a higher education subsector alongside the university sector. There are also more students enrolled in professional higher education than in traditional research universities (while in Austria it is roughly a quarter of all students) and the sector has constantly grown (Cedefop, 2019a). The comprehensive provision of professional higher education and clear pathways from lower to VET

([79]) In our expert survey we did not find any preferences as regards autonomy when looking at the EU average. However, several countries, among them the Netherlands and Finland, showed a preference for vocational education and training characterised by more local decision-making and autonomy (Chapter 5).

programmes at higher level may be one reason why the Netherlands show rates of VET graduates continuing their studies in higher education that are much above the EU average; in Austria and Luxemburg it is considerably below average (Cedefop, 2019c).

The share of foreign citizens in Luxembourg has more than doubled in the past 25 years; 47% of the country's population were born in another country, which is exceptionally high for the European Union (Cedefop, 2018d, p. 48); it can be assumed they are not from neighbouring countries. In the first half of the 1960s, most of the immigrants came from Italy. Since then the immigrant population from Portugal has rapidly increased to become the largest in the country (around 16% in 2016). This is worth mentioning because Portuguese learners are much more likely to opt for vocational and technical programmes at upper secondary level (88%) than Luxembourgers (58%, in 2014/15) (INFPC, 2016, p. 13) ([80]).

For a small country, Luxembourg has a fairly differentiated VET system covering EQF level 2 to 5 and offering school-based and work-based programmes at upper secondary level. A major VET reform of 2008 was implemented between 2010 and 2014 which aimed at further strengthening the links between VET and the labour market and focused on competence-based and modular qualifications. Following the reform, learners can also move between general and vocational (and technical) secondary tracks. Over the past couple of years the numbers of students in the more practical, work-based and shorter vocational programmes at EQF levels 2 and 3 (three-year programmes leading to occupations at the level of semi-skilled and skilled workers) have fallen, while they have increased in the four- to five-year technical programmes (at EQF level 4, leading to occupations at the level of technicians and professionals) (INFPC, 2016). This pattern, described in more detail for the Visegrád States (Section 4.3.2), is also visible in western Europe as seen in Luxembourg, the Netherlands and Austria shows.

Compared to Luxembourg and the Netherlands, Belgium has a lower employment rate, higher unemployment, particularly higher youth unemployment, and participation in lifelong learning is below the EU average (in Luxembourg and the Netherlands it is above) (Cedefop, 2018d). The attainment of vocational upper secondary education during adulthood and the participation of VET graduates in non-formal education and training is lower in Belgium than in the other two countries. Access to higher education

([80]) Roughly a third of VET learners are Portuguese.

is average and well below the Netherlands (Cedefop 2019c). These features seem to be partly reflected in public opinion: the public image of VET in Belgium as measured by Cedefop is quite negative and a clear majority (90%, the highest in Europe) agree that students with low grades are directed towards vocational education; only 26% agree with the statement that it is easy to continue into higher education such as university after VET at upper secondary education (again the lowest in Europe, compared to values above 60% in the Baltic States) (Cedefop, 2017b).

However, there are large differences among the regions and language communities in statistical indicators in Belgium, and it is difficult to draw any firm conclusions without going into the complexity of VET governance caused by the division of responsibilities between the regions. As we cannot go into this level of detail here, we pick out a few interesting changes instead which show the sort of straightening up of historical fragmentation in VET and examples of new forms of work-based learning in higher education.

Until recently, in Wallonia there were two different apprenticeship schemes. One was developed by professional associations and small-medium enterprise unions and originated from traditional craftsmanship. The other was introduced as part of the law of 1983 on compulsory schooling: the age of compulsory education was raised from 14 to 18. In the school year 1984/85, the first CEFA (*Centre d'Education et de Formation en Alternance*) were opened for students aged 15 or more who wanted to follow part-time schooling. The implicit purpose was to provide a more vocationally oriented education to all young people who were at risk of early leaving. In 2008 work started to harmonise the two tracks and a full overhaul of the two schemes began in the school year 2015/16 to achieve a unique apprentice status, a common apprenticeship contract (*contrat d'alternance*) and equal conditions for all businesses.

VET at higher education levels in Belgium is provided in the form of professionally oriented bachelor programmes, which last three years and are offered in Flanders at university colleges and in Wallonia by *Hautes Écoles*. As in the Netherlands, a larger share of bachelor students is enrolled in professional higher education than in traditional university programmes. In Wallonia, in September 2016, a new decree reinforced dual bachelor and master training programmes. In the Germany-speaking part of the country, dual bachelor training was introduced in financial services and accounting in 2011. The programme combines two to three days of work-based learning

in an enterprise and learning at a higher education institute (Allinckx and Monico, 2016).

As in the rest of Europe, France's population is ageing. But due to a high fertility rate (only Ireland, Sweden and the United Kingdom show a similar high fertility rate) and net migration, ageing is less dramatic than in other European countries and the population has increased. Unemployment and youth unemployment have been, and still are, higher than in other western countries. In contrast participation in lifelong learning is higher in France (as in Luxembourg and the Netherlands) than, for instance, in the German-speaking countries and seems to be catching up with the Nordic countries.

Lifelong learning has become a major policy objective in France over the past couple of years ([81]). It covers all ages, all levels, includes school-based VET and apprenticeships and is underpinned by a scheme that allows all qualifications (developed by the State) to be accessed through validation of work experience (*validation des acquis de l'expérience*, VAE). A decoupling of programmes, modes of learning and qualifications is more pronounced in France than in other countries and poses challenges to enrolment statistics (see below in this section).

Since the mid-1980s, successive governments have adopted measures to make VET more attractive and improve its effectiveness, providing new skills required by employers in a fast-changing economy and society. Several main changes took place: first, the creation of the vocational baccalaureate (*baccalauréat professionnel* or short: *bac pro*) in 1985, a decade before the introduction of a similar option in Austria and Switzerland (Section 4.5.1); second, in 1993 and 2009 laws were passed giving more power to the regions; third, the possibility to acquire qualifications at EQF levels 4, 5, 6 and 7 (including higher education) through apprenticeships had already started in 1990 (Rouvrais, Remaud, and Saveuze, 2017); fourth, the creation of the *licence professionnelle* (vocational bachelor) after three years and professional masters after five years of higher education (Powell et al., 2012; L. Powell and McGrath, 2014); and finally, another significant change over the past 20 years is seen in learning outcomes orientation, modularisation and a more individualised pedagogy (Michel, 2018).

([81]) Since 2009, every working person has a right to a professional qualification and may choose a training course that enables him/her to progress in career by at least one level, by acquiring a qualification corresponding to the short- or medium-term needs of the economy (Centre Inffo, 2016, p. 15).

The introduction of the bac pro has considerably increased the attractiveness of upper secondary VET, because it offers certification at a higher level (EQF4), and has created opportunities to continue studying in higher education. In 2009, the bac pro was further reformed to allow a faster track (three years instead of four years) and to make it comparable to the technological and the general baccalauréat ([82]).

The success of the bac pro is also obvious in numbers. VET at upper secondary level is either offered as a two-year course, leading to a *certificat d'aptitude professionnelle* (CAP) which corresponds to level EQF3, or to a three-year education preparing for the bac pro, which is classified at level EQF4. Given the structural changes in IVET and the differences between national and international statistics, enrolment data for France are not easy to interpret (Cedefop, 2018b). On the whole, the total enrolment of students in upper secondary IVET decreased slightly between 1995 and 2015. For a comparison of the changes within VET, data about completion of qualifications are much more significant. Between 1995 and 2015, the number of graduates of the general and technological baccalauréat was relatively stable, the number of CAP graduates (EQF level 3) falling by around 30% and the number of number of bac pro graduates more or less tripling; there was a particularly steep increase after the reform of 2009 (*bac pro* completed in three years instead of four) (Michel, 2018). In 1995 there was one graduate of the baccalauréat professionnel for five graduates from CAP.

In 2015 the number of graduates of *baccalauréat professionnel* and CAP was almost equal. It can be assumed that this development is not only caused by changed student preferences, but also by the increasing needs of the economy for higher level VET skills. There seems to be a large difference between big companies, which prefer more transversal competences and so prefer graduates from the bac pro (EQF level 4), and the small and medium-size enterprises which prefer practical knowledge and more specialised skills, so welcoming the CAP and qualifications at EQF level 3. France is another country which we can add to the list of those where there was a shift from more practical and lower VET to higher and hybrid VET, providing a combined vocational and general qualification at the level of upper secondary.

([82]) Upper secondary education in France is the differentiated into three major tracks: general academic; technological; and vocational. The technological track is considered general education, because it prepares for further education rather than the labour market. Similar programmes in other countries are considered vocational. A comparable case is the vocational gymnasiums in Hungary (Section 4.3.2).

However, in France this change should not be interpreted as a shift from work-based learning towards school-based education as in the Netherlands or Austria. On the contrary, between 1995 and 2015 there was an increase in apprenticeships in France. A very significant increase of apprenticeship at EQF levels 4, 5, 6 and 7 has offset the fall in enrolment at EQF level 3 ([83]). The decision in 1987 to authorise the centres of apprenticeship (*Centres de Formation d'Apprentis*, CFA) to prepare students for all vocational degrees (and not only the CAP as before), and the increased power of the regions in managing the supply of VET, provided the basis for this increase of the share of apprenticeships. In contrast to Switzerland, we interpret this modest shift to dual learning not as a step towards more distinctive VET, but as diversification of VET in terms of continuous replacing of the concept of occupation by the concept of qualification in the sense of lifelong learning (see also Figure 14).

Despite the continuous efforts of the government to improve it, the image of IVET remains rather low, because the general academic and technological tracks are regarded as recruiting better students and are considered to lead to more prestigious and better paid jobs (Brandt, 2015; Michel, 2018). This is evident in Cedefop's opinion survey: respondents in France confirmed the negative image of VET and, just as in Belgium, a clear majority thinks that students with low grades are directed to VET while only a minority thinks 'it is easy to continue into higher education such as university after vocational education at upper secondary education' ([84]). It can be expected that these views will change in the future due to the more positive image of VET at higher levels, but currently VET is mainly perceived as education at EQF levels 3 and 4.

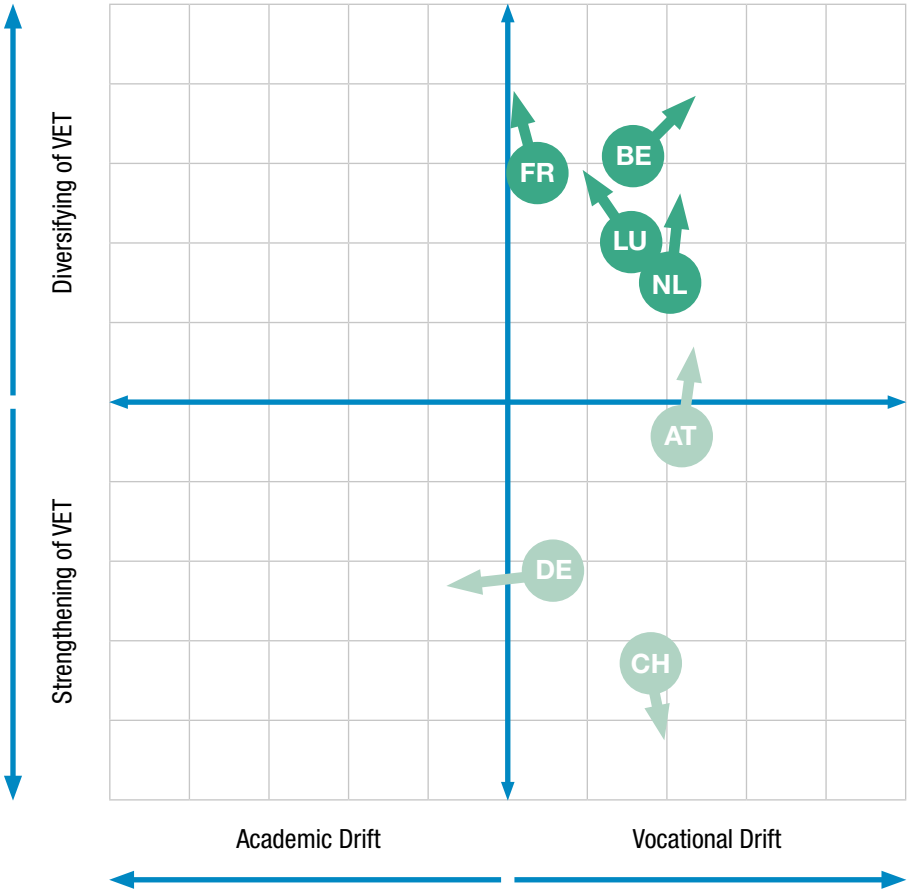
4.5.3. **UK and Ireland**

In the north-western part of Europe, and specifically Ireland and the United Kingdom, it is obvious that many things are different compared with the countries discussed so far, beyond driving on the left. No matter which

([83]) France is among the countries for which participants in our expert survey were more likely to confirm the growth of VET at higher levels for the past two decades (Chapter 5).

([84]) 44% respondents in France said that VET has a negative image compared to 23% in the EU28, 85% said that students with low grades are directed to VET compared to 75% in the EU, and only 39% agreed to the statement 'it is easy to continue into higher education such as university after vocational education at upper secondary education' compared to 54% in the EU (Cedefop, 2017b; Centre Inffo, 2018).

Figure 14. **Schematic representation of change in VET in German-speaking countries, Benelux and France 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

typology or theoretical perspective on education and employment system is applied, the UK and Ireland appear to be different from their continental counterparts ([85]). Both countries are often used to illustrate the prototype of a liberal market economy (LME). In contrast to coordinated market economies (CME), in LMEs workers and employers are less organised, and wage bargaining takes place at the company and not industry level, unionisation rates are low, and labour markets are flexible (less regulated) as illustrated by a number of indicators, including weak employment protection.

In terms of vocational training and education, LMEs mainly rely on in-company training to provide workers with the skills they need. Initial training is mostly only weakly linked to specific occupations rather than focused on the development of specific vocational skills as is the case in coordinated market economies exemplified by the D-A-CH region. There we find early allocation to distinct academic and vocational tracks, with the latter providing training in specific occupational skills mainly in the form of apprenticeship training (Section 4.5.1). A further important distinguishing feature is the wide range of choice available to young people in LMEs. At upper secondary level in the UK, individuals can choose from a range of both general and VET courses. However, the status of VET is low. University entrance is a preferred goal and this affects subject choice such that 'traditional' general subjects have higher status than upper secondary VET programmes. This is likely to have been exacerbated by government policy which, in the past two decades, has substantially increased the proportion of school leavers going to university. Individuals may experience a less smooth transition to employment than in CME countries where there is a closer relationship between VET and occupations.

Although many of the claims made for LMEs are certainly true for Ireland and the UK, and are helpful to explain fundamental differences between countries, such categorisations also tend to undermine important differences between Ireland and the UK, as well as within the UK ([86]). Why do we find apprenticeship training both in Ireland and the UK despite the fact that they

([85]) See, for instance, the overviews provided in Cedefop (2013) where UK and Ireland are discussed as examples of organisational space (Maurice, Sellier and Silvestre, 1986), market-driven VET systems (Greinert, 2004a, 2004b, Cedefop 2004a), liberal market economies (Hall and Soskice, 2001), market-led education systems with workplace focus (Winterton, 2006), and liberal skills formation regimes (Busemeyer and Trampusch, 2012a).

([86]) Whilst there are similarities between the VET systems in England, Wales and Northern Ireland, reforms are creating greater divergence and the Scottish system has always been significantly different in many ways to those of the rest of the UK (Allinckx and Monico, 2016).

are liberal market economies? Why are their apprenticeship systems so different from each other? Why are there different qualifications frameworks in the different countries of the UK? We cannot go into these details here and, given both the long list of reforms and the abundance of literature on VET in the UK (less so on Ireland), providing a three-page summary of the changes in VET between 1995 and 2015 is a mission impossible. Nevertheless, below we try to point out further aspects of skills formation in Ireland and the UK by which they differ from many other European countries before sketching the individual trajectories they have taken in the past two decades.

IVET in Ireland and the UK is provided mainly for young adults. In the UK further education colleges represent the largest group of VET providers and also in Ireland most of VET forms part of further education. Consequently, in both countries VET is understood differently to most other European countries as 'further education and training' (Cedefop, 2017d). According to Rainbird, vocational education and training in the UK has 'traditionally been understood as occupationally related training that takes place once a young person enters the labour market. In other words, it takes place after the end of compulsory school at age 16' (Rainbird, 2010, p. 243).

In Ireland, vocational education and training occurs primarily after second-level schooling and mainly in the further and continuing education sector. VET also occurs in some tertiary educational environments ([87]). Therefore, VET in Ireland is generally referred to as FET (further education and training). This includes PLC courses (post-leaving certificate, leaving certificate vocational programme, leaving certificate applied) awards and qualifications, second-chance education, adult learning, community education, and vocational training, which includes apprenticeships, on-the-job training, CPD (continuing professional development), internships, other training programmes, and labour activation schemes. The diversity of VET provision in Ireland makes it difficult to display a clear identity. The term FET (further education and training) is used as the catch-all conception of VET by society as a whole ([88]). The risks accompanying this diversity were also pointed out in a comprehensive stakeholder survey on FET carried out a few years ago in which stakeholders interviewed emphasised the need to address existing fragmentation and diversity within FET provision. 'In particular, many agreed that the organic development of the system had

([87]) Country expert questionnaire used in Cedefop, 2017d.
([88]) Country expert questionnaire used in Cedefop, 2017d.

resulted in too many providers and possible duplication of provision in some areas. Provision therefore lacked a national focus. Stakeholders also agreed that the quality of provision was inconsistent, with some centres developing a strong reputation based on local initiatives, while others were seen as weaker.' (McGuinness et al., 2014, p. IX).

If 'diverse' is the adjective to describe VET in Ireland, then it is difficult to find an appropriate term to describe the even more diverse VET landscape in the UK. Multiplex? Certainly, the criticisms noted in the Irish stakeholder survey about the overabundance of programmes and variable quality – and especially variable labour market value – have often been made in the UK as well (UKCES, 2009). VET in the UK is available across most levels of the qualifications frameworks, ranging from introductory initial VET courses in secondary schools and colleges through to programmes at higher education level. It can be found in the shape of school-based programmes which combine general academic study with vocational elements, broad vocational programmes and specialist occupational programmes that take place both in a school or college setting and the workplace. VET is offered on a full-time and part-time basis and students may attend school or college on a block-release or day-release basis from employers or attend evening or weekend learning. There were 24 500 regulated qualifications on the Register of regulated qualifications (England and Northern Ireland) in 2014/15, of which 14 400 had an award made (UK NARIC, 2016, p. 12). A major review of the VET system in UK-England elucidated: 'There is no formal definition of 'vocational education' in England, and the term is applied to programmes as different as the highly selective, competitive and demanding apprenticeships offered by large engineering companies and the programmes which recruit highly disaffected young people with extremely low academic achievement. Some submissions to the review were concerned that using the term 'vocational' for the latter was wrong and damaged the former. Others insisted that low-achievers needed vocational programmes and vocational qualifications and argued for their protection. The many ways in which the term vocational is used reflect the many different purposes which 14 to 19 education serves and its large and diverse student body. Some qualifications are highly specific, oriented to a particular occupation. Others are more general, and are referred to sometimes as vocationally related or pre-vocational. Some are very difficult and demanding, others not. A particular qualification can serve different groups, some with a clear career goal and others without, just as for a particular individual, a combination of the highly specific and the

highly general may be more appropriate than just one or just the other' (Wolf, 2011, p. 23). Following this review, various measures have been adopted to try to reduce the number of VET qualifications (such as introducing a new qualifications framework in 2015 and associated procedures for registering qualifications) and to improve the quality of provision through a renewed focus on apprenticeships.

The fuzziness of the concept of VET both in Ireland and the UK, and the fact that the VET sector is less clearly defined (compared with, for instance, primary or higher education), makes it extremely difficult to 'measure' its trajectory over time and to determine whether vocational or academic drift has taken place in the past two decades.

When looking at changes in VET in Ireland it is important to recall the economic context. From the mid-1990s to the late-2000s there was a period of rapid real economic growth fuelled by foreign direct investment which conferred on Ireland the nickname of 'Celtic Tiger'. In only one decade, Ireland moved from a relatively poor EU Member State to one of its richest (in terms of GDP per capita) and from a country which has experienced several waves of emigration (during the 1980s, unemployment had risen to 20% and annual overseas emigration had reached over 1% of population) to a country with positive net migration. The boom came to end in 2008, when Ireland was hit hard by the global economic crisis, and the subsequent property bubble ([89]) resulted in a severe economic downturn with unemployment rates of 12% to 16% between 2009 and 2015 (currently the rate is below 6%) and again negative net migration.

Up to the 1960s Ireland had a sharply differentiated two-tier post-primary system: academically oriented secondary schools and vocational schools. Vocational schools provided a narrowly focused two-year continuation course of practical and applied studies (Canning, 2007, p. 4). As in many other countries, secondary education became more or less universal in the 1970s, made possible by the introduction of comprehensive schools (in 1965) and community schools in (1970). The curriculum of vocational schools was broadened and, at post-secondary level, regional technical colleges were also introduced to ensure the provision of trained manpower at this time. Three decades later, and up to now, there are no great differences between

([89]) See Wikipedia definition: https://en.wikipedia.org/wiki/Real_estate_bubble

secondary, vocational and community and comprehensive schools ([90]). They all follow the same State prescribed curricula and are comprehensive and general in nature. The regional technical colleges became institutes of technology in 1998 and came under the umbrella of the Higher Education Authority in late 2006. The share of students in vocational schools in relation to all students enrolled in secondary education was low but stable between 1995 and 2015 (around 30%); and the share of students at Institutes of Technology in relation to all tertiary students (around 40%) remained similar, although the whole tertiary sector doubled in terms of students in these two decades.

There is no vocational education at upper secondary level in Ireland ([91]), with the institutes of technology being considered to be professional higher education. Most vocational education and training in Ireland occurs within the FET sector, which comprises post-secondary non-tertiary education as well as second chance education/training, and is characterised by a high degree of diversity in terms of type, level and learner. Target groups include young people who have recently completed upper secondary education, adult learners, early school leavers, the employed, the unemployed, asylum seekers, and learners with special needs.

Further education and training is funded, coordinated and planned centrally by SOLAS (previously FAS), which is Ireland's FET authority. The main VET provisions within the FET sector are apprenticeship training (four years) ([92]), specific skills training for unemployed people (half a year to two years); and post-leaving certificate (PLC) courses (one-two years) which prepare learners for work in specific occupations. The FET sector mainly

([90]) At the age of 17 to 18, students usually sit a leaving certificate examination. There are three types of leaving certificate: the broadly balanced Leaving certificate established (LCE), a Leaving certificate vocational programme (LCVP), and a Leaving certificate applied (LCA) for learners not catered for in the first two. Contrary to what the programme title may indicate, the LCVP is not considered to be vocational education and training. The vocational dimension is strongest in the LCA: it is designed to prepare learners for either entry to the labour market or progression to further education, and, in contrast to the other two, students cannot proceed directly to tertiary education. Nonetheless, the LCA is regarded as general education (Burke at al. 2016).

([91]) In a public opinion survey carried out by Cedefop, respondents in Ireland (49%), were most likely to say they would recommend general education to a young person about to decide on their upper secondary education (the highest value in Europe).

([92]) The legal basis goes back to 1931 Apprenticeship Act by which apprenticeship committees, comprising employer and employee representatives and ministerial nominees, were set up to regulate training. However, up to the 1960s only a minority of apprentices took up the school courses available, simply because they were not within reach (Clarke, 2016).

emerged as a response to unemployment in the 1980s ([93]). However, it was the student market rather than industrial and commercial needs that determined course development at PLC level and the sector offered little opportunity to progress to other forms of occupation (Clarke, 2016, p. 308). Participation in PLC courses increased from 15 000 in 1991 to more than 30 000 in the early 2000s (Watson, McCoy and Gorby, 2006) and has slightly increased since then (McCoy et al. 2014). The number of new entrants into the apprenticeship system has dropped from around 8 000 during 2001-06 to less than 2 000 in the following period. However, from these figures it is difficult to say whether there has been an academic or vocational drift in Ireland in the past two decades. While there has been a trend towards increased participation in higher education, it is also fair to say that the diversification of training provision which started in the 1980s has intensified. The development of VET since the second half of the 20th century in Ireland has had certain general effects: led to a pre-vocational strand in upper secondary education; paved the way for professional higher education (in the form of institutes of technology); and found its place in a small, diversified FET sector with many 'special purpose' VET programmes. The introduction of the Irish qualifications framework ([94]) in 2003 and the various reforms and amalgamations of funding and quality assurance bodies since then, reflect the institutional embedding of VET into the Irish education system.

Comparing VET in Ireland with VET in UK-England ([95]) is complex given the various programmes within the further education sector and the many reforms the UK has seen in the recent past. To simplify, we provide a comparison of the apprenticeship systems which are considered as key elements of VET in both countries. The number of apprentices in both countries is smaller than the number of learners in other forms of VET, which reflects the weak articulation between VET systems and the labour market in these LME countries. Nonetheless, comparing apprenticeships is informative because in Ireland and the UK they have followed quite different trajectories.

In UK-England, the fundamental characteristics of VET have remained more or less the same for many decades: i.e. it is 'a market-based system,

([93]) The post-leaving certificate (PLC) programme, or vocational preparation and training programme, was introduced in 1985 with aid from the European Social Fund.

([94]) The diverse provision of VET at post-secondary level and the comprehensive national qualifications framework which integrates both vocational and general qualifications has been praised by an OECD review in 2010 (Kis, 2010).

([95]) The following discussion is limited to England.

underwritten by minimum standards established by public policy, which is expected to respond to various exogenous stimuli' (Gambin and Hogarth, 2018, p. 14). The core elements of the system are as follows:

(a) there is a quasi-market for qualifications and awarding bodies; training providers have a degree of choice over which qualification or awarding body to use when they are considering delivering a course in a particular subject (this is one of the reasons behind the large number of qualifications on offer in the VET system);
(b) there is competition between training providers with consumers (learners/employers) having a some choice of which organisation they select. If they are to make that choice they need good quality information about the likely future returns; this explains the emphasis that has been placed on providing labour market information (LMI);
(c) the use of public funding mechanisms as an important means of ensuring that skills supply meets demand.

Sector organisations also play a role alongside these market mechanisms, although it is variable. In this market-based system, some sectors are more organised than others in relation to VET, notably engineering and construction. Engineering has long-established occupational standards and qualifications recognised by employers. Other sectors, such as hospitality and retail, have struggled to set standards for labour market entry. Trades unions play only a minor role in the VET system and have scarcely featured at all in government policy compared to the emphasis on employers and individual choice.

Although government policies have made adjustments to the UK-England system at various times, they have been made within the existing framework and philosophy rather than trying to change the fundamental market-based nature of the system. Adjustments have tended to ebb and flow in line with changes of government, often reflecting the degree to which a government has believed that market failures should be dealt with. For example, government initially attempted to set up a network of core-funded, employer-led sector skills councils covering all business sectors but this was replaced with a system of more free-standing councils that had to bid for government funds, in line with the philosophy that councils should exist only where there was sufficient industry demand. Similarly, the common apprenticeship standards that were initially in place have been replaced with a much looser framework using minimum standards, on the basis that this will better serve industry needs.

In the realm of apprenticeships, such features stand in contrast with Irish reforms which placed emphasis on the definition of national standards by law and on tripartite management of apprenticeship by the State, unions and employer organisations (Busemeyer and Vossiek, 2016; Kis, 2010; Vossiek, 2018). Today, apprenticeship training in Ireland is an advanced post-secondary four-year programme at EQF level 5 in a few (mainly male-dominated) occupations primarily in manufacturing. Apprenticeships in UK-England are offered from basic training at secondary level to advanced courses at higher education level. However, much of the attainment is typically at a low level, most being at EQF level 3 or 4 and short-term (below two years). There has been a remarkable increase in apprenticeship starts over the past two decades. The numbers more than doubled between 1995 and 2005, and again by 2015; since then there have generally been around 500.000 starts each year ([96]). Between 2009 and 2012 there was a large increase in starts. These increases can be attributed to the increase in government spending on apprenticeships between these years.

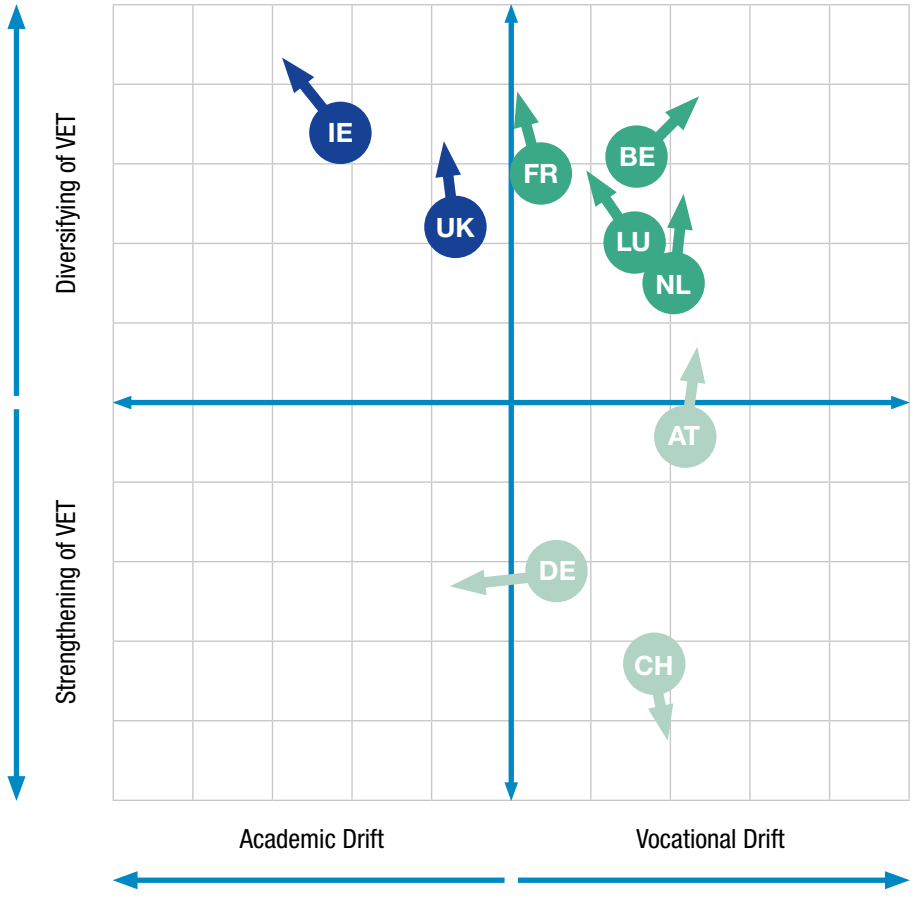
Growth has also been driven by those aged 25 years and over ([97]), many of whom were already sometimes longstanding employees of the company that was about to train them. In the UK-England system, the scaling up of apprenticeships has often been used by employers as a means of validating and upskilling existing workers rather than as a labour market entry tool, reflecting the fundamental LME-basis of the VET system. The concern here is that apprenticeships have been used as a human resource management practice designed to improve recruitment and retention and drive-up employee motivation rather than as a skills intervention (Gambin and Hogarth, 2018). While numbers of apprentices have strongly increased, the overall number of publicly financed learners in FET has declined since 2005 (Hupkau and Ventura, 2017). It is difficult to interpret the developments in VET in England in our two-dimension model. Some academic drift has certainly taken place within VET, but it would probably be premature to see England as moving towards a more distinctive VET system, only because the number of apprenticeships

([96]) In 2017 an apprenticeship levy was introduced. All UK employers with a pay bill of over GBP 3 million per year pay the levy. The levy is set at 0.5% of the value of the employer's pay bill, minus an apprenticeship levy allowance of GBP 15 000 per financial year. The funds generated by the levy have to be spent on apprenticeship training costs. The government tops up the funds paid by the employer by 10%. The number of starts fell following the introduction of the levy.

([97]) In 2004 the upper age limit of apprenticeships was removed, which meant that people over 25 could become apprentices. Higher level apprenticeships were introduced in 2006.

has increased (and will further increase if the government's objectives are realised). The apprenticeship system has been diversified in recent decades and, as far as financing of VET is concerned, 'since the 1980s the system has moved from a relatively uncoordinated system of local training and enterprise councils to a highly centralised system' (Rainbird, 2010, p. 266).

Figure 15. **Schematic representation of change in VET in western Europe, 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2
Source: Cedefop.

4.6. Northern Europe

The Nordic countries – Denmark, Finland, Iceland, Norway and Sweden – have for a long time been considered different from the rest of Europe in whatever classification of welfare States, industrial relations and labour market regimes or political systems has been applied. In Esping-Andersen's (1990) 'three worlds of welfare' model they are classified as social-democratic States as opposed to liberal (e.g. UK) and corporatist-statist countries (e.g. Germany). Since then, various aspects of the economic and social policies common to the Nordic countries have been referred to as the 'nordic model'. While different authors tend to emphasise different aspects, the nordic model includes a comprehensive welfare State and collective bargaining at the national level (with a high percentage of the workforce unionised) underpinned by a free market capitalist economic system often described also as the 'the third way', combining capitalism and welfare. The Nordic model of welfare emphasises maximising labour force participation, gender equality, egalitarian and extensive benefit levels, strong income redistribution, broad commitment to social cohesion and a universal nature of welfare provision in order to safeguard individualism by providing protection for vulnerable individuals and groups in society ([98]). Despite many common values, the Nordic countries take different approaches to organising the welfare State and many differences between the countries become apparent when looking in detail. Though it can be questioned whether there is a Nordic model at all, and whether 'the third way' has been viable, the commonalities in broad political, economic and cultural categories seem to outweigh the differences, at least when compared to other European countries. Education indicators, such as very high investment in education and a consistently much higher level in participation in lifelong learning, reinforce the difference with other

([98]) With reference to Dølvik (2013), and based on his review of literature, Reegård (2018, p. 1f.) distinguishes three interrelated pillars to illustrate the Nordic model:
(a) macroeconomic governance: the Nordic countries are small open economies with fiscal and monetary policy aimed at combining free trade with growth, full employment and social cohesion. This has required active and stability-oriented fiscal and monetary policies, and coordinated wage formation, which is considered to be vitally important;
(b) the public welfare State: Nordic social policy is comprehensive and aimed at broad risk coverage for the whole population;
(c) organised working life, partly regulated by law and partly by collective agreements: the strength of the social partners and the balance of power between them is vital to assure the legitimacy of political decisions, trust amongst actors, confidence in institutions, and trust between political actors and the population.

European countries, although these may also be linked to the high economic performance, as for instance measured by GDP per capita ([99]).

Nevertheless, when VET is commonly seen as important for shaping a cultural, political and economic space or at least being an important characteristic of such, a Nordic model of VET is not visible (compare also Figure 16) ([100]). In the comparative literature on VET systems, Sweden and Denmark are discussed as exemplars of different VET systems (Michelsen, 2018). Denmark is described as a strong and well-functioning VET system based on apprenticeship and company-based learning, while Sweden has been considered as an example of a statist, egalitarian social-democratic school model, where upper secondary VET is embedded in a comprehensively organised school system (Busemeyer and Trampusch, 2012b). The Norwegian and Finnish systems have received less international attention and are mostly presented as similar to Sweden.

The establishment and growth of comprehensive school systems in the Nordic countries (fostered by the social democratic parties) has been described 'as a progressive development, as part of the process towards a more equal society and as an important precondition for the development towards greater equality for children irrespective of social background' (Michelsen, 2018, p. 3). The amalgamation of general and vocational education at lower secondary level became a major concern of these countries in the 1970s but, as far as the set-up of upper secondary education is concerned, they have taken different trajectories.

In comparison with the other Nordic countries, Jørgensen (2018, p. 84) argues that the Danish system of upper secondary VET represents the 'purest form of apprenticeship model' that has more similarities with the dual systems in the German-speaking countries than with its neighbours. While the other Nordic countries have taken steps to integrate education at the upper secondary level, Denmark has maintained a separate system

([99]) It should also be mentioned that, in contrast to CEE countries and as in many Western countries, the populations in all Nordic countries are increasing due to high fertility rates and immigration. For example, in Sweden, the population has increased by 1 million or 11% since 2000 and, during the refugee crises of 2015, a record number of 134 000 immigrants came to Sweden (Skolverket, ReferNet Sweden, 2016).

([100]) Referring to the whole education system, Antikainen (2006) argued there are common values such as democracy, equality, progressiveness, and pragmatism guiding the development of education in the Nordic countries. But despite the fact that the Nordic education systems can be seen as part of the Nordic welfare State, he acknowledges different models and patterns. Certainly, the differences are more pronounced when focusing on VET instead of compulsory or adult education. See also Jørgensen et al. (2014).

of apprenticeship due to the strong interest of employers; there are strong links to the employment system, but weak ties with general and higher education. In Sweden the State-led rise of the comprehensive school meant that firm-based apprentice skill formation was threatened and eradicated, because employers were not strong enough (Michelsen, 2018, p. 14). The Norwegian case, which combined apprenticeship and the comprehensive school, suggests that 'the employers found space for autonomy and firm-based training within such a structure, and apprenticeship has been growing steadily since […]' (Ibid). In Finland, the employers consistently preferred school-based VET, also because there was simply no basis for the collective organisation of skills in industry. Further, a statist preparatory school-based VET system with few connections to general education was preferred over integration of VET and general education while apprenticeship has mainly developed as an option for adults (ibid.)

Comparing the Danish VET system with that of the German-speaking countries is misleading in many respects. First, the VET systems of the German-speaking countries show remarkable differences and differing trajectories (see Section 4.5.1). Second, the two-phased structure of the apprenticeship system in Denmark and Norway (first year in school, followed by a phase in the company) differs strongly from the one-phased system in the German-speaking countries in which alternation between school and work starts from the first week of the apprenticeship. Strictly speaking, the first school-based phase in Denmark (and Norway) cannot be considered work-based learning. Third, the average age for young people entering VET at upper secondary education in Denmark is 21 (compared to 17 for general education); for those completing it is 28, much older than in the German-speaking countries. Finally, the share of young people enrolling in upper secondary VET is much below not only the German-speaking countries, but also many other countries, falling from 30% in 2004 to 19% in 2014 (Cedefop, 2018b) ([101]).

([101]) In general upper secondary education in Denmark, two out of four programmes (higher commercial examination (*højere handelseksamen,* HHX) and higher technical examination (*højere teknisk eksamen*, HTX) are sometimes referred to as vocationally oriented upper secondary education. As they do not provide direct vocational qualifications, meaning that students have to complete higher education before entering the labour market, they are placed in the general education category. Compare also the technological *baccalauréat* in in France or the vocational gymnasiums in Hungary (Sections 4.5.2 and 4.3.2).

A critical juncture for the Danish apprenticeship system was a series of reform proposals in the early 1970s reacting to the critique of early vocational specialisation, a rise in dropouts, the misuse of apprentices for cheap labour and their inability to provide the full spectrum of required learning outcomes, and the increased popularity of the gymnasium. The first reform plan foresaw a similar solution and unified upper secondary structures as in the other Nordic countries. But the strict separation between general education and VET remained, despite some 'pedagogisation' of VET similar to the developments in Switzerland. One reason was that the trade union movement and the Social Democratic Party were strongly influenced by the skilled workers' unions, who opposed the merging of VET into a unified school. Another reason can be seen in the fact that there was no school-based VET track in place as in the other countries and thus there were no obvious alternatives (Jørgensen, 2018, p. 178). A later attempt to reform the technical and business gymnasiums to connect the vocational and general track also failed. The vocational gymnasiums gradually cut the links with the VET system and came closer to the classical gymnasium; in 2005 they were granted equal status.

In the 1990s the political and societal pressure to get every student into upper secondary education increased, which in turn increased the share of disadvantaged students and the dropout rate in VET. Further, the enrolment of young people coming directly from compulsory education has dropped and the number of adults increased. The changed student population also affected the social esteem of the apprenticeship system which ranks below other pathways at upper secondary level. Contrary to other countries with strong apprenticeship systems, many Danes think that students with low grades are directed to VET (85% compared to 75% in Germany, Austria or the Netherlands; see (Andersen, 2018; Cedefop, 2017b)) ([102]).

In Sweden, VET was integrated into a comprehensive upper secondary school structure in the 1970s with the aim of reducing inequalities in the education system. VET programmes became broader and more preparatory

([102]) The peril of this downward spiral is also described by Andersen and Kruse (2018, p. 23) when interpreting data from Cedefop's opinion survey: 'Compared to the EU average, the public image of VET in Denmark is negative. This fact, drawn from the survey, may seem paradoxical in a country where the history of VET is long and proud and where there is a VET system capable of delivering the relevant competences. […] This negative image might ultimately have a negative influence on who and how many students will choose VET.'

in character ([103]). In the 1990s the Swedish education system saw various reforms which can be attributed to the neoliberal tendencies at that time and can be summarised as decentralisation and 'marketisation' of education (money following the student, management by objectives, increase of private schooling). At the same time, a continuation of the social-democratic policy of equal access can be observed and the previous pattern to broaden general education elements in VET was further strengthened to offer all students the opportunity to continue to higher education. VET programmes were extended from two to three years and led to basic eligibility for higher education (Olofsson and Thunqvist, 2018).

However, at the beginning of 2010s the Swedish VET system took a sort of U-turn ([104]). Access to higher education was partly removed and is no longer a main goal, apprenticeships were re-established ([105]) and a variety of industry-driven training has emerged. As Olofsson and Thunqvist (2018, p. 126) put it: 'The old, homogenous Swedish VET system tends to be more differentiated and controlled by the industry requirements'. However, these recent reforms did not put an end to the steady decline in the share of enrolment in VET since the mid-1990s (from roughly 45% in 1995 to below 30% in 2015). On the contrary, the limited access to higher education seem to have reinforced further falls ([106]) and, despite the new emphasis of work-based learning both at upper secondary and higher levels ([107]), it is 'not likely we will see an apprenticeship system in Sweden in the future that is comparable to those in Denmark and Norway' (Olofsson and Thunqvist, 2018, p. 141).

The Norwegian VET system can be characterised as a combination of the bureaucratic, State-regulated model and the dual corporatist model, combining elements of the Danish and Swedish systems (Nyen and Tønder,

([103]) Prior to that the Swedish system can be characterised as a differentiated system, partly based on an apprenticeship system, which builds on collective agreements by social partners and was not legally regulated.

([104]) This is not depicted in Figure 16 but should be kept in mind when considering future scenarios.

([105]) See the case studies in Cedefop (2013) and Cedefop (2016a).

([106]) See Skolverket, ReferNet Sweden (2016). In Cedefop's opinion survey, participants from Sweden were more likely than those from other countries (except for Belgium) to agree with the statement that students with low grades are directed to VET and, together with participants from Denmark, the least likely to recommend VET to young people nowadays (Cedefop, 2017b; Skolverket, 2018).

([107]) In August 2015, the Ministry of Education presented a memorandum proposing, among other things, ways to strengthen work-based learning in higher vocational VET programmes and developing flexibility in accessing the programmes (Skolverket, ReferNet Sweden, 2016, p. 29).

2014). Through the comprehensive school-reform in 1994 the apprenticeship system was integrated into the general upper secondary education system and developed from a 'recruitment channel and qualification system for trades' into being also an educational arrangement for young people accompanied by stronger public governance and regulation (Reegård, 2018 with reference to Nyen and Tønder, 2014). Another central aim of the reform in 1994 was to extend the apprenticeship system to new labour market sectors which did not have the tradition of apprenticeship training before (among them retail and office jobs). These 'new' service sector trades strongly increased after their introduction, but have not been able to gain a sufficient foothold, neither in the labour market nor among students, signifying that the transition of the VET system to a service economy has proven less successful (Reegård, 2017).

The current vocational tracks follow a 2+2 model, with two years at vocational school followed by two years of apprenticeship. This means that a consecutive combination of school-based and work-based learning characterises Norwegian VET in contrast to the parallel combination in German-speaking countries. The reform also opened up access to higher education for those taking a supplementary year of academic subject study after the two school-based years or taking an extra year after graduating with a trade certificate. This option is particularly popular within programmes qualifying for health and childcare and underlined the high permeability between general and vocational tracks in Norway ([108]).

There are some uncertainties in determining the share of VET at upper secondary level ([109]), but it has been generally stable at around 50% ([110]). The proportion of 16-year olds applying for a vocational programme has been around 40%, but in Norway a large share of adults complete vocational education, just as in Denmark (The average age for those

([108]) The increased theoretical content in all VET tracks allowed students to transfer to general education tracks as an alternative to entering an apprenticeship without loss of time, so making the choice of a VET track less risky (Michelsen and Høst, 2018).

([109]) In Norway, folk high schools are reported to the ISCED 2011 mapping as a vocational programme at level 3 within scope UOE. These courses do not grant degrees or conduct exams. They 'provide credentials for further study', but do not lead to an occupation or give access to studies at level 4 (Cedefop, 2018b).

([110]) With reference to the statistics from the Directorate of Education, Michelsen and Høst (2018) state that around half of the youth cohort has applied for a study programme defined as vocational. This has been quite stable since the reform in 1994. However, the number of transfers from VET tracks to general education has grown considerably. The total share of a Norwegian youth cohort undertaking apprenticeship has varied between 25% and 30% for the past 20 years.

completing a vocational programme in Norway is 28). Approximately half of all trade exams are completed by adults, who can also register for the trade examination based on prior work experience (usually after having a shorter theoretical course). This route accounts for about a third of all new trade certificates each year (Reegård, 2018).

Local patterns of inequality in participation and achievement in VET are evident, linked to the composition of local labour markets and VET traditions. For instance, in Oslo, which is characterised by labour migration, de-industrialisation and knowledge-intensive labour markets, only one in four of those aged 16 to 18 chooses VET, while it is almost every second young person elsewhere in the country (Reegård, 2018, p. 4). Nevertheless, there has been a significant increase in the number of apprenticeships over the period since 1995, and in 2017 the highest number ever (above 20 000) of new apprenticeship contracts was recorded.

Apprenticeship as a training model has received widespread political support in Norway, but has been challenged by external pressures. These include the supply of relatively low-cost labour resulting from immigration and 'academisation' tendencies in society following the substantial expansion of tertiary education. Since EU-enlargement in 2004 and 2007, Norway has experienced a large increase in labour immigration, particularly from Poland and the Baltic States, in the building and construction sector, which seems to have affected the degree to which young people perceive the vocational education system as attractive (Reegård, 2018; Røed and Schøne 2016). At the same time, the fact that higher education credentials are ascribed higher value in society has implied a potential weakening of the attractiveness of the VET system. Consequently, measures to increase permeability to sustain the attractiveness of VET, such as the use of hybrid qualifications (providing both access to higher education and a vocational certificate) to a greater extent are currently being considered (Reegård, 2018).

The Icelandic VET system shares features with both the Danish and Norwegian systems. The share of all upper secondary school students enrolled in IVET is around one third and has been stable over recent years. Less than half are enrolled in combined work- and school-based programmes, though this share was higher at the end of the 1990s (around 60%). The duration of study programmes varies between one and four years. Time at school is often divided into a basic part, which is common for several programmes in similar sectors, and specialisation in a number of trades. The most common VET exam is the journeyman's exam, in which students demonstrate their hands-

on skills and receive exclusive formal rights to work in the chosen trade. Almost all VET takes place at upper secondary level, which means that it is at level 3 in the Islandic qualifications framework and EQF level 4. A few possibilities exist at post-secondary non-tertiary level: masters of crafts (where journeymen with at least one-year working experience learn how to start a company and train apprentices); captains and ship engineers at the highest level; and tour guides. Many programmes, traditionally associated with women (such as nursing and social care) have been moved from upper secondary to tertiary level, which means that they are no longer classified as VET and the share of women in higher education has increased (Cedefop, 2014c).

General education in Iceland is considered to have a higher social esteem than VET but, according to a white paper on improvements in education ([111]) published in 2014, the share of people choosing VET should increase. New VET pathways, e.g. for assistant nurses and social service assistants, have been created (ibid.).

The trajectory the Finish VET system has taken in the past two decades differs from the other Nordic countries, underlining once more the differences between them and their peculiarities. In Denmark the attempt to maintain their distinctive VET systems was of limited success and it lost much of its attractiveness. In Sweden, which has a totally different VET set-up and which tried to achieve parity of esteem between VET and general education by a comprehensive upper secondary school system, the modest vocational-oriented track within this system also declined. Most recent changes to stratify the system have not yet shown the expected improvements – at least not in terms of numbers. Only in Norway, which combines school-based VET with work-based VET (apprenticeship), has the share of VET remained reasonably stable, with apprenticeship maintaining its position in important parts of the economy. Finland, which also has a predominantly school-based VET system, has experienced a remarkable growth in enrolments over the past two decades, perhaps achieved by the strengthening of work-based elements within school-based VET.

Since the 1970s, for the sake of social inclusion, Finnish education policy has aimed at making sure that everyone has a qualification that enables access to the labour market (Kokkonen, 2018). In the 1980s and 1990s,

([111]) Ministry of Education, Science and Culture (2014). *Hvítbók um umbætur í menntun [White paper on improvements in education].* https://www.stjornarradid.is/media/menntamalaraduneyti-media/media/frettir/hvitbik_umbaetur_i_menntun.pdf

Finnish VET was struggling to gain esteem in comparison to general upper secondary education. The adoption of lifelong learning policies promoted the abolition of dead ends in Finland's education structure and opportunities for transitioning from VET to higher education were developed (Stenström and Virolainen, 2018). In the 1990s, the government set an objective to raise the share of highly educated people. Basic VET degrees were expanded to last three years and to grant qualifications for further studies at university level ([112]). At the same time, the higher vocational colleges were transformed into universities of applied sciences (polytechnics). This marked 'the end of higher-level VET' (ISCED5) in Finland and these degrees were replaced by university level bachelor (ISCED6) degrees (Kokkonen, 2018). The polytechnic reform created a binary system of higher education in Finland and established a systematic route for students to extend their studies from VET to higher education ([113]).

Another important change to the VET system in the 1990s was the introduction of competence-based qualifications for adults, officially established in 1994. This system enabled learners to earn their vocational degree by demonstrating skills acquired through working life without necessarily attending formal training. A new Apprenticeship Act was launched in 1992 which aimed to improve the status of apprenticeship training as a work-oriented form of training in an otherwise mainly school-based vocational education system.

All these changes must be seen against the background of the severe recession in the early 1990s that caused high unemployment and a large public budget deficit. The recession sped up the State's need to improve the links between school and working life. As a consequence of the various reforms, qualifications can now be achieved via three different routes. Most young learners still complete their upper secondary vocational qualifications at vocational schools, but vocational qualifications may also be completed through apprenticeship training and through competence-based examination, mainly for adults.

([112]) Following the Vocational Education Act in 1987, the three-year VET programmes provided general eligibility for higher education, while two-year programmes gave eligibility for further studies within the same field. According to Stenström and Virolainen (2018, p. 108): 'This was the first time that an act integrated VET consistently and as part of the overall Finnish education system.'

([113]) The Finnish acronym for polytechnics, 'AMK' (*ammattikorkeakoulu*), literally means 'vocational higher education institution') (Stenström and Virolainen, 2018).

Since 2001, the structure and curricula of initial vocational education and training have been renewed in response to the lack of cooperation between Finnish VET and the working world. The number of vocational qualifications was reduced to 52 and study programmes to 113. On-the-job learning (work-related learning) was simultaneously incorporated into the curriculum, lasting at least six months. In 2006, a new feature was built into the system: vocational skills demonstrations. Students need to demonstrate in practice how well they have achieved the objectives of their vocational studies and acquired vocational skills. In contrast to adult competence test performances administered by the qualification committees, young students are required to demonstrate their practical skills during their initial VET, in practical work situations or in practical assignments (Stenström and Virolainen, 2018). VET with on-the-job learning and skills demonstrations became a distinctive characteristic of the Finnish VET system, in contrast to the Swedish school-based model, the Danish apprenticeship model or the combined school-based and work-based model in Norway. The changes, along with eligibility to access higher education, have helped increase the popularity of VET in Finland and improved its position in the Finnish education system. Participation in VET has increased, and the attraction of the Finnish school-based VET system has been steadily growing until recently.

Due to the different routes, the amalgamation of IVET and CVET, and the mix of young and adult learners, it is difficult to provide good comparable statistics and to demonstrate this in numbers. Comparable Eurostat data show an increase in the share of VET at ISCED 3 from 52% in 1998 to 70% in 2012. However, contrary to most other countries, these figures may also contain large numbers of adults and include CVET ([114]).

([114]) The difficulty in finding comparable numbers from Finland is that all of the following VET qualifications are considered to be on upper secondary level: curriculum-based basic vocational education; preparatory initial vocational education for a skills examination; preparatory education for further vocational qualifications; preparatory education for a specialist vocational qualification. However, the last two are more post-secondary. To give an idea of the different tracks: in 2015 there were 325 000 VET learners in Finland, half of them in traditional curriculum-based basic vocational education and another quarter in preparatory initial vocational education for a skills examination; the rest in CVET. Of these 325 000 learners, 15% were in apprenticeships and the majority in educational institution-based education; however, there are practically no apprentices in curriculum-based basic vocational education, roughly a quarter in preparatory initial vocational education for a skills examination, a third in preparatory education for further vocational qualifications and two thirds in preparatory education for a specialist vocational qualification. See Statistics Finland (Koukku and Paronen, 2016).

The motives behind the development of the VET system have changed over time. When the first vocational schools were founded, their primary role was to produce skilled workers needed by the labour market. In later reforms, the influence of the Nordic welfare State can be seen, as much of the development has centred around providing equal education opportunities for everyone living in Finland and access to lifelong learning (Kokkonen, 2018).

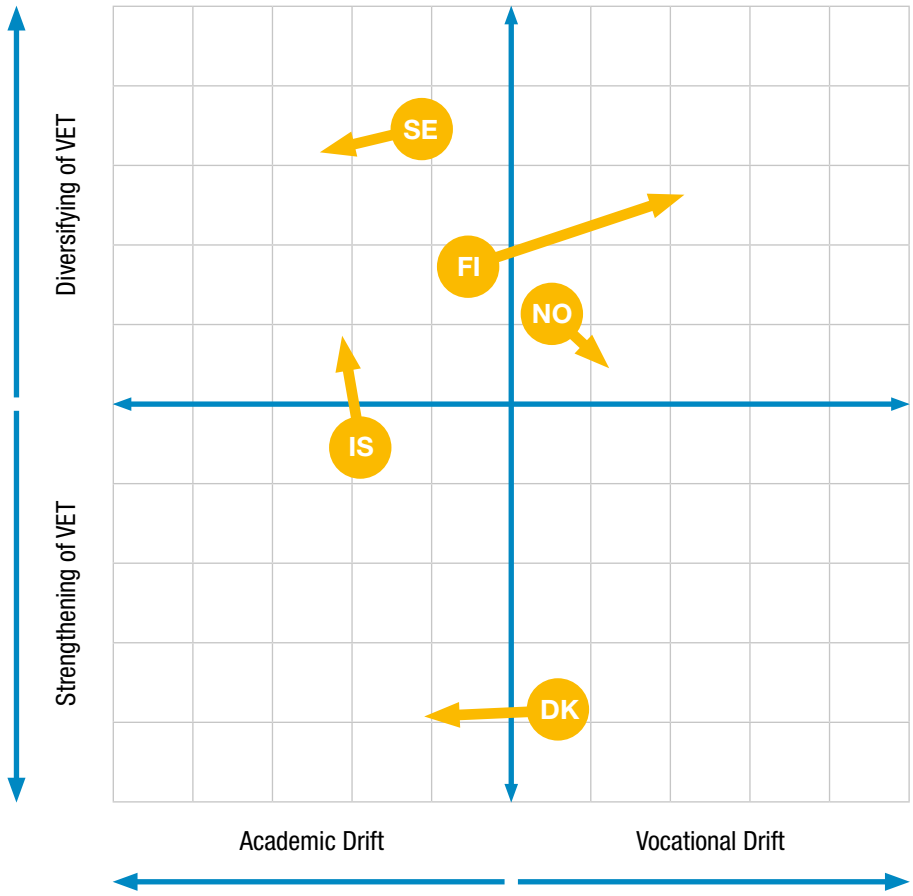
Partly due to cuts in vocational funding at the beginning of 2017 (as a delayed reaction to the continued depression since 2008), there is continuing reform to modify the very concept of VET. This reform is strongly based on the idea of customer-oriented VET, and concerns mainly, but not exclusively, funding and administration (e.g. education providers will have increased freedom in organising their activities). Virolainen (2017) argues that the Finnish VET reform has three aspects: laws are renewed (regulative); norms are changed when curricula are rewritten (normative); and the cognitive understanding of the meaning of VET is redefined, when curricula are recategorised as more competence oriented (cognitive).

The driving forces behind prior Finnish VET reforms were inclusiveness and labour market responsiveness. Cuts in expenditure recently became an additional challenge, and it remains to be seen whether the new reform will continue the more recent successful development of the Finnish VET system.

The more advantageous VET developments in Finland, compared to the other Nordic countries, also seem to be reflected in public opinion. According to Cedefop (2017b) and based on a representative sample, 84% of respondents in Finland said that vocational education in their country has a positive image in contrast to only 64% in Sweden and 60 % in Denmark (which are both below the EU-28 average of 68%) ([115]). 52% of all respondents in Finland think it would be easy for someone aged 16 to 18 who had started vocational education to switch to general education (compared to only 38% in Denmark and 36% in Sweden, and EU average 41%); and 64% think it is easy to continue into higher education such as university after vocational education in upper secondary education compared to 43% in Denmark and 38% in Sweden, EU and average 54%) ([116]).

([115]) The prominence national skills competitions (as part of World Skills/Euro Skills) has gained over the years in Finland may also contribute to this perception.
([116]) Norway and Iceland did not participate in the survey.

Figure 16. **Schematic representation of change in VET in northern Europe 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.
Source: Cedefop.

4.7. Conclusions: 'the big picture'

In Chapter 3 we elaborated on a number of common trends in VET, such as the shift towards learning outcomes, the introduction of qualifications frameworks or, more recently, the renaissance of apprenticeship training. This analysis may suggest that these developments are pushing national VET systems in Europe in one particular direction. However, from case studies conducted in Cedefop (2018d) we knew already that, apart from major global trends such as ageing, globalisation or digitisation, the conditions for national VET systems may differ substantially. By drawing upon the various reports produced within this project and additional analysis of literature, particularly Cedefop country reports, this chapter has analysed more individual country trajectories over the past two decades in greater detail, covering all European Member States, Norway and Iceland. This analysis revealed prevailing differences between eastern, western, southern and northern Europe. Ageing, net emigration and decreasing populations are major concerns in eastern Europe countries. In contrast, the main concern in the south is youth unemployment (with the exception of Malta). Nevertheless, the south and the east are catching up with the west and north in terms of GDP and living standards. It remains to be seen how this will develop given the foreseeable skills gaps in the east and unemployment in the south. Western and northern Europe have benefited economically from labour migration from the east and third countries, but the attractiveness of VET systems for young natives may eventually have suffered from the increase in migrant workers.

The trajectories of individual countries when compared seem to suggest a lack of fundamental change. This applies both to the position of VET in the overall education and training systems and changes within VET. For instance, no country has changed its school-based VET system for a dual system of the German or Swiss type. Increasing numbers of apprenticeships have not made the Hungarian VET system more like Germany. Despite academic drift in all Visegrád countries, they are still distinct from countries where general education still dominates, as in the Baltic and most southern Europe countries. The new emphasis on work-based learning in Sweden has not resulted in an apprenticeship system comparable to those in Denmark and Norway and it is not likely that this will be the case in the near future.

This is not to say that countries' VET systems cannot change radically. However, two decades seem to be a rather short period in highly developed

countries for an established institution, such as education ([117]). This may look odd against the background of what happened in the past 20 years: EU-enlargement from 15 to 28 Members, 9/11, Fukushima, refugee crisis, GPS, smartphone ([118]). A good example comes from the post-communist countries. Despite the break with the communist past and the profound economic and social impact of the transition on the education systems, certain structures and elements prevail (West, 2013). Although communist ideology is no longer taught, students still attend schools characterised by their past (not just as the building, but as the type of school). In western countries which had major reforms in the first half of the 1990s, such as the Netherlands, Norway or Finland, the legacy of past systems also cannot be ignored. The countries which seem to have changed most since 1995 – in terms of developing their VET system – are Malta and Finland, probably followed by Spain and Portugal. The countries which seem to have experienced the strongest deterioration of their past VET system are Denmark and Poland. However, in both cases they seem to be taking a turn and their past trajectories cannot be extrapolated into the future.

In Europe as whole, and particularly at upper secondary level, we see both academic and vocational drift, and some remarkable convergence in the key indicator describing the share of VET and general education. In the past 20 years, the share of VET at upper secondary level has decreased in countries which had a significant share (70% and above) in the early and mid-1990s, while it increased significantly in countries with traditionally low shares in VET. This is best illustrated by comparing the trajectories of the Visegrád countries (decreasing shares) with the west Mediterranean countries (increasing shares).

A similar pattern can be observed for work-based learning (apprenticeships). In countries in which work-based learning dominates the VET system (such as Denmark and Germany), VET came under substantial pressure due to academisation ([119]). In countries with both school-based and substantial work-based tracks (such as Austria, Iceland and the Netherlands)

([117]) Historical analysis taking longer time periods (at least 30 to 40 years) reveals both path dependency and fundamental change. See for instance Thelen (2004) and contribution in Berner and Gonon, 2014) and Michelsen, 2018.

([118]) Compare Figure 3 in Chapter 3.

([119]) Despite academisation being also an issue in Switzerland, it is the only country which has been able to maintain its high share of work-based learning at upper secondary level, which makes an interesting case for policy learning. An issue which would be worth examining in more detail here is the fact that some cantons limited access to general education by raising entry requirements.

the apprenticeship track lost terrain to the school-based track: Norway is an exception. In contrast, apprentice numbers increased in those countries which only had minor apprenticeship tracks (Hungary, France, recently also Spain). Thus, there seems to be some convergence in the balance of VET and general education and school-based and work-based learning, resulting in a growing number of mixed systems (where work-based tracks exist side-by-side with school-based tracks). It remains to be seen if this is a historical accident, or if more balanced systems will prevail in Europe.

In almost all countries there is a trend within school-based VET towards broader vocational domains, a richer mixture of theoretical and general subject matter and qualifications providing access to higher education at the expense of more specific practical VET. This can be well illustrated by the changes in all Visegrád countries but is also evident in many western countries (such as France, the Netherlands and Austria). This trend can be described as hybridisation of vocational and general education, but can also simply be considered as a trend towards double qualifications. This trend is not only obvious within school-based VET, but can also be seen within apprenticeship tracks by the increasing numbers of enrolments in the preparation for vocational *baccalauréat* or *matura* in Austria, France, Switzerland and recently also in Denmark. Both the demand for higher VET skills by the economy and changed student choices may be drivers of this trend. An obvious result of these developments is longer schooling and a general shift of the centre of gravity of VET from level 3 to level 4 or even 5 (in all countries).

The changes within school-based VET and the particular trajectories of technical schools have maybe shaped the overall VET systems (including professional HE and CVET) in many countries more than changes in apprenticeship systems. In some countries these schools were upgraded (the Netherlands and Finland) and gave rise to a strong professional higher education sector. In others, the dilution of previously dedicated vocational education resulted in an amalgamation with general education (as in Denmark, France and Hungary) ([120]). In countries such as Austria they have been further developed into a strong school-based VET track competing with the apprenticeship system. Providing both access to the labour market

([120]) Studying the historical developments of these schools and, for experimental reasons, reclassifying these vocationally oriented education programmes as VET would reveal more similarities between countries at upper secondary level.

and to higher education is today's key dilemma for vocational education. On the one hand it raises esteem of vocational education, on the other hand it bear the risk of diluting VET and at the same time putting those who have their strength in acquiring manual and practical skills at a disadvantage.

The most striking development in apprenticeships is that the previous connection of a specific mode of learning (that of combing learning in an enterprise with learning in an educational institution) with a specific qualification (that of a skilled worker) has been diluted or decoupled. In some countries, apprenticeship training is now provided from low levels (EQF 2 or 3) up to academic degrees (EQF level 6 and 7). This decoupling is most obvious in France, Hungary, Finland and the UK. It seems to reflect within education a distinction Maurice and colleagues (1979) found when describing the French labour market as qualification space and the German one as occupational space. However, some increasing stratification of apprenticeship is also visible in the traditional apprenticeship countries (Austria, Denmark, Germany and Switzerland) by offering apprenticeship at lower and higher level, but without giving up the vocational principles. While stratification was always an issue in these countries (compare for instance the high standing of technical apprenticeships in renowned car manufactures with house-painters), less demanding and shorter apprenticeships are now officially distinguished from longer and more demanding programmes.

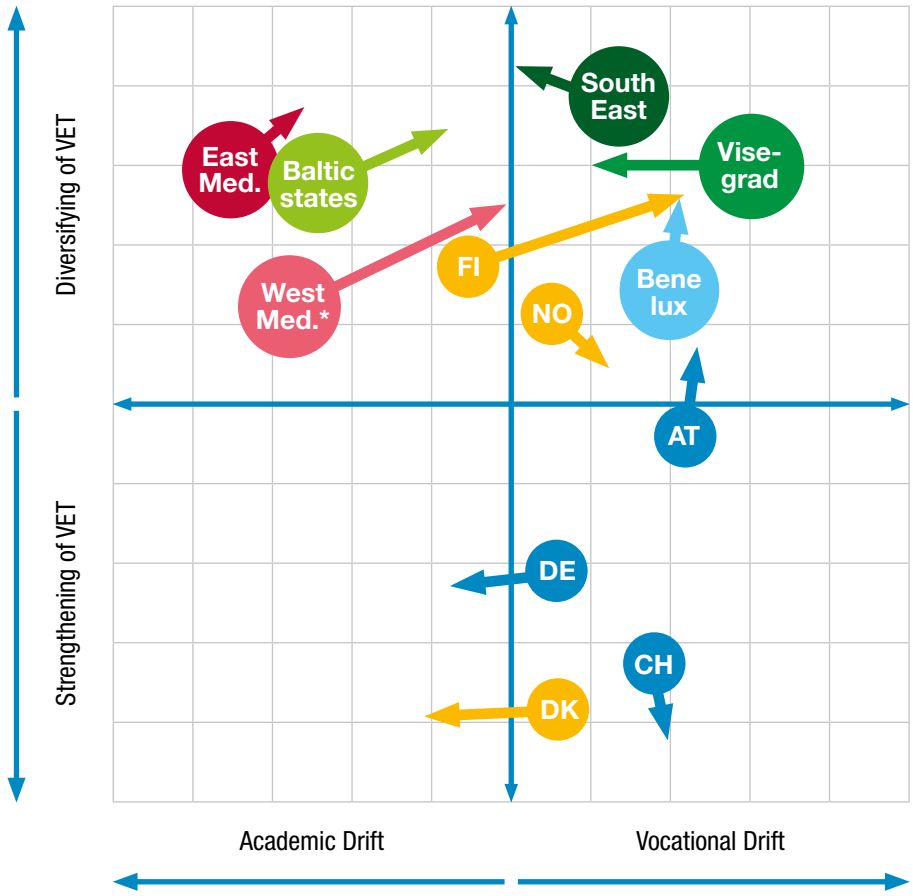
Only in Denmark, Germany and Switzerland (and partly in Norway) can we observe a strengthening of VET in terms of improving or trying to maintain its distinctive character. In all other countries pluralisation tendencies seem to be stronger. However, the models within the spectrum of pluralised VET differ. The Dutch, Finnish and Maltese systems are indicative here. Although quite different in terms of programmes and qualifications offered they have all overcome previous fragmentation and have a comprehensive and well-structured VET system. This also seems to reveal a universal pattern: in parallel to increasing diversification, approaches to rearranging programmes and to achieving more structured education systems can be observed (qualifications frameworks playing an important role in this process). But 'tidying up' systems and making them more comprehensive may also cover up growing differences within programmes. For instance, within universal secondary education it is precisely the horizontal differentiation which reflects social stratification and contributes to reproduction of social inequalities. In this regard, we have to consider that VET systems are not only internally differentiated, they are also internally stratified. Different types of VET create

uneven educational environments which differ in quality, status and prestige and which determine student life trajectories.

Our analysis looked at some aspects relevant for differentiation and stratification, such as the character of training (whether it is school-based or work-based), the specificity of programmes (broad field of study or occupations), and access to higher education and status (in terms of public opinion). However, a number of other issues which we did not consider systematically would be equally relevant. There are selection procedures in VET (who can enter and on what grounds), gender differences, and other forms of inequality, or teacher qualification (the level of teacher qualification in different type of schools). The changes in teacher training and in training of in-company trainers is very relevant for understanding change in VET; so are changes in funding and governance. These are all aspects we could not address and are left for further analysis to complement the picture. Further, we can be criticised for an emphasis on IVET: although reference to CVET and VET at higher levels were made, we were not able to do so systematically for all countries.

Even for IVET we know there are limitations to the analysis. As the examples for Malta and Hungary have shown, allegedly simple international indicators, such as enrolment in ISCED 3, need a lot of care to be correctly interpreted. Without considering the age of students, the specific programmes available, access requirements and qualifications provided, comparisons are limited. The same holds true for the extent to which general subjects and practical learning takes place (and where). For better comparability of such issues, only a 'VET PISA', thorough comparative curriculum research in VET, would offer a satisfactory result.

Figure 17. **Schematic representation of change in VET in Europe, for selected countries and country groups, 1995-2015**



NB: Beginning of vector shows position in 1995, end of vector position in 2015; for more explanations see Section 4.2.

(*) Italy not included.

Source: Cedefop.

CHAPTER 5.

Results of the survey *Changing VET 2035*

5.1. Introduction

This chapter presents the analysis of a survey about the past, current and future of VET conducted among almost 1 500 VET stakeholders and experts in Europe in Spring 2018. The survey is only a small, but important part of the research project presented here. One aim was to validate findings of our previous research on past developments (Cedefop, 2018b, 2018c, 2018d, 2019c, 2019a) and to extend the knowledge which we gained there through a limited number of country case studies to all European countries (including Norway and Iceland). In doing so, it was to set some parameters for the subsequent development of scenarios for VET in 2035 (Chapter 6).

5.2. Methodology, background and data limitations

The Cedefop online survey *Changing VET 2035* was carried out between 10 April 2018 and 20 July 2018. It included two pre-tests conducted between February and March 2018. The first was organised among the participants of the Cedefop expert workshop *VET in the 21st century: future trends and priorities* ([121]) and the second was carried soon after, among the country experts of this project. The survey was widely distributed among VET stakeholders and practitioners in Europe: policy-makers, officials in ministries and government agencies, school administration, social partners, and practitioners such as school principals, training managers and HR-managers. The most important dissemination channels included the European Commission VET week database, Cedefop website, Skillsnet/Skills

([121]) For more information see: https://www.cedefop.europa.eu/en/events-and-projects/events/vet-21st-century-future-trends-and-priorities

Panorama ([122]) and EPALE (electronic platform for adult learning in Europe). The survey was also disseminated at various events such as the VET expert conferences *Vocational educational training as a first choice* and *The future of vocational education and training in Europe*, held under the Bulgarian and Austrian EU Presidencies respectively. Project partners and country experts took care of dissemination at national level, using newsletters such as that of the Austrian Society for Research and Development in Education (ÖFEB) and the one of the Hungarian Tempus Public Foundation.

The main methodology approach was to compare EU and country averages. EU averages were weighted by population size based on most recent available Eurostat data ([123]). Quantitative data analysis was also complemented by information from open questions used in the survey, for example, in relation to past and future trends (Section 5.3) as well as VET desired characteristics and vision for the future (Section 5.5). If not otherwise stated, qualitative statements and quotes were taken from the answers to these open questions.

Various attempts were made at cluster analysis and correlations calculated. Several statistically significant but weak correlations were identified between future trends, purposes, visions of VET and personal characteristics of respondents including gender, age, organisational affiliation and more optimistic or pessimistic oriented views. Where applicable these correlations are highlighted in the data analysis.

Despite the care taken in designing the survey and the analysis there are some limitations. First, the survey is not representative: the sample is self-selected in that respondents were involved based on their interest in the topic. Second, the survey did not provide definitions for concepts such as 'vocational education and training', 'work-based learning', 'school-based VET', 'higher education', or other key concepts such as 'generic and transversal competences'. Countries have quite different understandings of these concepts (Cedefop, 2017b) and providing a smallest common denominator would have been too restrictive. Instead, we try to reflect on different national conceptions and country-specific backgrounds of VET in the interpretation of results. Asking about broad trends means sometimes

([122]) https://skillspanorama.cedefop.europa.eu/en

([123]) See Eurostat file: Demographic balance, 2016: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Demographic_balance,_2016_(thousands).png [accessed 20.7.2017].

combining several aspects in one question rather than differentiating the question. Consequently, for some questions there was no one-to-one relationship between questions and answers. These were concessions which had to be made to be able to have a comprehensive, but still short questionnaire. The comments respondents could provide to open question aimed at mitigating this problem.

5.3. Data sample

The overall number of valid responses was 1 458, including countries outside Europe. Among the non-EU countries, the responses came predominantly from Turkey (15) and Switzerland (seven). For the data analysis presented here we considered 1 385 valid cases referring to EU-28 plus Iceland and Norway. Countries and regions ([124]) with low response level (below 10 responses) were excluded; these were Latvia and the French speaking part of Belgium.

The majority of respondents were female (61%), and in Ireland, Croatia, Portugal and Romania (all countries with more than 30 responses) their share was even higher at more than 70%. If Romanian responses (which accounted for 24% of the sample) are excluded, female respondents continue to be dominant (56%). States with higher participation by male respondents were Belgium (Wallonia), Luxembourg, Malta, the Netherlands, Norway and the UK.

Most respondents were between 30 and 50 years old (49%) followed by those aged over 50 (43%). In Belgium (Flanders), Norway, Sweden and the United Kingdom the majority of respondents were over 50. The number of participants below 30 was comparatively small; they had higher representation particularly in Estonia, Lithuania and Slovenia.

In around 49% of the cases respondents were employed at education or training institutions, followed by those who worked for national, federal, regional or local authorities (around 19%) and universities or research organisations (9%). If Romanian respondents (86% of whom were employed in education and training institutions) are excluded, the share working at education and training institutions falls to approximately 37%. The participation of respondents working for trade unions, EU institutions/ international agencies, employers'

([124]) The survey considers regional differences, as in the French- and the Dutch-speaking part of Belgium.

organisations and enterprises was limited, as expected. Luxembourg, the Netherlands, Norway and Sweden have higher representation from these organisations. The typical day-to-day employment activities of the majority of respondents are vocational education and training (approximately 43%), followed by activities related to adult education (approximately 15%), higher education (around 13.5%) and general education (around 13%). The characteristics of the respondents reflect the target groups for the survey and the overall number of respondents met expectations.

5.4. Past and future VET trends

Between 1995 and 2015 there were several social, economic and technological developments that affected vocational education and training; many of these are likely to continue – and even intensify – into the future. For example, demographic changes such as ageing and immigration have changed the profile of VET learners, new technologies have led to new jobs and are continuing to stimulate the development of new training delivery methods. Since such external factors are decisive for the development of VET, the survey has focused on the impact of these factors and changes within VET. It has predefined 12 important trends within vocational education and training ([125]) which were presented by a meaningful title and a short description of a few sentences explaining the trend. Respondents had first to consider whether this development took place in their country in the past two decades, then whether they think the trend will continue. The respondents also had the opportunity to comment by replying to an open question which followed the rating of each trend.

5.4.1. **Past trends in vocational education and training: 1995-2015**

Figure 18 shows EU averages for the period between 1995 and 2015. These confirm all the 12 predefined trends but to different degrees, although the difference between the trend with the highest confirmation value and the one with the lowest is small, at less than a half of one rating point.

([125]) The trends were derived from previous analysis, particularly from Cedefop (2018d). In the first draft of the questionnaire more trends were included which were then reduced with only uncertain trends (for which there were no convincing data) being asked. For instance, there is no reason to ask about the ageing of the population.

Figure 18. **EU averages for past trends (1995-2015) and share of undecided responses**

1=strongly disagree; 2=disagree; 3=agree; 4=strongly agree
Source: Cedefop survey *Changing VET 2035* (2018), n= 1239-1342

The three trends with the highest confirmation values are 'shift towards learning outcomes', 'increasing work-based elements in curricula' and 'growth in VET provision at higher levels'. These are discussed in more detail below.

5.4.1.1. *Shift towards learning outcomes*

We asked respondents if they agreed that 'since the 1990s, increasing emphasis has been given to VET qualifications that are based on learning outcomes, often related to the way qualifications frameworks are designed'. While the trend was clearly confirmed by all countries, some differences could be identified. Respondents from Greece, Cyprus and Slovakia showed the lowest approval values and Estonia, Malta and the Netherlands the highest (see Figure 19). This may relate to the fact that countries are at different stages of implementation of learning outcome approaches. For instance, a Slovakian respondent highlighted that 'although the education system is formally based on learning outcomes, the practical implementation is not so effective i.e. the quality check needs to be improved; the focus on learning outcomes is often seen "as an exercise"'. In comparison, in Estonia, referring occupational standards and curricula to EQF (including learning outcomes) has been fully implemented within the past decade. In Malta and the Netherlands, all VET courses are described in terms of learning outcomes. It is interesting to compare this with future expectation. Maltese respondents expect that the shift towards learning outcomes will intensify, but this is less the case for the Netherlands. The UK showed the lowest value for the continuation of this trend and, although still positive, a reversal of the trend may be assumed for the UK. However, in the UK the language of learning outcomes has been retained, but not the substance.

5.4.1.2. *Increasing work-based elements in curricula*

We asked whether respondents agree with the statement that (in their country) 'apprenticeships have been strengthened or developed, and an increase of work-based elements and practice-based learning can also be observed in school-based VET and higher education'. The trend showed considerable variability in the answers (see Figure 19). South-eastern and south Mediterranean countries had the lowest approval values. This is particularly pronounced in Greece and Croatia where respondents were more likely to disagree with the statement. In the case of Croatia this may be related to obstacles regarding the practical implementation of work-based elements in curricula. For example, a respondent highlighted that the Croatian society does not easily accept innovation; another commented that the new national curricula for VET foresees an increase in work-based elements in some, but not in all curricula. Also, the decline of the work-based learning programme JMO (*Jedinstveni Model Obrazovanja*/Unified model of

Figure 19. **Country averages for selected past trends: shift towards learning outcomes and increasing work-based elements in curricula**

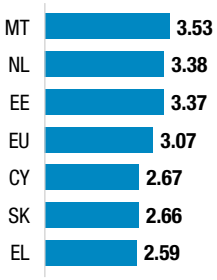
Shift towards learning outcomes

Since the 1990s, increasing emphasis has been given to VET qualifications that are based on learning outcomes, often related to the way qualification frameworks are designed.

Would you agree that this past development also applies to your country?

1= strongly disagree, 2= disagree, 3= agree, 4= strongly agree

Source: Cedefop survey *Changing VET 2035* (2018), n=1.310



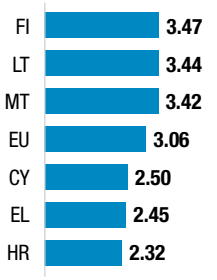
Increasing work-based elements in curricula

Many countries have strengthened apprenticeships and work-based elements in education and training. Practice-based learning in school-based VET and higher education is also expanding.

Would you agree that this past development also applies to your country?

1= strongly disagree, 2= disagree, 3= agree, 4= strongly agree

Source: Cedefop survey *Changing VET 2035* (2018), n=1.342



education) over recent years may be an explanation. In the case of Greece, respondents explained that liaison among education and enterprises is not strong enough and that the organisation of career guidance and monitoring in institutions providing apprenticeships needs to be improved. Finland is on the positive side. Most respondents either confirmed or strongly confirmed the increasing work-based elements in curricula in the past. This may reflect a recent curriculum reform which explicitly aimed at increasing work-based elements in the predominantly school-based Finnish VET system and finally contributed to its increased attractiveness (Chapter 4).

5.4.1.3. *Growth in VET provision at higher levels*

We asked respondents whether they agree with the statement that 'in the past 20 years there has been growth in work-related, labour market-relevant provision beyond the traditional heartland of VET at secondary level including the development of VET programmes within higher education or new VET qualifications at higher levels outside the higher education sector'.

Several respondents (in particular from Denmark, Estonia and Czechia) were unclear about the question (second highest share of 'undecided' responses, see Figure 20). This may relate to problems of distinguishing between professional and academic programmes within higher education and ambiguous concepts of VET at higher level (Cedefop, 2019a). Also, there are examples like Czechia which has seen a rise in higher professional schools in the 1990s, but a strong decline in the past decade due to demographics and the expansion of bachelor programmes at universities. Nevertheless, the trend was confirmed by the majority of respondents, with south-eastern and Visegrád States having the lowest approval levels, which confirms findings explained in Chapter 4. The reservations regarding the trend were most pronounced in Croatia and Slovakia where respondents were likely to disagree with the statement. For instance, a Slovak respondent explained that 'there are obstacles to introducing higher VET courses out of the higher education sector as the number of higher education students in the country is decreasing' and higher education institutions are likely to protect their existence. At the other end, respondents from France, Malta, Sweden and the UK were more likely to confirm the growth of VET at higher levels for the past two decades, which again fits findings presented in Chapter 4. Vocational education and training in Malta has become an increasingly popular option for learners after compulsory education, particularly at higher levels; VET providers in the country already offer professional bachelor and master degree courses and more VET qualifications are expected to be introduced at EQF 7. France has also introduced professional bachelor and master degrees (see Chapter 4). In Sweden, higher vocational education is driven by employer demand (according to labour market needs); an EQF 5 vocational qualification has been created and an advanced diploma in higher vocational education at EQF level 6 exists.

The most ambivalent of the 12 trends in terms of averages is 'stable pattern of enrolment' ([126]): there are countries which experienced increases and some with decreases. The statement showed the highest degree of variability and the lowest average confirmation value. However, it also shows the lowest share of undecided responses (see Figure 18); this may be explained by the fact that enrolment patterns have a clear quantitative

([126]) We asked if 'VET has been able to retain its position relative to general education in terms of enrolments given that demographic changes have led to a drop in the total number of young people attending upper secondary education and training'.

Figure 20. **Country averages for selected past trends: growth in VET provision at higher levels and stable patterns of enrolment**

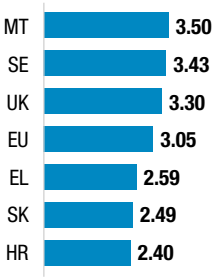
Growth in VET provision at higher levels

In the past 20 years there has been growth in work-related, labour market-relevant provision beyond the traditional heartland of VET at secondary level. This has included the development of VET programmes within HE or new VET qualifications at higher levels outside the higher education sector.

Would you agree that this past development also applies to your country?

1= strongly disagree, 2= disagree, 3= agree, 4= strongly agree

Source: Cedefop survey *Changing VET 2035* (2018), n=1.311



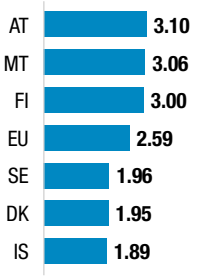
Stable patterns of enrolment in VET and GE

Demographic changes have led to a drop in the total number of young people attending upper secondary education and training. However, VET has been able to retain its position relative to GE in terms of enrolments at this level.

Would you agree that this past development also applies to your country?

1= strongly disagree, 2= disagree, 3= agree, 4= strongly agree

Source: Cedefop survey *Changing VET 2035* (2018), n=1.288



indicator while more ambiguous questions may be expected to produce a higher share of undecided responses ([127]).

Respondents from Denmark, Iceland and Sweden were more likely to disagree that VET was able to retain its position in relation to general education in the past. This coincides with decreasing attractiveness of VET for young people in Denmark and Sweden and the remarkable low share of VET at upper secondary level. A Swedish respondent highlighted: 'as changes in general programmes are less, they seem more stable and trustworthy, and therefore seem like a better choice for students and their parents'. In contrast, respondents from Malta, Austria and Finland were more likely to confirm the stable pattern of enrolment of VET in the past. It is interesting to compare this with the future expectations of these countries: 'In Austria, a share of around 80% in VET can hardly be expected any more', and a respondent

([127]) For example, the question whether 'employers or their representatives have been given more say over the content of VET and in particular the development of work-based learning or not' is the one with the highest share of undecided responses (see Figure 18).

also predicted that employers will reduce their participation in VET provision and new forms of general education and VET will emerge. A respondent from Finland explained that 'VET and general education are equally attractive and 50% of youth enrol in VET. Therefore, it is not realistic to say that enrolment in VET would increase'. Compared to Austria and Finland, where VET enrolment is expected to remain the same for the next 15 years, Maltese respondents anticipated an increase: 'VET education in Malta is becoming more attractive', 'a number of VET subjects have been introduced in lower secondary schools offering general education, and more VET subjects will be introduced within one year' ([128]).

Another trend with a high degree of variability (Figure A 1 in Annex 2) is 'increasing flexibility and individual pathways'. We asked respondents whether they agreed with the statement that 'in the past two decades VET at upper secondary level has become more flexible by increasing modularisation, and by allowing students to make more individual pathways and/or to use individual learning approaches'. Respondents from Greece, Cyprus and Hungary (Figure 21) were likely to disagree with the statement due to 'rigid, centralised and bureaucratic' systems that hinder flexibility; a Hungarian respondent explained that 'the modular system provides flexibility in theory, but not in practice' as the permeability between different programmes, levels, types and institutions of VET is very limited. In contrast, respondents from Finland strongly approved the increase in flexibility and individual pathways in the past (Figure 21): 'each student is drawn an individual study plan', 'it is an explicit goal of an ongoing reform of 2015-18'. The trend is likely to increase also in the next 15 years: 'the increase has not happened in all schools yet (in Finland), but this is about to become the norm'.

The trend with the lowest degree of variability is 'increasing efforts to enhance responsiveness of VET to labour market needs' (Figure A 1 in Annex 2). We asked respondents if they agree with the statement that although the faster pace of technological and economic change, including increasing globalisation, has been challenging VET in many areas in the past two decades, systems and instruments to make VET more responsive are also more widely used (including methods of skills anticipation or feedback instruments between VET and industry). While the vast majority of respondents agreed with the statement, those from Greece and Croatia were likely to disagree (see Figure 21). A respondent from Greece explained that

([128]) Based on the open questions of Cedefop survey *Changing VET 2035* (2018).

Figure 21. **Country averages (top and bottom 3) for selected past trends: increasing flexibility and individual pathways and enhancing responsiveness of VET to labour market needs**

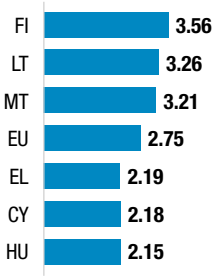
Increasing flexibility and individual pathways

VET at upper-secondary level has become more flexible by increasing modularisation, and by allowing students to make more individual pathways and/or to use individual learning approaches.

Would you agree that this past development also applies to your country?

1= strongly disagree, 2= disagree, 3= agree, 4= strongly agree

Source: Cedefop survey *Changing VET 2035* (2018), n=1.321



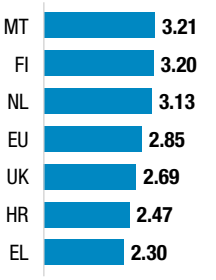
Responsiveness of VET to labour market needs

The faster pace of technological and economic change, including increasing globalisation, has been challenging VET in many areas; but systems and instruments to make VET more responsive are also more widely-used (e.g. methods of skills anticipation or feedback mechanisms between VET and industry).

Would you agree that this past development also applies to your country?

1= strongly disagree, 2= disagree, 3= agree, 4= strongly agree

Source: Cedefop survey *Changing VET 2035* (2018), n=1.299

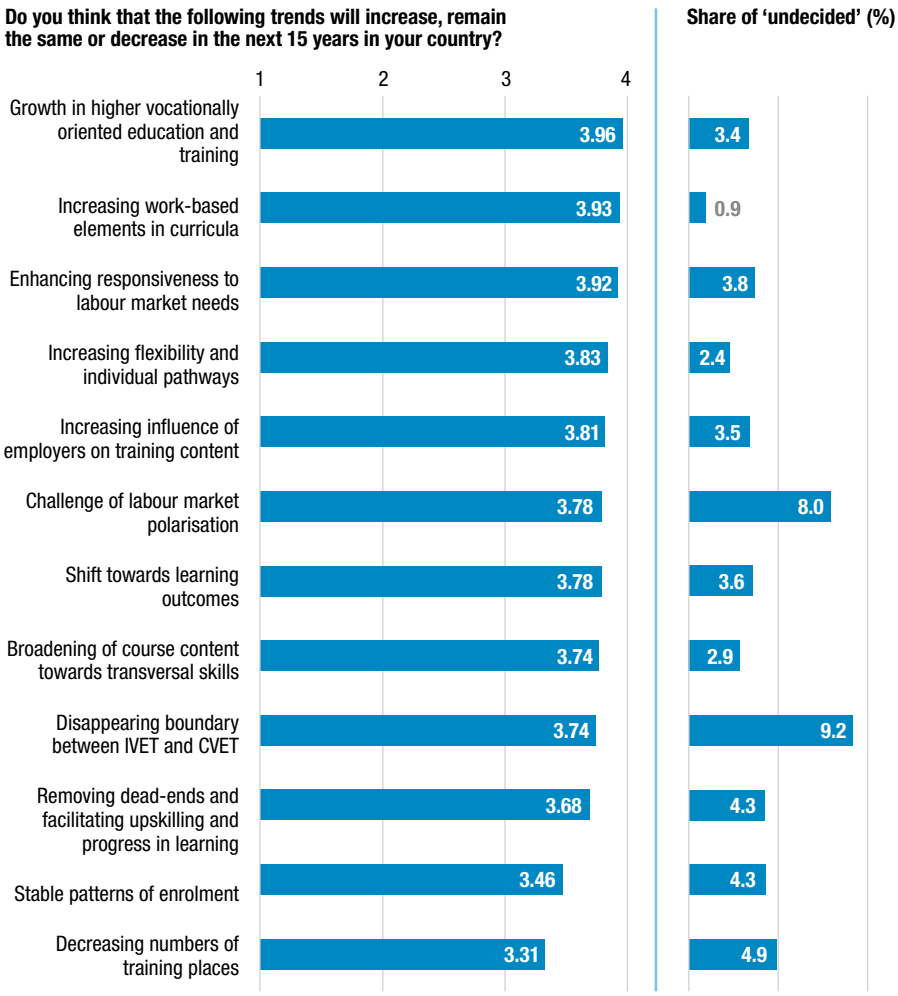


there should be distinction between secondary and post-secondary VET as the former is less responsive to labour market needs. A few respondents from other countries highlighted that education generally responds very slowly to the needs of the labour market and also that enhancing responsiveness to labour market needs may lead to neglecting the needs of learners.

5.4.2. Future trends in vocational education and training (up to 2035)

Questions concerning the future aimed at exploring whether the trends will increase decrease or remain the same in the next 15 years. As with the past trends, EU averages were calculated. While 11 specific trends are expected to increase up to 2035, the challenge to find sufficient company training places/ internships (formulated also as 'decreasing number of training places') is expected to remain the same or increase modestly (Figure 22).

Figure 22. **EU averages: 2035 and share of undecided responses**



1=strongly decrease, 2=decrease, 3=remain the same, 4=increase, 5=strongly increase

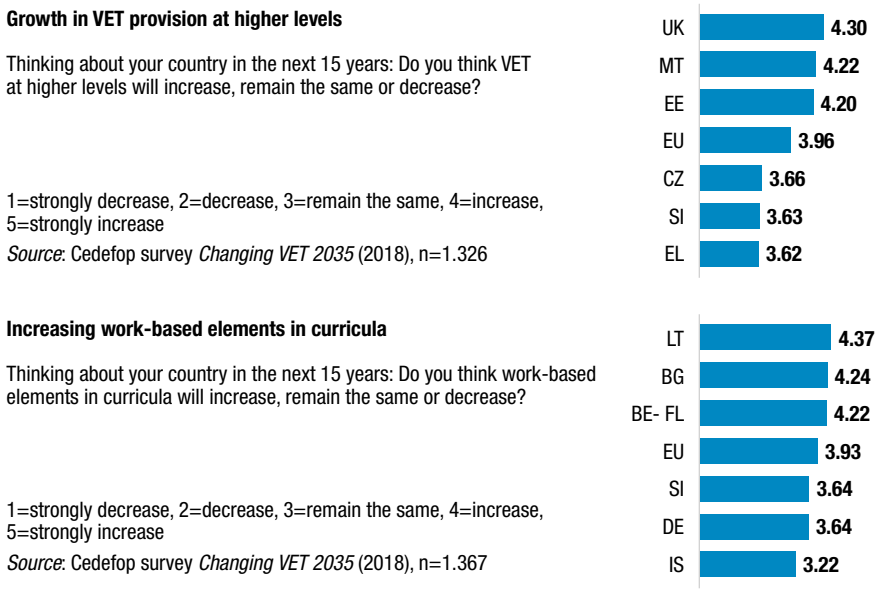
Source: Cedefop survey *Changing VET 2035* (2018), n= 1239-1367

The three trends with the highest growth prospects (as estimated by respondents) are 'increase of VET at higher levels', 'increase of work-based elements in curricula' and 'enhancing responsiveness to the labour market needs'.

Increase in VET at higher levels includes higher VET and professional higher education. The share of respondents who were unclear about this trend in the future is less than half the share of undecided responses for the same trend in the past. Among all the 29 countries, Denmark, Estonia, Iceland, Ireland, Malta, Sweden and UK showed higher expectations for the positive development of VET at higher levels. If we compare with the question related to the past the group of countries (those characterised by higher approval levels) is almost the same except for Iceland, so it seems that the trend is likely to become more pronounced: 'A new initiative on professional higher education was initiated in 2016 which will hopefully lead to new VET programmes at HE level'. UK respondents highlighted that the degree level is one of the fastest growing areas of VET in the UK. This can be explained by the introduction of apprenticeship levy (2017) on employers, as a result of which 'current staff are being encouraged to join higher/degree level apprenticeship schemes as a way of spending the levy'. In Estonia, EQF level 5 VET programmes are relatively new and still need to be popularised, but there is an increasing demand for them in the context of lifelong learning (the need continuously to update and upgrade skills and competences). The increase in VET at higher levels is not that pronounced in Czechia, Greece and Slovenia, (see Figure 23). Also, the approval rate for this trend in the past was below the EU average for the same countries. The number of candidates for higher professional programmes in Czechia has fallen rapidly in the past 10 years. The future of higher professional schools is under the discussion and one of the options is to develop higher professional programmes of these schools and to make them recognised as 'professional bachelor level programmes'. The education market in Slovenia is 'very competitive' and there is 'no room for new higher VET education institutions' according to one respondent.

Increase in work-based elements in curricula was explained in the questionnaire as 'strengthening of apprenticeships and work-based elements in education and training and / or expanding practice-based learning in school-based VET and higher education'. Respondents were more unclear about confirming this trend in the past compared to the expectation for its increase in the future; the question showed the lowest share of undecided

Figure 23. **Country averages (top and bottom 3) for selected future trends: increase of VET at higher levels and increase of work-based elements in curricula**



responses (compare Figure 18 and 22). Lithuania, Bulgaria and Belgium (Flanders) are the EU Member States with highest expectations for the positive development of work-based elements in curricula (Figure 23). These countries also have higher approval rates for the trend in the past, together with the Netherlands and Finland (see Figure 19). In these latter two countries, work-based elements have already been introduced in curricula for a longer time, so the expectation of increase in these elements in the future is probably weaker compared to countries where apprenticeship has just been introduced. A respondent from Bulgaria explained that the dual track was introduced in 2015 and since then the number of VET schools offering this type of programme has increased from 2 to 32. The schools struggle to meet the demand from business (for dual track training), so the number of programmes and work-based elements in curricula are expected to increase. In Estonia, work-based elements are expected to increase especially in higher education curricula as VET already features them. In Belgium (Flanders) work-based learning was optional and now is becoming

an obligation for certain education programmes, the Flemish government also promotes work-based learning and develops new curricula where traineeship is integrated, according to a respondent. For Germany, Norway and Slovenia the strengthening of apprenticeships and work-based elements in education and training and/or expanding practice-based learning in school-based VET and higher education are expected to a lower degree. A German respondent explained that growth in work-based elements in higher education curricula is anticipated, which will eventually compensate for the fall in apprenticeships: this may also apply to other countries where VET is understood predominantly as dual initial training, such as Denmark and Austria. A Norwegian respondent commented that work-based elements in curricula will increase the most in non-VET studies, making it difficult 'to discern VET education from other types of education'. In Slovenia, the lower level of expectation is related to the lower degree of involvement of social partners in VET. From all the countries covered in the survey, only Iceland expects the trend to remain the same; this may be explained by the low number of responses received for Iceland. Another explanation given by a respondent points to recent legislative changes allowing schools to determine the length of work-based learning, when many have an interest in reducing the length; further 'if there are obstacles in placing apprentices in a workplace, the schools organise work-based training in their facilities which does not have authentic working life responsibilities'.

Enhancing responsiveness to labour market needs was described as an increase in instruments (such as methods of skills anticipation or feedback mechanisms between VET and industry) to make VET more responsive to the labour market, given that the faster pace of technological and economic change has been challenging VET in many areas. Looking at the past, the trend showed little variability (Section 5.4.1), probably considered as quite 'obvious' by the majority of respondents. This is also projected into the future: an increase in instruments making VET more responsive to the labour market is expected in all the countries (including also Greece and Croatia which were likely to disagree with the trend for the past). The expectations for increase are highest in Bulgaria, Malta and Slovakia (Figure 23). In Bulgaria this can be related to the introduction of the dual track. In Malta, most VET institutions (further and higher education) 'have very strong links with industry'. In Slovakia, companies involved in shaping VET curricula are likely to increase. In Greece, Cyprus and Hungary the expectations are lowest; an issue indicated by the respondents was the distribution and availability of enough budget for VET.

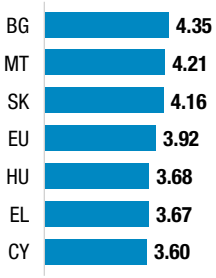
Figure 24. **Country averages (top and bottom 3) for selected future trends: enhancing responsiveness to the labour market and decreasing number of training places**

Responsiveness of VET to labour market needs

Thinking about your country in the next 15 years: Do you think that instruments to make VET more responsive to the labour market will increase, remain the same or decrease?

1=strongly decrease, 2=decrease, 3=remain the same, 4=increase, 5=strongly increase

Source: Cedefop survey *Changing VET 2035* (2018), n=1.319

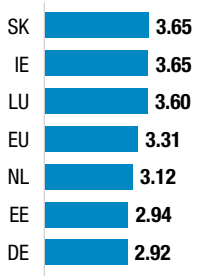


Decreasing numbers of training places

Thinking about your country in the next 15 years: Do you think that the challenge to find sufficient company training places/internships will increase, remain the same or decrease?

1=strongly decrease, 2=decrease, 3=remain the same, 4=increase, 5=strongly increase

Source: Cedefop survey *Changing VET 2035* (2018), n=1.301



The challenge to find sufficient company training places/internships (decreasing number of training places) is expected to remain the same for the next 15 years on average in the EU. At country level some differences can be observed. For example, respondents from Ireland, Luxembourg and Slovakia expect that the challenge is going to increase (see Figure 23) and that measures (such as an incentive system to support VET) need to be put in place: 'Unless the [Irish] government implements a clear strategy on the ground through establishing networks and communication routes with clear value and return of investment for employers, the national skills strategy will mean nothing'. Although Germany and the Netherlands showed the highest expectations regards the trend remaining the same, respondents pointed to a common obstacle: 'currently we face the opposite challenge, many companies are not able to find suited applicants to fill their VET positions. With smaller number of youths due to demographic changes this issue is expected to increase'. Respondents from both countries were also likely to disagree with the statement on decreasing number of training places concerning the past two decades.

Respondents were most undecided about the disappearing boundary between IVET and CVET in the future (Figure 22). The examples given to explain the trend were initial VET providers offering continuing VET programmes or/and increases in the number of adult learners in initial VET programmes. Ireland, Slovenia and the United Kingdom showed the highest share of undecided responses. A respondent from Ireland highlighted that the overlapping of IVET and CVET 'is likely to be influenced by lobbying, distribution of funding and how successful some organisations involved in basic adult education can argue for their continued existence'. Another question on which respondents were very much unclear referred to the increasing labour market polarisation in which mid-skilled occupations have been declining, challenging traditional VET provision (see Figure 22). Difficulties in answering the question may be related to uncertainties about what mid-occupations include as well as uncertainties over the impact of digitalisation and technological change on VET.

No differences were identified in the approval of future trends on respondents' gender, age and organisational affiliation. However, we identified differences for 10 trends based on whether respondents have more or less optimistic-oriented views ([129]). Optimists were likely to approve a future increase in all the 10 trends, while pessimists tended to either confirm the increase or to state that the trends will remain the same. For three trends, 'stable patterns of enrolment', 'removing dead-ends' and 'disappearing boundaries between IVET and CVET', this difference was particularly pronounced.

5.4.3. **Other important trends within VET or affecting VET**

We have asked participants to suggest additional trends to the 12 specific in the survey. Those mentioned by several respondents (more than 10 answers) could be roughly related to four categories: scientific and technological revolution (digitalisation, artificial intelligence), globalisation (of work), open knowledge and quality assurance of VET. Respondents highlighted the challenges caused by the 4th industrial revolution and the lack of readiness of VET systems with a proper response. For instance, it was commented that automation and digitalisation will increase the need for highly skilled labour, making manual labour obsolete. Globalisation and its side effects in terms

([129]) Differences based on this criterion were not found for two trends: the 'challenge of labour market polarisation' and 'decreasing number of training places'.

of increasing population, (forced) migration, destabilisation of democracies were predicted to have an impact on the society as a whole and also on VET.

Quality assurance of VET was mentioned as an additional trend and related to that improvements in qualifications of teachers and instructors in companies (including regular skills update, training of teachers in companies); the effective implementation of EQVET in European countries was also mentioned.

Attractiveness and image of VET were also highlighted. 'Attractiveness' is understood in terms of teachers delivering VET (pathways to VET teaching), students choosing VET programmes (also including opportunities for early school leavers) and society as a whole: 'the public still has a lower esteem for young people learning through VET programmes, even at master's level'.

On inequalities, inclusiveness and access to VET, respondents addressed the following topics: better and wider involvement of authorities in the design of VET programmes within less developed communities/regions (such as providing free transport and accommodation and increasing the number of scholarships and social assistance); and opening up of VET for specific/new target groups including socially excluded young people, students with special needs and highly motivated and skilled students.

5.5. Current and future purposes of VET

This section focuses on reasons typically used to support current VET provision and those that will be used in the future (the next 15 years). The main questions addressed in the chapter are:

(a) what characterises EU trends in terms of current and future purposes of VET?
(b) how do EU trends for the present and the future differ?
(c) what do country data show (compared to EU trends)?

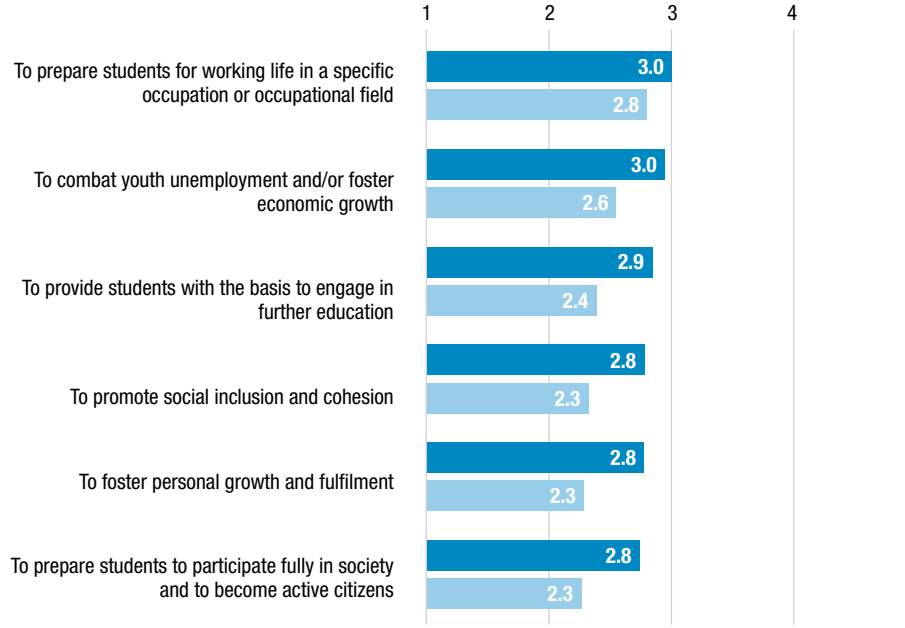
To gain data for the above questions we provided respondents with a list of six predefined purposes of VET and asked them to indicate the extent of use of each in the present and the future. The extent of use was based on a four-degree scale across the spectrum from 'to a very large extent' to 'not at all'.

On average in the EU, all predefined purposes for the present and the future were approved (see Figure 25) the ranking is one-to-one identical for present and future. 'To prepare students for working life in a specific occupation

or occupational field' and 'to combat youth unemployment and / or foster economic growth' have the highest approval rate while 'to prepare students to participate in fully society and become active citizens' is the lowest (see Figure 25). Despite the identical ranking, there are some differences in the degree of approval between EU trends for present and future purposes of VET. For the present, most of the purposes are approved 'to some extent' and only two 'to a large extent'; for the future all purposes are approved 'to a large extent' (Figure 25). This implies that the six predefined purposes of vocational education and training are likely to become equally important in the future.

Figure 25. **Purposes of VET in the present and in the future (next 15 years)**

There are a number of reasons typically used to support the provision of VET. To what extent are the following reasons currently used / will be used in the next 15 years in your country?



1=to a very large extent; 2=to a large extent; 3=to some extent; 4=not at all

Source: Cedefop survey *Changing VET 2035* (2018), n= 1323-1368.

Findings on the current purposes of VET correspond to results of the Cedefop VET opinion survey of EU citizens' perceptions of the role of VET in society ([130]). For the purpose with the highest approval rate, 'to prepare students for working life in a specific occupation or occupation field', is most pronounced as a current issue among respondents from Germany, the Netherlands, Austria and the UK. These countries have a strong tradition of work-based learning. For example, in Germany and Austria, VET is considered as dual initial training, with a strong practical part based on 'learning by doing' whereby young people become members of an occupation/profession with distinct occupational or professional ethos and occupational rights. In contrast, respondents from Croatia, Cyprus, Greece and Romania approved the above purpose only to some extent; this may relate to the fact that VET in these countries is predominantly considered as vocationally oriented school education. For the future, differences in country averages become smaller. Most respondents from all countries confirm 'to a large extent' that VET will aim to 'prepare students for working life in a specific occupation or occupation field' in the next 15 years and that 'employers will put more and more pressure on institutions (and ministries) to offer the programmes more tailor-made'.

The purpose with the second highest approval rate, 'to combat youth unemployment and/or foster economic growth' is most strongly confirmed (for the present) by respondents from Austria, the Netherlands, Spain, Malta and Italy. Spain and Italy are typically countries with a high share of youth unemployment (Chapter 4), so VET might currently be considered as one solution to the problem. For example, In Spain in recent years, a great effort has been made to introduce and develop alternance training models, dual VET, to promote youth employment and acquisition of a vocational qualification. A respondent from Italy highlighted 'there is a great need to connect VET with the PES (public employment service). VET should be included as one of the main strategies to reduce long-term unemployment and support transitions from education to the world of work for young NEETs'.

([130]) The opinion survey showed high levels of agreement with each of three statements about VET in society: Vocational education and training strengthens the economy of (COUNTRY); Vocational education and training plays an important role in reducing unemployment in (COUNTRY); and Vocational education and training helps to tackle social exclusion in (COUNTRY). The high levels of agreement (more than 70%) referred to vocational education participants, general education participants and participants with no upper secondary education (Cedefop 2017, p. 82).

In comparison, in Austria and the Netherlands, the share of youth unemployment is lower than the EU average and dual training is likely to be seen as a positive factor contributing to this: 'well-established apprenticeship schemes with close links between the education system and labour market have been associated with the relatively low youth unemployment rates observed in some EU Member States such as Denmark, Germany, the Netherlands and Austria' (Cedefop, forthcoming). Respondents from Croatia, Greece and Slovenia showed some reservation (approving to some extent only) that VET currently aims to combat youth unemployment and/or foster economic growth. This may be linked to the need for more (policy) measures in these countries related to the promotion of vocational education and training (including career guidance for pupils and parents), having a clear strategy about how to develop VET, securing more investment, and a stronger say for employers on VET content. Looking to the future, the majority of Croatian responses (in contrast to Greek and Slovenian ones) maintain their opinion that in the next 15 years VET will continue to aim at combating youth unemployment and/or fostering economic growth to some extent.

Providing students with the basis to engage in further education (as a current purpose of VET) is strongly supported by respondents from Slovenia, the Netherlands, Germany and Finland. This was explained by one respondent from the Netherlands by a clear pathway from VET programmes into further education: transfer from VET programme at EQF level 4 to a short cycle higher education programmes at EQF level 5 or starting with tailor-made qualifications at EQF level 5 offered by VET institutions. In Finland, VET is considered as (part of) lifelong learning, underpinning the firm approval of the purpose in the present. It is interesting to note that respondents from UK (where VET is understood as further training) confirm the purpose only to some extent for the future: 'the political will at the moment tends to ignore further education and put forward digitalisation as solving all problems related to the need for a skilled workforce'. Respondents from other countries referred to the need for upskilling and reskilling of workers and unemployed people due to rapid technological changes, which implies that IVET institutions should open up, also in terms of finding 'a balance between two goals of VET: to prepare people to enter the labour market and give tools to allow for further education (LLL)'.

The current and future EU trends in the purposes of VET were largely shared in most of the countries: for example, there may be a shift in the position of the top two preferred options, but the combination (typically: 'to

prepare students for working life in a specific occupation or occupational field' and 'to combat youth unemployment and/or foster economic growth') remains the same. While respondents from Greece and the United Kingdom showed identical ranking for the present and the future, respondents from Estonia and Finland emphasised fostering personal growth and fulfilment, preparing students to participate fully in society and providing students with the basis to engage in further education. They consider these to be the future purposes of VET in the latter countries. The option 'to provide students with the basis to engage in further education' is more important for Denmark, Germany, Iceland, Cyprus, Luxembourg and Poland.

Despite a statistical cluster analysis, we could not identify meaningful groups of countries either for the present, or for the future purposes of VET. Further, we did not find any differences in the approval of future purposes of VET as regards personal characteristics of respondents (gender, age and organisational affiliation). However, we did identify some differences based on whether respondents have a more or less optimistic view of the future. Optimists were likely to approve the purposes to a large or a very large extent, while pessimists tended to approve them only to some or to a large extent and so were more reluctant.

5.6. Vision for the future of VET

5.6.1. **Desired characteristics of VET for 2035**

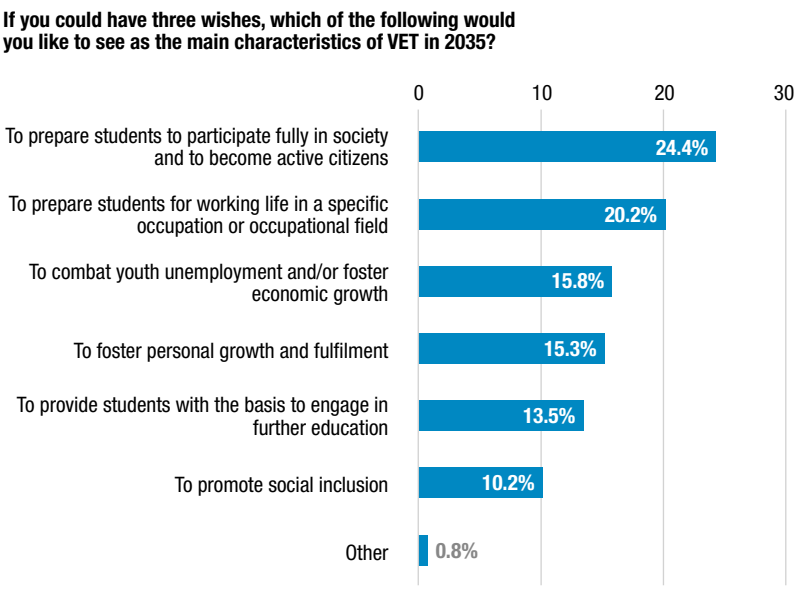
In addition to respondents' expectations of the way VET will be justified in the next 15 years (Figure 25) we also asked about the desired characteristics of VET using the same elements. However, the type of question differed as we allowed for multiple answers: respondents could express 'three wishes'. Consequently, the question about their future expectations and 'desired profile' of VET cannot be directly compared but 'to prepare students to participate fully in society and become active citizens', which was placed lowest for future purposes of VET, became the most desired main characteristic of vocational education and training for 2035 (Figure 26). The supposed key characteristic 'to prepare students for working life in a specific occupation or occupational field' comes second.

A closer look at the responses helps to explain this difference. In the combinations of the three wishes, the characteristic 'to prepare students for working life in a specific occupation' is mentioned in four of the five most

frequent combinations. However, and this makes the difference, the item 'to prepare students to participate fully in society and become active citizens' is mentioned in almost all combinations. This seems to suggest that aiming at active citizenship is an indispensable feature of any education.

Respondents also highlighted the need for VET to have a broader focus, as in 'fostering learners as critical and active citizens and not just citizens who can do a specific job'. Securing VET with a broader focus will ensure that it also contributes to social improvement, responding to societal needs and not only to economic ones. And yet the characteristic 'to promote social inclusion', which is closely related to full participation in society and active citizenship, is at the bottom of the wish list (Figure 26). A respondent explained that although the role of VET for social inclusion is important in many countries, it should be made sure that it is not VET alone that is responsible for it.

Figure 26. **Desired characteristics of VET for 2035**



Multiple response question

Source: Cedefop survey *Changing VET 2035* (2018).

The third most desired characteristic of VET for 2035 is 'to combat youth unemployment and/or foster economic growth' which corresponds to the future purposes of VET (Figure 25).

Summarising, the rating of the desired characteristics of VET for 2035 is not that different from the rating of the future purposes of VET, except that it reveals that preparing of students to participate fully in society and become active citizens is a prerequisite onto which vocational education can be built.

5.6.2. **Visions of VET for 2035 from a country perspective**

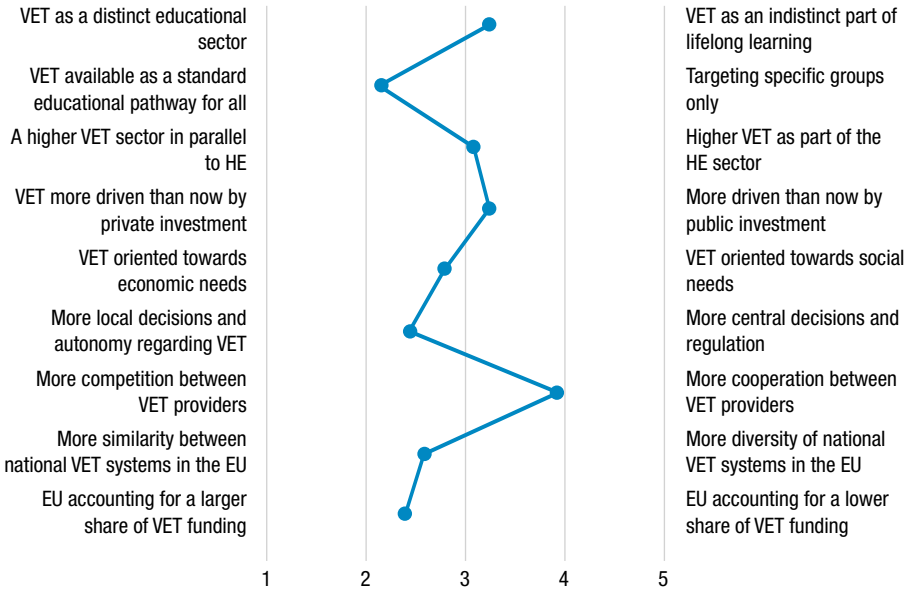
Visions for the future of VET were further explored by asking 'What should vocational education and training look like in the year 2035?' We used semantic differentials and suggested nine predefined dichotomic pairs of statements where respondents had to choose their most preferred option according to a five-point scale. The results described below are based on country averages and, in this sense, present a country/national perspective. In Section 5.6.3. we also present findings from an individual perspective.

Respondents showed clear preference for one option out of five. If these views about VET in 2035 materialise, the future of VET in Europe is more likely to become a standard education pathway for all, rather than targeted to specific groups, and to entail more cooperation between VET providers, rather than competition. It will involve more local decisions and autonomy, as national VET systems become more similar, and the EU will account for a larger share of VET funding (Figure 27). For four items no clear preference could be identified for either of the two options when looking at EU averages:

(a) VET as a distinct educational sector or as an indistinct part of lifelong learning;
(b) a higher VET sector in parallel to higher education or higher VET as part of the higher education sector;
(c) VET more driven than now by private investment or more driven than now by public investment;
(d) VET oriented towards economic needs or VET oriented towards social needs.

Among the items with clear preference for one option, the option 'more cooperation between VET providers' showed the highest approval value. Respondents from Lithuania and Romania confirmed the pattern but their confirmation rates were the lowest. The highest confirmation values were in Belgium (Flanders), Estonia and Ireland. In Belgium (Flanders) cooperation

Figure 27. **Vision for VET for 2035: EU average**



1= very strong preference for an option from the left;
2= strong preference for an option from the left;
3= equal preference for options from the left and the right;
4= strong preference for an option from the right;
5= very strong preference for an option from the right.

Source: Cedefop survey *Changing VET 2035* (2018).

may be understood as the need for common efforts 'to support workplaces, schools, trainers, mentors and teachers'; in Estonia, the common efforts are geared towards making VET a more popular choice. A respondent from Ireland (and also other countries) understood cooperation in terms beyond VET providers: 'Great VET will require collaboration and effective partnership between the State and employers with a corresponding investment in the capacity of teachers, providers, policy-makers and researchers'.

Another statement strongly approved was the possibility of having 'VET available as a standard educational pathway for all' in 2035. Respondents from Cyprus and the United Kingdom most strongly support such option. A UK respondent presented the following vision of VET: 'a fully integrated and supportive culture where young people are advised on vocational career

options from the age of 11 years, and those who wish to pursue vocational routes are then allowed to progress seamlessly into vocational education and training advancement until 18 years'. In terms of the averages of respondents, no country among those covered in the survey preferred the opposite pattern of 'VET targeting specific groups'.

An element of the future vision of VET includes the approach 'EU accounting for a larger share of VET funding'. Confirmation of this approach is high for Greece, France, Croatia, Cyprus and Poland. EU funds have supported apprenticeship schemes to a significant extent in all the above countries except Poland (Cedefop, forthcoming). Another common characteristic is the fact that, in all five States, VET is predominantly school-based and understood as initial vocational education. Our expectation that most of the respondents employed at EU agencies or international organisations will be in favour of this option was confirmed. This applies also to respondents working at education and training institutions, national authorities and enterprises.

Another element of the EU vision of VET for 2035 relates to 'more similarity between national VET systems in the EU', with Spain, Italy and the Netherlands showing the highest approval values. A Spanish respondent pointed that 'more than trying to make the systems similar, mutual recognition should be improved'; another highlighted the need for collaboration between EU countries to design quality programmes validated at European level (such as EU VET qualifications) as well as sustaining EU investment in common policies (mobility, mutual learning). No country preferred the opposite option of 'more diversity of national VET systems in the EU'. The majority of respondents working at enterprises, employers' organisations and education and training institutions also assumed that there will be more similarity than diversity between national VET systems in the EU in 2035. Representatives of other organisations did not show a clear preference for any of the patterns.

Although the EU averages for the options of 'VET as a distinct educational sector' or 'VET as an indistinct part of lifelong learning' were considered as equally possible for 2035, in some countries differences were identified. Respondents from Bulgaria, Denmark, Estonia, Finland and Sweden were likely to see VET as an indistinct part of lifelong learning in the future; the case of Finland this may be related to the predominant understanding of VET as (part of) lifelong learning. For the other Nordic countries, it may reflect the importance of adult learning, for Estonia and Bulgaria it might signal changes in the conceptualisation of VET. For example, a respondent from Bulgaria (where VET is typically understood as initial vocational training) highlighted that

there is a 'need to rethink our understanding and views regarding education as a whole and start thinking more about creating a learning environment where children, young people and adults can rediscover themselves and learn to live together. Learning does not happen only in the classroom'.

The increase in VET at higher levels (both higher VET and professional higher education) was the future trend with the highest expected growth (see Figure 22), yet for the EU average the options 'a higher VET sector in parallel to higher education' and 'higher VET as part of the higher education sector' are regarded as equally possible future solutions. Many respondents highlighted the need for fostering VET prestige as a higher education option: vocational and technical training should be 'nothing less than an outstanding alternative to university', 'a normal option for all young people in their academic career, without prejudice or barrier'. In France, Poland and Portugal the preference for higher VET as part of the higher education sector is more pronounced. Most respondents employed at universities preferred the option of higher VET being part of the higher education system. The opposite is expressed by a respondent from the Netherlands: 'in 2035 there will be a parallel system for VET at higher levels, next to the national higher education area. The system will have a focus on lifelong development of individuals, combining formal and non-formal education and training and will open possibilities for young people who have completed general education'.

While the EU average suggests that the EU will account for a larger share of VET funding in 2035, private and public investment are likely to have equal importance (see Figure 26). Only respondents from Malta gave priority to the possibility 'VET more driven than now by private investment'. This may relate to the existing strong links between most Maltese VET institutions and the industry and also to the launch of a National Skills Council (including employers' representatives) with the aim of identifying the skills needed in the future; this identifies training required in the area and creates incentives for continued upskilling, addressing skills gaps and mismatches. Respondents from Denmark, Ireland and Austria, where typically employer investment in apprenticeships is higher, were likely to prefer the pattern 'VET more driven than now by public investment'. A respondent from Ireland highlighted that 'there is a disconnect between industry on the ground around the country and the further education and training providers that exist'. In Denmark the expectation of lower private investment may be linked to the lower number of VET students and the need to make vocational education and training more attractive for potential learners: 'we need a huge change in mindset both

politically and among employers'. An Austrian respondent explained that employers face obstacles when engaging in dual training programmes, such as bureaucracy, lack of time to engage with apprentices, apprentices' lack of language skills or interest. Another respondent explained that, although VET is strongly led by employers in Austria, they will reduce their participation as new forms of VET and general education emerge. Only respondents working in trade unions and universities showed a clear preference for more public investment. The majority of respondents working in enterprises, employers' organisations and national authorities showed no preference for either option.

A balanced orientation of VET towards both economic and social needs characterises the EU average vision of vocational education and training for the future. Denmark and Malta differ from it as most respondents from these countries gave a clear priority to economic needs over social. In Denmark this may be related to the fact that VET is governed by the social partners, particularly trade unions and employer organisations, and they have a say on VET curricula. In Malta, there has been an increase in the role of employers in VET (including design of curricula) and this may have been projected also to 2035. The attitude of respondents (characterised by having a more or less optimistic view of the future) does not influence the preference for either pattern (VET oriented towards economic or. social needs). Logically, respondents representing employers' organisations were likely to prefer the orientation towards economic over social needs as a future vision of VET.

The final element in the vision of VET in 2035 concerns centralisation and decentralisation along with autonomy and regulation. The EU average shows no clear priority in this regard (Figure 27). However, several countries including Ireland, Cyprus, Hungary, the Netherlands, Poland and Finland showed a preference for vocational education and training characterised by more local decision and autonomy. In some of these countries autonomy for providers is already quite advanced (e.g. the Netherlands) or expected to increase (e.g. Finland): 'in the Netherlands the influence of the region on VET is becoming more important. Cities are prepared to invest in VET as well, stimulate collaboration between VET schools, schools for higher education, companies/labour market and local government'. Most respondents from Spain (where the Autonomous Communities have strong influence on public education policies including vocational education and training) preferred a 'balance between national and local regulations' (Elken, 2015).

We did not find any differences in the vision of VET for 2035 based on the personal characteristics of respondents such as gender and age.

5.6.3. **Patterns of visions for VET 2035**

The EU average is one way of looking at the data, but what if the average is composed of opposite views? Chapter 4 suggested that this could be the case, to some extent at least, for some items. Based on Ward's method ([131]) for cluster analysis we could identify four different patterns for the future vision of VET. Figure 28 illustrates three of these patterns ([132]).

Group 1 is the biggest group with 436 valid responses. Representatives from this group tend to expect that, in the next 15 years, VET will be the standard educational pathway for all, a part of lifelong learning; consequently, higher VET will be part of the higher education system. This group also sees a balance between economic and social orientation of vocational education and training as well as a balance between public and private investment, with the EU expected to account for a larger share of VET funding. It seeks more cooperation between VET providers, as well as more similarity between national VET systems in the EU. This group comes closest to what we describe as a pluralistic VET scenario in Chapter 6, with a highly integrated lifelong learning system and the wish for a balancing of economic and social needs.

Group 2 (332 valid responses) also would like to see VET as the standard educational pathway for all, but it envisages VET as a distinct education sector in 2035 and also opts for a higher VET sector distinct from higher education. This group comes close to what we describe as distinctive VET scenario in Chapter 6. This group of people also expect the future of VET to be more oriented towards economic needs and is not so opposed to competition between providers as the other groups.

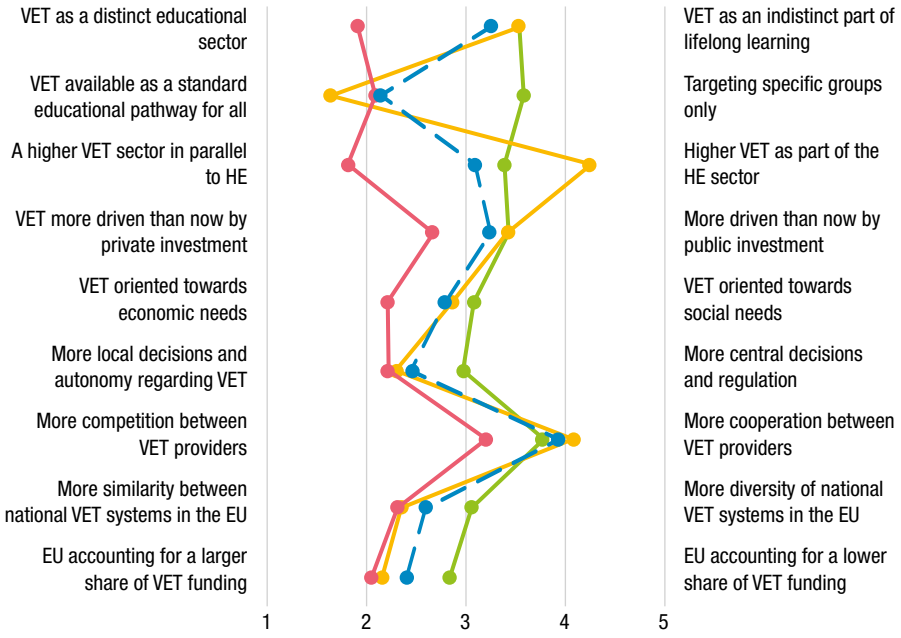
Group 3 (353 valid responses) stands out as the one with the highest number of non-specified choices, for example in relation to the higher VET sector, the prevalence of local/central decisions regarding VET, similarity/diversity of national VET systems and the share of EU investment in vocational education and training. Only in this group did respondents tend to see the future of VET as targeting specific groups only.

We did not find any significant differences concerning the personal characteristics of the three groups.

([131]) Ward's method is a criterion applied in hierarchical cluster analysis.

([132]) One of them (164 valid responses) is very close to the first group and appears to be a subtype of Group 1. The only, but important, difference is that this subgroup prefers that the higher VET sector is in parallel to the higher education system.

Figure 28. **Patterns of vision for VET for 2035**



1= very strong preference to an option on the left;
2= strong preference to an option on the left;
3= equal preference for options on the left and the right;
4= strong preference for an option on the right;
5= very strong preference for an option on the right;

NB: n=1 285.

Source: Cedefop survey *Changing VET 2035* (2018).

5.7. Conclusions

While differences between countries in the survey data are small, their identification and interpretation confirm our knowledge about changing VET contexts presented in Chapter 4. All trends identified in our previous research and discussed in detail in Chapter 3 and Chapter 4 were confirmed by a large group of VET stakeholders and experts in Europe. The increasing emphasis given to VET qualifications based on learning outcomes, the strengthening of apprenticeships and work-based elements in curricula (including the expansion of practice-based learning in school-based VET and

higher education) and the growth in VET provision at higher levels (higher VET and professional higher education) were unequivocally confirmed across all countries. These trends are also expected to increase in the next 15 years, but the shift towards learning outcomes seems to weaken in the future. If we look at the large VET countries (Germany, Spain France, Italy, the Netherlands, Poland and the UK) ([133]) the expectation for growth in VET at higher levels is most pronounced among respondents from the UK, less so among those from Germany and Poland. Germany has also the lowest approval rate for the increase of work-based elements in curricula by 2035 compared to the other large VET countries (which show similar approval rates). The expectation of growing efforts to increase the responsiveness of VET to labour market needs is stronger for France and Poland and less pronounced for Germany and the United Kingdom.

Whether VET has been able to retain its position relative to general education in terms of enrolments, and whether it has become more challenging to find sufficient company training places or internships compared to the number of potential apprentices or trainees, differs substantially between countries, including large VET countries. While Italian and French respondents expect that in the next 15 years it will become more difficult to find sufficient company training places, German respondents do not expect any changes. Therefore, average figures for Europe are less informative and a clear common trend for the future cannot be stated. Caution is required in extrapolating past trends: while there might be some alleged stability in Europe, the various developments can look quite different at country level. For instance, both from the analysis in Chapter 4 and the survey presented here, a sharp fall in the share of VET enrolments can be seen for some countries. However, according to the survey, some of these countries seem to be taking a U-turn and the share of VET is expected to increase again in the future, as in Poland and Denmark. While there are clear signs for that in Poland (see also Section 4.3.2), it seems to be a hope rather than an expectation based on firm indications in Denmark.

The disappearing boundary between IVET and CVET, which was highlighted in Chapter 3, is not so pronounced for the past in the survey data but is expected to increase in the future.

([133]) The large VET countries together represent 2/3 or 66% of the EU VET student population at ISCED 3 in 2015. For example, UK and IT have the biggest VET learner population at around 1.6 million each).

One particularly desired purpose of VET for 2035 points to the social value and broader function attributed to vocational education and training by respondents: to 'prepare students to participate fully in society and become active citizens'. This reinforces developments in the past and a further broadening of the conceptualisation of VET can be expected. If the expectation of VET stakeholders materialises, the future of VET in Europe is more likely to become a standard education pathway for all (rather than targeted to specific groups), to entail more cooperation between VET providers (rather than competition) and to involve more local decisions and autonomy. The EU is expected to account for a larger share of VET funding and national VET systems are likely to become more similar. Hence, the survey results seem to confirm the assumption that, in the next 15 years, similarities between VET systems will become stronger. However, at this point it is difficult to specify what these similarities will be. The assumption made at the end of Chapter 4, that we will see more balanced upper secondary education structures (in terms of the relationship between general and vocational education) and more mixed systems (in terms of parallel school-based and combined school- and work-based tracks), cannot be verified by the data available.

The large VET countries (France, Poland and the United Kingdom) more frequently differ from the rest of the group in their views of the future of VET. For example, respondents from France and Poland tend to see VET as an indistinct part of lifelong learning and higher VET – as part of the higher education sector – while the other countries do not have a clear preference in this respect ([134]). The Netherlands, Poland and the United Kingdom support the view that VET will be characterised by more local decisions and autonomy, while the rest of the group anticipates a balance between more local and more central decisions. Respondents from Germany, the Netherlands and the United Kingdom do not have a clear expectation as to whether EU will account for a larger/smaller share of VET funding. The rest of the group (Spain, France, Italy and Poland) take the view that EU will account for a larger share of VET funding.

Given that the survey *Changing VET 2035* is exclusively explorative we are aware of its limitations and consider its results complementary to previous research rather than as a primary source.

([134]) An exception is Italy which also showed preference for VET as an indistinct part of lifelong learning.

CHAPTER 6.

Scenarios for VET in 2035

Chapter 5 discussed both past developments and future trends of and visions for VET. This chapter exclusively focuses on the future but it builds on the previous work, applying the scenario method to VET. However, the aim of the scenarios presented here is not a projection of past trends into the future. The scenarios have been developed to serve as plausible and consistent pictures of VET as it may develop towards 2035. They are intended to draft a future reality by reducing complexity and ambiguity and to help to counter the general unpredictability of the future. The scenarios can be used to structure strategic dialogues about the future of VET and also be referred to as possible consequences of certain actions and decisions that we make today.

The model that was developed in Chapter 4 has been used as starting point for the scenario development; we refer to it briefly below. Before this, we present previous scenario projects and other selected literature on future-oriented studies of VET that guided the design of our own approach (Section 6.1). In Section 6.2 we present the methodology and conceptual background of our approach and three basic scenarios for VET. Section 6.3 discusses six detailed scenario variants and Section 6.4 provides some suggestions for the use of scenarios in strategic dialogues around VET.

6.1. Previous scenario studies

6.1.1. **Overview**

A list of relevant projects was used and partially extended in this review. The review was based on desk research and literature analysis. In some cases, interviews with people involved in previous scenario projects were conducted. The few international and national projects that use scenario approaches in VET form the core of this review, even if they originated in non-European regions (such as Australia and USA). Other future studies on VET and education were also included in case they provided interesting findings for the methodology and scope of this work assignment.

All science speaks out to the future somehow, as it produces new knowledge that should be used in our future activities. Further, in the second half of the 20th century futures studies (or futurology) developed into its own academic discipline. Supported by UNESCO, the World Futures Studies Federation was founded in the early 1970s and many other international and national organisations engaged in futures studies have been established since then. The first academic journals in that area, such as *Futuribles revue, Futures* and *Technological forecasting and social change*, have been joined by many more. Due to the nature of science, studies with a clear emphasis on the future are not found just within futurology, but in any discipline and also outside academic research.

Many works about the future become tremendously popular – e.g. *The limits to growth* (Meadows, 1972) – and the borders between science, popular science and fiction are frequently crossed. Two recent bestsellers well illustrate how broad the field actually is. In their book *Superforecasting*, Tetlock and Gardner (2016) show what is needed to become a good forecaster, by analysing several thousands of short-term predictions (events occurring within the next 12 months). For instance, they found that laymen with broad interests perform better than experts and simple rules and models were superior to more elaborated ones. In his second bestseller, *Homo Deus*, the Israeli historian Harari (2016) analyses what he sees as our ambition to become godlike and sketches a history of mankind for the next 50 or 100 years. He claims that by 2050 a new class of people will emerge: the useless class. Dealing with this new class economically, socially and politically will, according to his thesis, be a central challenge for humanity.

What becomes apparent from these examples and the literature that we have screened is the following:

(a) first, it is impossible to give an exhaustive and systematic overview of future studies, even if limited to a specific field such as education, or vocational education and training, simply because of the variety of contributions and sources;
(b) second, diverse contributions which do not necessarily deal with education at all can become valuable sources of inspiration for our study, both methodologically as well as content-wise.

While this makes our approach vulnerable to eclecticism, to guard against this we employed clear parameters to structure our literature research. The

more the following criteria applied, the more interesting the identified works were for us:

(a) a clear focus on VET and its systemic development;
(b) a long-term perspective (10 to 15 years);
(c) a reference to the years to come: older forecasts were considered less relevant;
(d) a focus on Europe;
(e) a methodology fit for our purpose;
(f) a good documentation/explanation.

This approach roughly resulted in the following three categories of literature ([135]):

(a) scenario studies in VET and education in general conducted in the past two decades;
(b) more recent, future-oriented studies in VET and other areas of education which do not necessarily involve scenario techniques;
(c) other literature which is interesting for specific aspects (such as new forecasting methods).

Scenario studies on VET are scarce, especially at the international level. The Cedefop/ETF project (1998-2002) *Scenarios and strategies for vocational education and lifelong learning in Europe* (Cedefop, 2002b) is the only larger international project we came across in this respect. We also found an interesting Australian project (*Focus on the future of VET*) which was implemented more or less at the same time, a local UK project on work-based learning, and a recent strategy project about the future of VET in Switzerland *Berufsbildung 2030* (compare Figure 29 and sources below).

Even if extended to education in general, (internationally published) scenario projects are rare. The OECD project *Schooling for tomorrow* from 2001 is such an example: it describes six scenarios for the school system ranging from stable bureaucratic systems to complete system meltdown ([136]).

([135]) We have collected roughly 150 references and 100 documents related to the topics. Other possible sources which have not been considered because the analysis would have exceeded the work assignment's resources are national skills strategies, national lifelong learning strategies and documents preparing new national legislation.

([136]) The OECD project *Schooling for tomorrow* ran from 1997 until 2008 and has produced numerous interesting publications and documentations of events about the future of schools. The scenarios referred to here can be found in one of the key publications OECD (2001). There is also a later publication on scenario methods and country examples OECD (2006).

A more recent example is the IPTS study ([137]) which identified key factors driving change. However, this provides one descriptive vision of the future of learning in 2020-30 rather than different scenarios. Amongst the national scenario projects on education, the UK programme *Beyond current horizons*, stands out in terms of scope. Over 100 researchers were included, and various topic-related reviews conducted, some of which were on VET-related issues.

A few studies have not applied a scenario method but have looked into past developments in education in Europe with the aim of identifying challenges for the future: these are equally relevant for our purpose. Green and colleagues (1999) analysed changes in the education systems of European Union Member States between 1985 and 1995 (after the 1995 EU enlargement and before the eastern enlargement). Many of the trends we have identified for the period 1995 to 2015 apparently started earlier (as noted at the start of Chapter 3). While perhaps less relevant for the design of future scenarios, a comparison between their findings and ours allowed us to define better the point in time from which certain changes can be observed.

Of equal scope and also financed by the European Commission was the so-called Maastricht study *Achieving the Lisbon goal: the contribution of VET* (Leney, 2004). It was probably the last comprehensive attempt to project past VET developments into the future. However, the aim was not to build a possible vision of the future of VET, but to predict the degree to which the Lisbon goals would be reached and how VET would contribute.

The most recent publication in this series of comprehensive, international analyses of VET was UNESCO's *Unleashing the potential: transforming technical and vocational education and training* (UNESCO, 2015b) ([138]). However, it reads more like a strategy than a thorough empirical analysis or forecast.

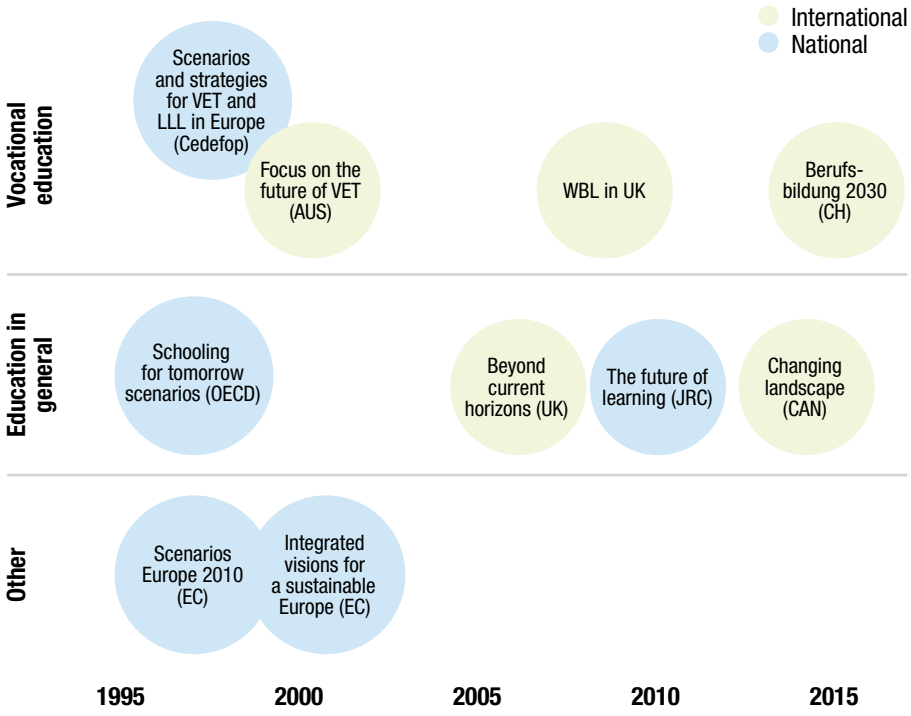
6.1.2. **Findings from selected projects**

The Cedefop/ETF project (1998-2002) *Scenarios and strategies for vocational education and lifelong learning in Europe* (Cedefop, 2002b) has a unique position among the reviewed literature, being the sole European scenario

([137]) Redecker, C. et al (2011). *The future of learning: preparing for change.* Luxembourg: Publication Office. A report by the Joint scientific and technical report from the Institute for Prospective Technological Studies.

([138]) The literature review also revealed that there are numerous older national attempts to anticipate future needs of VET – e.g. Pratzner and Russell (1983); Heidegger et al. (1991); Ruff et al. (1981) – which were not considered for this review, because their forecast horizon does not go beyond 2000.

Figure 29 **Overview on previous scenario projects**



NB: The size of the circles roughly indicates the scope of the projects.
Source: Cedefop, based on: Bertrand et al. (1999); Cedefop (2002b); Facer (2009, 2012); Johnston (2002); Mohamud et al. (2006); OECD (2001, 2006); Redecker et al. (2011); Rotmans et al. (2000); Shields (2015); Stoyanov et al. (2010); Van Notten et al. (2003); *Berufsbildung 2030* on SBFI website.

project on VET. It applied the scenarios approach to vocational training and lifelong learning at both country and European levels to help, for example, researchers and policy-makers to identify strategies that can meet current and future challenges effectively. However, the scenarios developed are actually not scenarios about VET, but about the future social, economic and technological environment of VET. The project provides scenarios at different scales: for training in some single Member States; context-specific scenarios referring to contexts like economy and technology, employment and the labour market, training, skills and knowledge; a final set that integrate the sector- and country-specific ones. The last unfold alongside two dimensions:

'socioeconomic development' and 'systematic divergence or convergence' (Figure 30). The scenarios were used at several conferences and events at national and European level to initiate and stimulate a strategic dialogue between stakeholders on possible future scenarios and political strategies. The results of the project were not so much the scenarios themselves as the discussions held at these events; the insights also guided our approach.

Figure 30. **Four scenarios for Europe from the Cedefop/ETF project (1998-2002)**

Socioeconomic development // systemic divergence or convergence	Competition rather than cooperation	Socioeconomic cohesion
Liberalisation, decentralisation and individualisation	**1. Competitiveness and splendid isolation:** *Divided Europe* Systemic divergences within and between countries remain and may be growing; education/training systems and providers are in strong competition; increasing polarisation and marginalisation of certain target groups, regions, sectors.	**2. Unity in diversity:** *Pick and mix Europe* The social and innovative role of education and training is recognised. However, no wider system development is taking place; systems and provisions develop only slowly towards mutual compatibility or transparency.
Increasing convergence and mutual learning	**3. Convergence without great coherence:** *Learning Europe* Despite prevailing divergences in the economy and society, converging regulations and provision are being developed, though the links to industry and private economy are largely missing. Efforts to ensure compatible rules and procedures at European level contribute little to increasing mobility and innovation. Systems and structures compete, and view European matters as peripheral.	**4. Balance and coherence:** *Towards a comprehensive European education and training system* The trend towards closer socioeconomic cooperation is confirmed through proactive cooperation between European Member States and pre-accession States in education and training. More people (young and old) gain higher levels of education and training. Resources are available through public and private funds. Systems develop in a comparable way. Qualification structures and education/training provisions become increasingly similar and compatible.

Source: Cedefop (2002b, p. 53).

As with the scenarios from the Cedefop project, the scenarios developed in the Australian project *Focus on the future of VET* (Johnston, 2002) take a broader perspective on the future, considering economic, political, and labour market aspects, among which is a perspective on vocational training. The orientation of these scenarios ranges from a generally more neoliberal development to a more corporatist and a crisis-related future. What can be taken from this study is its approach to scenario-building: scenarios are understood as coherent stories of a probable future, since, being coherent in themselves, they form some kind of 'ideal type' and draft a future reality by reducing complexity and ambiguity. By only speaking of a probable future (and not of extreme events such as the total breakdown of the natural environment) they help to counter the future's general unpredictability.

Both the Cedefop/ETF and the Australian study discuss the methodology of scenario building more generally. The Cedefop project produced a toolkit for scenario methodologies (Cedefop et al., 2004) and the final report of the Australian project provides extensive discussions of approaches towards scenarios (Johnson, 2002, pp.11). The sort of general guideline they provide is certainly helpful for any scenario project.

A third scenarios study consulted had a much narrower scope: *Work-based learning in the UK* drafted coherent stories of the future for a specific regional area (north-east UK) and focused on the local institutional environment. This small-scale study shows a careful process starting with stakeholder workshops and leading to meaningful locally oriented scenarios bearing names like *Blue sky*, *White elephant* or *The Titanic* (Mohamud et al., 2006).

As with many scenario studies, the study carried out by the Institute for Prospective Technological Studies ([139]) also involved extensive participation of diverse stakeholders through consultations via workshops, online consultations, group concept mapping and similar. Due to its heavy learning dimension, many of the methodological approaches applied, such as the development of distinctive individual characters (called 'persona'), were bound to this dimension. The further elaboration of such characters by using corresponding contextual comic strips is an original contribution to the inventory of scenario tools which also suggests the need to use vivid and lively forms of presentation to ease communication between stakeholders.

([139]) Redecker, C. et al. (2011). *The future of learning: preparing for change*. Luxembourg: Publications Office. JRC scientific and technical report. https://publications.europa.eu/en/publication-detail/-/publication/248604cb-9598-48a7-adad-8ff00e061a05/language-en

The large UK programme *Beyond current horizons* (Facer 2009) involved a number of participatory methods but was strongly geared to using available research expertise and findings by involving numerous sub-projects. The programme has an approach that explores different alternatives of choice and action, indicating that the future is both the object and the result of stakeholders' future decisions. Sometimes – as in the case of the Cedefop/ETF-project – a distinction is made between scenarios and strategies, where scenarios point to the contextual conditions that cannot be influenced by participating stakeholders, while strategies involve the immediate policies that can be formed by stakeholders.

But it can be difficult to clearly distinguish scenario projects from strategy projects, the latter often building on the former. This is, for example, true for *Berufsbildung 2030*, a project (until 2018) aiming to develop visions and strategies for Swiss VET. Along with the core partners of the project, the Swiss *Verbundpartner*, external representatives were also invited to contribute inputs and comments at different stages of the project, including via online tools that let them participate in discussions and even in live events. The project also simplified way it deals with 'megatrends' that will probably influence the future of VET. While most of the reviewed projects deal in some way with major trends like demography, digitalisation or environmental challenges, *Berufsbildung 2030* does so in a very systematic and structured way, resulting in a ranking by experts ([140]). Nevertheless, the project does not clearly state how such trends influence VET.

The Australian study *Focus on the future of VET* also built its scenarios on megatrends. By prioritising and clustering trends, the project produced two axes and then a two-by-two table resulting in four scenarios: The first axis was based on the set of trends associated with globalisation, electronic connectivity and the new economy (high versus low globalisation); the second was the nature of government engagement (high versus low interventionist government). These two clusters/axes refer to more probable trends; more unlikely trends were not considered for scenario-building. However, aside from this methodological attempt to relate expected megatrends to the future of VET, there are few clear statements on the potential effects of this

([140]) 1. Digitalisation (Winner); 2. Upskilling (also big influence); 3. Deindustrialisation (also big influence); 4. Globalisation (also big influence); 5. Raising mobility (not so big); 6. Flexibility in work relations (not so big); 7. Migration (not so big); 8. Demographic change (not so big – very diverse); 7. Lack of resources (not so big – very diverse); 8. Conflicts of generations (very little) (SBFI AG, 2018).

influence. Statements like 'Digitalisation will influence the development of VET by…' are scarce.

The trends depicted in the various scenario projects show a very high degree of commonality and overlap with the PESTLE-model ([141]).

6.1.3. **Lessons learned**

The literature on the methods of future studies and scenarios is extensive, but general findings are quite similar and were of little practical use for our project because of the specific individual requirements and size and scope of each of the projects. Nevertheless, previous research was helpful in clarifying the objectives of the current study and in making them more explicit.

In terms of the content of previous scenario studies, most projects in education start with similar external drivers, including those summarised in the PEST-model (political, economic, social, technological), and relate these findings to the development of VET. However, a general shortcoming is that the link between external factors and the future of VET is not explicitly modelled. This may explain why most studies deal with and restrict themselves to scenarios of future environments (as in the case of the Cedefop/ETF) or with the future of learning (as in the IPTS-study). One possible reason is that the complexity needed to describe the various external factors and their possible outcomes contradicts the requirements for scenarios to provide short and comprehensible stories of the future. Another explanation is that the links between macroeconomic, societal and environmental mega-trends and vocational education and training, or the education system in general, may be far less deterministic than people might believe, underestimating the potential active and independent role of education and skills policies.

In light of the findings of the desk research we have developed an approach to the development of scenarios that seeks to take these lessons on board by rooting the approach in the analysis of both the concepts and trends in VET and also the drivers of change, derived from the previous work in this project.

([141]) PEST, PESTEL or PESTLE describes a framework model of macro-environmental factors used in strategic management. The abbreviations stand for political, economic, sociocultural, technological; legal and environmental factors.

6.2. The development of three basic scenarios

Most scenario projects in VET (or education) emphasise the environment of VET rather than VET itself. In these cases, VET is implicitly modelled as a dependent variable subject to changes in environmental factors. However, European comparative research in particular has shown that certain factors might be dependent on VET, such as skill requirements and firms' recruitment strategies. VET policies may also follow their own internal logics. An important element in our approach, different to previous ones, is the relative independence of VET as a system or entity on its own.

We have tried to acknowledge the particular developments that VET has gone through over the past 20 years and started the design of scenarios from there ([142]). This means that insights gained through our analysis of diverse VET concepts and systems across Europe has directly influenced the design of scenarios for ideal-typical national VET systems.

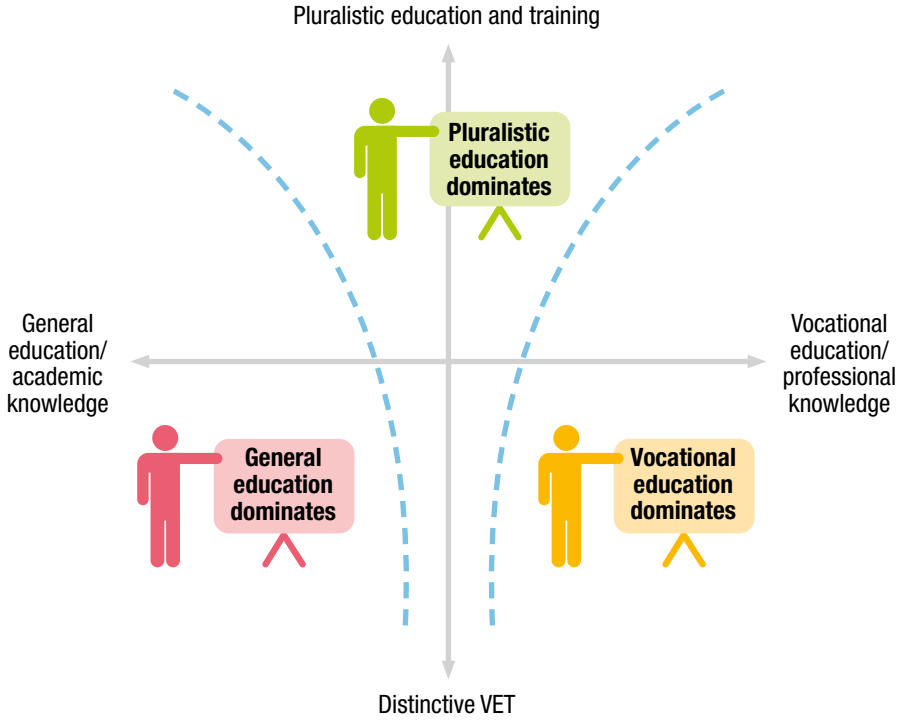
The analytical base of the scenarios is the two-dimensional model which we have also used for the description of changes at country level in Chapter 4. On the one hand it uses the position of VET within overall education systems, mainly its relation to general education: on the horizontal line we are asking if we will see academic or vocational drift). On the other hand, it also refers to the changing characteristics of VET. For this vertical dimension we distinguish between the two major developments identified: strengthening of VET, leading to what we called distinctive VET, and diversification of VET, leading to what we called pluralistic VET (see details in Chapter 4).

However, these two dimensions are not independent of each other; the more pluralistic an education system becomes, the more the line between vocational and general education will be blurred ([143]) and moving up the vertical line results in a blending of vocational and general education. Consequently, we have distinguished between three (and not four) basic areas in which our scenarios unfold. Figure 31 provides an illustration of these three areas.

([142]) To assist in scenario development, a scenario workshop was carried out in summer 2018. It was built on the detailed analysis of trends in the previous research of this project (summarised in Chapter 2, Chapter 3 and Chapter 4), the results of the stakeholder survey (presented in Chapter 5), the three-perspective model of VET (Chapter 1) and the two-dimensional VET model (Chapter 4). Results of this workshop were further developed by Cedefop in order to arrive at the final scenarios presented in this report.

([143]) Compare on this issue also Young and Muller (2010).

Figure 31. **Key dimensions informing scenarios**

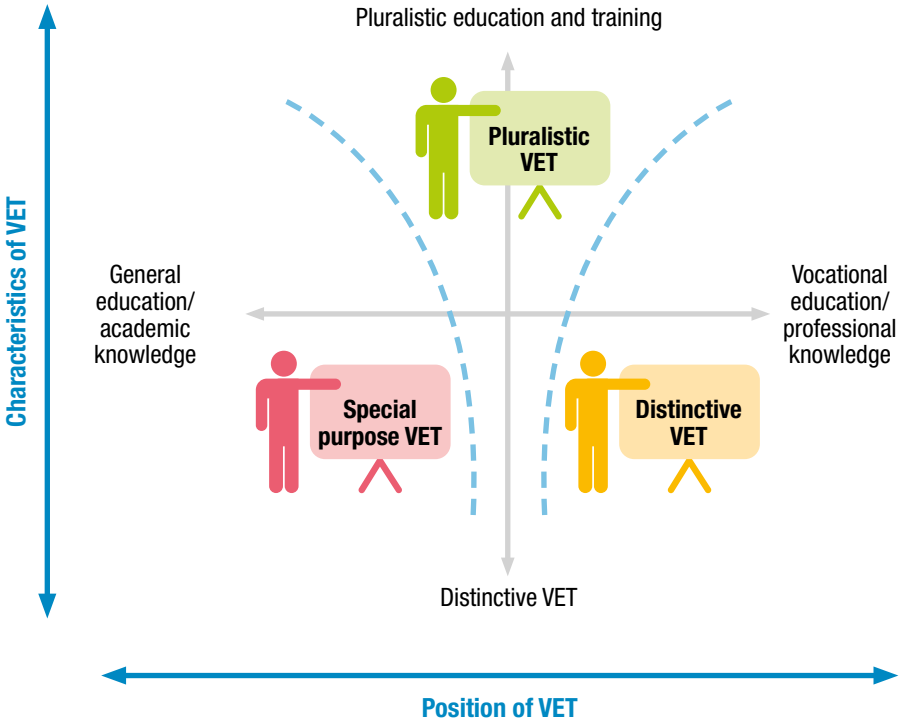


Source: Cedefop.

In pluralistic development, VET systems are becoming more diversified with fuzzier lines between them and general education. Conversely, where VET is seen as a distinct education and training strand, a return to its 'traditional roots' is encouraged. Where general education dominates, programmes and institutions are less work- and practice-oriented and general subjects are prioritised (for details on the model see Section 4.2).

To develop scenarios, this two-dimensional model provided the basis for a scenario workshop of experts and subsequent refinement by the project team. Three scenarios emerged: 'pluralistic VET', 'distinctive VET' and 'marginalised/special purpose VET' (Figure 32).

Figure 32. **Three basic scenarios and their position in the two-dimensional model**



Source: Cedefop.

These future basic scenarios are fundamentally different from one another and imply distinct policy choices in the years to come:

(a) pluralistic VET has lifelong learning at its heart; the distinctions between vocational and general education become increasingly obsolete;

(b) distinctive VET has occupational and professional competence at its heart; VET clearly differs from general education and dominates the education system, so we can speak of a 'VET hegemony';

(c) special-purpose or 'marginalised' VET has job-oriented training at its heart; specific forms of VET have survived in an education system which is dominated by general and higher education.

The dimensions deployed and the resultant scenarios stand out both in the mapping of the 1995-2015 developments (Sections 4.3 to 4.7) and also seem to be reflected in the stakeholder survey responses (Section 5.6.3). In this survey we asked: 'What should VET be like in 2035?'. By cluster analysis we were able to identify three different groups of respondents which show similarities with the three scenarios.

Group 1 tends to expect that, in the next 15 years, VET will be the standard educational pathway for all, a part of lifelong learning; higher VET will be part of the higher education system. This group also sees a balance between the economic and social orientation of vocational education. This group comes closest to what we describe as pluralistic VET.

Group 2 would also like to see VET being the standard educational pathway for all, but it envisages VET as a distinct education sector in 2035 and also clearly opts for a higher VET sector distinct from higher education. This group comes close to what we describe as the distinctive VET scenario.

Group 3 more or less ticked the option in the middle, but only in this group do respondents tend to see the future of VET as targeting specific groups. This group comes close to what we describe as marginalised/special purpose VET scenario.

In the following sections, the three basic scenarios are described in detail.

6.2.1. **Scenario 1: lifelong learning at the heart – pluralistic VET**

This scenario broadens our understanding and conception of what is meant by VET. The emphasis is on vocationally and labour-market-oriented learning at all levels and in all institutional settings. Vocationally oriented learning will not be restricted to the institutions explicitly defined as VET providers today but will form part of an integrated lifelong learning approach. It features the following characteristics:

(a) pluralistic VET implies a redefinition of VET's overall position in the education and training system. The focus on VET as a separate and distinct subsystem will become less relevant as there is a greater need for connecting and combining different forms of learning. The currently observed blurring boundaries between VET and general education at upper secondary level point in this direction, underlining the need to combine vocational skills and general subjects. The focus will be on overall skills and competence developments, not on VET as a separate sector;

(b) this approach also requires a new orientation or focal point where VET is anchored in broader qualification profiles with a weaker link to

specific occupations and jobs. It reflects the rapidly changing nature of occupation-specific skills and competences and the need for continuous updating and relearning. It also manifests the increasing importance of transversal skills and competence as a basis for coping with change;

(c) the VET target group will be significantly broadened, notably by addressing the needs of learners of all ages systematically and through a strengthened relationship between initial and continuing VET;

(d) individually tailored learning solutions, project- and problem-focused learning will become indispensable. A key objective will be to explore and combine the widest possible range of relevant learning forms and pedagogies;

(e) progression and pathways of vocationally oriented learning throughout life and portability of vocational learning will be key features of pluralistic VET. This requires transparent delivery at all levels and the reduction of barriers to transitions and progression;

(f) the envisaged shift to more comprehensive skills and competence strategies and policies will influence the governance of vocationally oriented learning. Broader skills sets and a weaker link to specific occupation and job profiles may require involving a wider group of stakeholders, adding to and complementing the role traditionally played by social partners;

(g) while EU-level policy will not interfere in the content and structure of VET, its role in relation to transparency, transferability and portability of skills and qualifications will increase;

(h) flexible pathways and the possibility to transfer broader skills sets across different types of education and training require even stronger coordination and governance mechanisms than today. If these mechanisms are a weak link, the pluralistic scenario runs the risks of fragmentation and increasing inequalities.

6.2.2. Scenario 2: occupational and professional competence at the heart – distinctive VET

The distinctive scenario seeks to strengthen the existing and dominant conception of VET as focused on entry into occupations and professions. It features the following characteristics:

(a) VET's position as a separate education and training subsystem with clearly defined providers and institutions is reaffirmed and strengthened. The visibility of the VET sector is seen as critical to ensuring parity of esteem with general education. As opposed to other education and

training subsystems, learning at workplaces is regarded as a key defining element of VET;

(b) VET will be organised around the requirements and identities of clearly defined occupations and/or professions. This ensures a close link to the labour market and emphasises a need for balanced commitment of as the state, employers and trade unions;

(c) young people in initial education and training will be seen as the future core target group. Expansion of VET to higher levels is in line with this perspective. Key tasks of VET will be to help make young people mature professionally, and to enable specialisation while at the same time being open to renewal and innovation;

(d) work- and practice-based learning will be given priority. A key concern will be to modernise apprenticeships and practice-based learning to ensure their relevance to new occupational realities and education and training providers at higher levels. Promoting active learning through apprenticeships will gain increasing importance;

(e) a main aim will be to establish work-based learning as a 'gold standard' across occupational areas and at all levels, including EQF 8. This is seen as ensuring a basis for future progression in people's learning and professional careers;

(f) social partners' role in governing VET will be reaffirmed, reflecting VET's link to occupations;

(g) EU-level policy may support the distinct model by promoting cross-border cooperation and agreements on occupations and sectors, for example setting common standards;

(h) the distinctive scenario runs the risk that rapidly changing technologies and labour markets raise questions about the role of medium-level skills and the long-term stability of occupations.

6.2.3. Scenario 3: job-oriented training at the heart – special purpose or marginalised VET

This scenario narrows down the understanding and conception of VET. Its focus is on training for jobs, reskilling and upskilling for short- and medium-term labour market needs.

(a) VET's position in the overall education and training system will be increasingly linked to continuing and further training in the labour market. Employability in its narrow sense is of key concern, as is the ability to respond to groups at risk. Employability in the broader sense,

empowering people to develop in a lifelong learning perspective, is taken over by general education at all levels. This reduced VET role is partly a reflection of the effect of declining youth cohorts, limiting the ability of traditional VET to 'compete' with other education and training sectors.

(b) This approach implies reorientation of VET to the skills needs of rapidly changing jobs and labour market functions. VET focuses on short- and medium-term skills needs; less on basic and transversal skills and competences. These latter are the responsibility of general and academic education and training.

(c) VET's target group is reduced, becoming focused mainly on adults in need of immediate re- or upskilling or at risk of unemployment and social exclusion.

(d) Shorter training courses, increasingly offered through open educational resources, are likely to become the predominant learning forms. While this is not exclusive to this scenario, the flexibility offered by these forms of learning, including at higher levels, is particularly relevant to this approach. Some individual tailoring is possible, as is limited on-the-job training. Attention to basic and transversal skills and competences is reduced, influenced by the focus on short- and medium-term skills needs.

(e) In terms of pathways and progression opportunities, this scenario emphasises a need for more transparent training offers. These will make it easier for adult learners to access courses and programmes directly relevant to their needs.

(f) This approach implies radically different VET governance, where individual companies and sectors play a key role. The role of the education and training system will be reduced.

(g) EU-level policy will need to ensure transparency and portability. However, this will form part of labour market policies rather than broader lifelong learning policies.

(h) This scenario runs the risk of underestimating the importance of basic and transversal skills and competence in meeting the needs of the labour market and society.

It is unlikely that the scenarios will materialise in their 'pure' or 'ideal' form as presented here. Aspects of one scenario might dominate a country's VET system, influencing the way VET is provided and understood, while aspects of the other scenarios might also be present for parts of a country's VET system. In this sense the above scenarios and their characteristics (which are summarised in Table 8) can be considered as basic analytical building blocks

to describe future VET systems. To be able to recognise these building blocks and use them as a tool we deliberately did not embellish the scenarios.

However, to make full use of the scenario method, we go one step further and present variants (in terms of different mixes) of these scenarios in more detail. By offering concrete stories of the VET systems of five European countries in 2035 we intend to stimulate further our imagining of possible futures of VET.

Table 8. **Overview of key features of the three basic scenarios**

	Pluralistic VET	Distinctive VET	Special purpose VET
How is VET understood?	VET is understood as vocationally and labour-market-oriented learning at all levels and in all institutional settings.	VET is understood as being focused on entry into occupations and professions, enabling specialisation, but also open to renewal and innovation.	VET is understood as employability in a narrow sense, ability to respond to groups at risk.
What is VET's position in the wider education and training system?	VET focuses on overall skills and competence development, not on VET as a separate sector.	VET is a separate education and training subsystem with clearly defined providers and institutions. Learning at workplaces is a key feature.	VET is increasingly linked to continuing and further training in the labour market.
What is VET's key organising principle?	VET is anchored in broader qualification profiles with a weaker link to specific occupations and jobs.	VET is organised around clearly defined occupations/professions ensuring close links to the labour market.	VET focuses on short and medium-term skills needs.
Who is it for?	Learners of all ages.	Young people in IVET.	Adults in need of re- or upskilling.
What type of pathways?	Flexible pathways; possibility to transfer broader skills sets across different types of education and training.	Work-based learning stands out as the 'gold standard' across occupational areas and at all levels including EQF 8.	Shorter training courses, increasingly offered through open educational resources.
What type of provision?	Individually tailored learning solutions, project- and problem-focused learning.	Work- and practice-based learning is given a priority.	Short training courses mainly in classrooms and workshops, with some on-the-job-training.

Source: Cedefop.

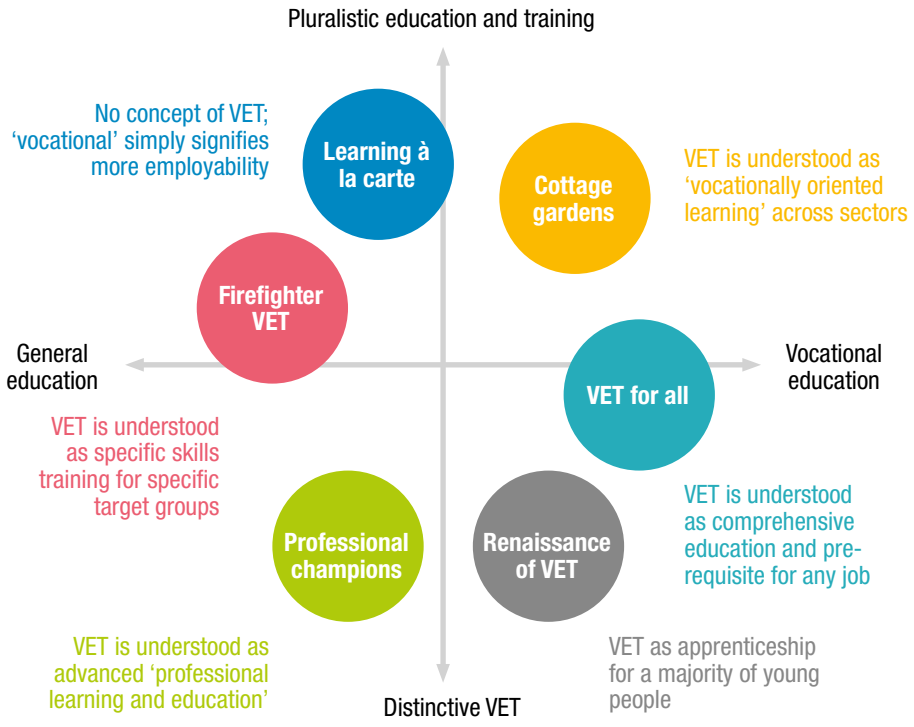
6.3. Six detailed scenario variants

Many alterations and combinations are conceivable within the three different basic scenarios described above. Further, rather than regarding the three basic scenarios as a particular development they could also be envisioned as ideal types on the basis of which concrete and contextualised scenarios can be developed. Below we follow this idea and present six concrete scenarios. Two are situated in the 'pluralistic segment', two in the 'marginalised segment' and two in the 'distinct segment'.

(a) Learning à la carte: describes the scenario for a country which has realised the most pluralistic vision of education in which the distinction between VET and general education has become obsolete.
(b) Cottage gardens: describes the scenario for a country in which a range of highly varied but well-arranged and well-organised education provision coexists and in which a vocational orientation plays an important role overall.
(c) Firefighter VET: describes the scenario for a country in which VET is mainly used for tackling deficiencies of the education and labour market system; VET is a minority track mainly concerned with supporting unemployed adults and early school leavers to (re-)enter the labour market.
(d) Professional champions: describes the scenario for a country in which a form of elite VET in the shape of higher apprenticeships has developed, loosely coupled with a mainstream education system which is characterised by general and higher education.
(e) VET for all: describes the scenario for a country in which a comprehensive system of VET has become the first choice and prerequisite for any further training or job.
(f) Renaissance of VET: describes the scenario for a country in which a modernised version of apprenticeship has become the major route at upper secondary level and a strong and distinctive higher VET sector has emerged.

Figure 33 illustrates the positioning of the six scenarios in the two-dimensional model. These six scenarios in relation to the three scenarios can be considered as a second step in a two-step procedure. They differ from the basic ones by virtue of the fact that further details, ideas and visions of the future have been added. Also, they are more specific as regards possible drivers. These drivers were deliberately neglected in the three basic scenarios because, as explained earlier, the same drivers can produce

Figure 33. **Overview of the positioning of six detailed scenarios**



Source: Cedefop.

different outcomes and vice versa. Finally, each of the six scenarios has been tagged with a metaphor or slogan created at the scenario workshop.

6.3.1. **Learning à la carte**

Learning à la carte, or the supermarket of learning provision, reflects a pluralistic VET scenario which has overcome traditional system dichotomies (such as 'general'/'academic' and 'vocational') and includes a variety of vocational-oriented learning offers tailored to individual needs. Learners are coached and supported to an extent never seen before.

6.3.1.1. *The scenario in a nutshell*

The scenario is driven by fundamental changes in employment and labour market regimes that are characterised by individualised working times and new patterns of employment. Because the 'fabric' of the labour market has changed, skill ecosystems are created that require continuous skills development. There is a breakdown of occupations and professions into smaller skills sets and combinations. VET as we know it from the 20th century has disappeared and is replaced by 'employability modules'. Skills are regarded as having a very short 'half-life'. The supermarket of learning provisions addresses new forms of part-time and self-employment as well as changing job roles in organisations and the labour market. Vast public resources are spent to support individuals' navigation through this new and imponderable terrain.

6.3.1.2. *The scenario in detail*

Accelerated technological change has created new patterns of complementarity between the work of machines and humans and led to an even more volatile labour market. Predicting skill demands has become harder despite the advances of big data analysis. Growing uncertainty about future job prospects has led to the introduction of an unconditional basic income. This has had a major impact on how people understand work and education. At the same time growing, extremism and populism has called for a stronger focus on civic competences in education. Increased international and European coordination and governance have been established as a means to address the challenges of globalisation. National policies are fuelled by significant funds from the European level and the impact of EU tools and policies has strengthened.

Fast-changing technologies and increased changes within jobs (new tasks) demand adaptability and agility from individuals. There is a constant demand from the labour market for skills supply and a high level of worker mobility (physical and virtual) is taken for granted. European cooperation supports this, for example, by introducing a European database on learning opportunities. In many spheres the State has shifted responsibilities from established organisations, institutions and systems to private providers and agencies. There is competition among providers that fulfil tasks in combatting social inequality and the tailored provision of lifelong learning. Resources have been shifted to individuals in order to provide greatest choice and generous individual learning accounts have become the means to do so.

Demographic challenges and demographic trends (ageing, longer working lives, migration) have led to a stronger focus on adult learners. To reflect the unique character of individual learning paths, education systems have undergone various reforms. A new radically overhauled regime of qualifications allows for the seamless stacking, accumulation and transfer of different qualifications, certificates and credentials of all types, including experiences from life and work. Technological developments have led to better ways of digitally capturing individual capabilities, potentials and achievements and provide trusted systems for documenting and valuing all learning experience. Lifelong learning has become a reality and non-linear and flexible career pathways have become common and accepted. There is a strong emphasis on continuous development, reskilling and upskilling for adults (at all levels), and also for obtaining emerging (new) basic skills. The EQF and the NQF are used as a basis for lifelong learning and as a map for systemic progress and reform.

The European dimension in education has been strengthened and is characterised by commitment, transparency, agility, and trust, enabling a strengthened focus on information instead of on control. Distinct sectors of education have disappeared ('blurring boundaries') and a European student card (documenting learning credits) is in place.

Lifelong learning is offered by a wide range of providers (schools, companies, HE-institutions, private providers) that show a high level of interaction, cooperation and coordination. All this is organised in a comprehensive secondary school system and unified higher education system which constantly tries to catch-up with the fast-changing market requirements (student and job market).

Learning is facilitated and supported in various ways. Technology is used to solve issues related to barriers (such as language) for lower-qualified and skilled people alike in order to enable further learning; and individual learning is facilitated by new/trusted models/technology. New learning and pedagogical approaches are offered as a reaction to the increased expectations of clients (learners) and particularly the expectations of new generations of learners (the cognitive evolution). The focus of the learning process is on efficiency: what works best for whom in what situation.

A general shift towards innovative pedagogies can be observed. Learning takes place in a variety of settings at multiple learning venues/sites, such as

classrooms, companies, workshops, MOOCs ([144]). A shift from instruction-based to more constructivist approaches has taken place and teachers and trainers now have the role of 'enablers'. These new expectations have also put pressure on teachers and trainers and led to reform of education for teachers and trainers emphasising their continuous professional development. Teachers are prepared for their 'hybrid' role as teachers/trainers, mentors and counsellors and for supporting active and open learning. The ratio between teachers (mentors, coaches) and learners has become a key quality indicator and by 2035 stands at one to five.

6.3.2. **Cottage gardens**

English cottage gardens look wild and chaotic but in fact they consist of carefully managed groups of flowers. The plural, 'gardens', rather than 'garden' reflects the scale of this scenario. It describes a pluralistic VET in which many different types of provision are allowed to 'bloom' through careful 'cultivation' through encouragement, support and incentives. Different flowers grow best in the different soils and other conditions which are to be found in the cottage gardens: these represent the different external conditions, including the needs of different groups of people (target groups), that provide the context for, and might be addressed by, VET. Although they look very natural, cottage gardens take a huge effort to maintain and their gardeners run the risk of losing track of where all the flowers (different types of provision) are to be found.

6.3.2.1. *The scenario in a nutshell*

This scenario has been mainly driven by greater individualisation and market-based policies that have enabled it. Vocational education is understood as 'vocationally oriented learning' and has become mainstream. A variety of nicely arranged and organised education provision coexists which are more or less vocationally oriented. There is no longer a clear distinction between IVET and CVET and most of the provision is modularised. Effective career guidance and sophisticated labour market intelligence are in place to allow informed decisions by individuals. It is easy to come back to education and change careers, because lifelong learning has become a reality. Whilst 'employability'

([144]) MOOCs stands for massive open online courses, i.e. courses of study made available over the internet without charge to a very large number of people.

is a guiding principle of post-secondary education, other goals of education include social inclusion, citizenship, and environmental awareness.

6.3.2.2. *The scenario in detail*

Increasing individualisation has been the most important driver of change over recent years. The rise of 'choice' has become the dominant leitmotif of western neoliberal governance, accompanied in VET by the rise of learner-centred pedagogies. Both aspirations and skill demands are now individualised. EU tools have supported the rise of frameworks to support individual skill acquisition, assessment and recognition. Individualisation has gone hand-in-hand with digitalisation that offers personalised products and lies behind the growth of the 'gig' or platform economy and new forms of (self-)employment. Concerns about work-life balance have resulted in part-time jobs becoming the norm. Employment careers are longer and more individualised.

On the downside, traditional interest groups have disappeared, weakening community ties and exacerbating inequality. Organised labour has declined and the links between VET, the labour market and the mechanisms of wage setting have become more complex. Societal, and especially employers', attitudes are characterised by a greater acceptance of different forms of VET and of the value of qualifications (or parts of qualifications) achieved through a variety of routes. Although opportunities for individuals continue to increase, there is concern about societal inequalities that, in some cases, is connected to hostility to migration and European cooperation. At the same time, a European movement has formed with a clear agenda to fight xenophobia and narrow-mindedness and promote safe and sustainable living environments.

A statutory right to lifelong learning is in place. This underpins access to a wide variety of complementary provision that meets the diverse needs of the population and which is on a sustainable footing as regards funding and stability in government policy. Validation of non-formal and informal learning is part of this right and has enhanced the status of practical knowledge and vocational skills in society.

A social consensus has evolved around the nature and role of education, featuring multiple pathways with equal value. The basic rule of the 20th century ('the higher the education, the higher the income') no longer applies, because there are just too many exceptions and more people follow their passion rather than immediate skills training for specific jobs.

In some sectors and regions VET has evolved into a clear, highly valued (set of) route(s) (VET as a trademark). In other spheres it predominantly fulfils a social inclusion function, as a well-designed 'second chance' route for early school leavers. In higher education there is a 'rainbow' of provision from pure to applied research, with both increasing academisation of VET and 'vocationalisation' of higher education having taken place in the preceding 20 years.

There is no 'preferred' way of learning. School-based and work-based options have equal status. However, a shift towards applied knowledge, project- and problem-based learning has been observed.

The main challenge of educational and social policy has become the risk of fragmentation in the 'garden', with so much variety, and the risk of increasing inequality. Enormous efforts have been put into labour market intelligence, graduate tracking, quality assurance mechanisms and algorithms supporting career choice. The government has developed various mechanisms to measure skills, learning outcomes and learner trajectories.

Career guidance counselling has increased and become much more professionalised. A new public institution has been set up in addition to the existing public employment service and health insurance system: the lifelong learning centres. The centres as such do not provide any learning, they act as hub for other learning providers and offer high-quality career guidance for individuals for free. While it was clear at the beginning that the lifelong learning centres have to be established as separate institutions, there are now debates about merging employment, health and education into one 'better life' institution. At the level of professions, new hybrid professions between physicians and career counsellors have been catching on.

Strong civil participation has gradually been built into governance arrangements to support the change in social values and to build confidence. The role of employer organisations is still strong but has declined over the years. Nevertheless, thanks to integration into respective governance bodies and a large degree of freedom at operations level, VET is employer/employment centred. However, the key funding source is mostly individuals and the State.

Digitalisation has opened up new opportunities, including for informal learning and for online accreditation (e.g. open badges). But digital technologies have also brought new challenges for teaching and learning in terms of negative effects on attention span, social skills and cognitive

processing, as well as how to ensure assessment standards are met. The infrastructure for training teachers and in-company trainers has been enhanced and embraces the new developments in digital learning. Teachers now have a stronger counselling and guidance role than 20 years before, and teacher training includes a focus on how to combine independent and digital learning with group-based teaching.

6.3.3. **VET for all**

'College for all' has been a policy slogan that has led to legislative acts and that is emphasising widest participation in general and academic education for all societal groups in the 2000s. In the new 'VET for all' era, the notion of developing comprehensive and vocational competence has been established as the major goal of all programmes in the education system. The ratio between school-based and work-based learning has reversed by 2035.

6.3.3.1. *The scenario in a nutshell*

VET for all describes a scenario in which VET has become truly the first choice and is understood as providing a comprehensive education and prerequisite for any further training or job. While the A-level (*Abitur*, *Matura* or *baccalauréat*) was the gold standard of the 20th century, a combined academic and vocational qualification (A-level + vocational diploma) has become the new standard. This has become possible by putting pressure on companies to engage in education. The need for faster and more responsive answers to labour market developments has led to a broad conception of VET that goes beyond the simplistic notion that a job and a qualification could perfectly match.

6.3.3.2. *The scenario in detail*

In the politics of the preceding 20 years in and across Europe, populist political forces have discovered the discursive power of investing in VET. It had been shown (not least by opinion surveys) that the public would gladly welcome more investment in VET. 'VET and employment for all' has been a slogan that has attracted a considerable number of votes, not least from those who have had disappointing experiences after finishing their academic degrees. Emphasis on more vocational skills has helped politicians both to show political support to the working class, distinct from the intelligentsia with

their academic education, and to engage in the reskilling and upskilling of the disadvantaged so that they can more fully participate in the world of work.

This sort of thinking received an additional boost when the negative consequences of digitalisation and automation became obvious and resulted in a second wave of (youth) unemployment in the mid-2020s. Through this crisis, the European Union realised that more had to be done and intensified the European pillar of social rights. In a new version launched in 2030, the EU proposed that, irrespective of their age, every European citizen should have the right to learn an occupation of his/her choice at a competent level and to work in this occupation and be paid for at least six months to consolidate his/her skills.

In this way, and alongside the unfulfilled promises of an increased academisation of the preceding 20 years, VET has come to be seen as a compass for the increasingly disoriented youth and marginalised populations. At the same time, VET has also increasingly become an option for those who graduated from classical higher education institutions to improve their employability. VET provides both a paid job, including authentic and motivating learning experiences, and a good basis for further education. Double-qualifications at the end of upper secondary education, combining academic and vocational qualifications, have become the new standard. There are also qualifications in VET up to EQF level 8 ('professional doctorates').

VET (overarching both IVET and CVET) has become the largest part of the education system. Some parts of general education at upper secondary level have remained and prepare people for a strictly discipline-oriented university education that is now a minor part of higher education as a whole, while the rest of higher education is considered to be 'professional higher education'.

Work-based learning within companies has become standard practice in any of the educational programmes (including the six-month trial period), whether school- or apprenticeship-based. Since most of VET is associated with paid work in companies, the overall financing ratio has shifted towards stronger contributions by companies. However, huge public funds are needed to keep the system running; the government uses ESF funds for this. From time to time, politicians propose the introduction of a training levy. Personal education accounts have already been introduced.

Quality standards, profiles and curricula have been developed for VET courses and qualifications that are taking into account knowledge from the respective vocational domain as well methodical and general knowledge. These standards serve as the basis for an integrated approach to more

problem-based learning, learning by doing, and work-based learning. In pre-vocational education, trial apprenticeships and job shadowing schemes have been introduced that have supported the VET boost. The role of VET providers is to service and support surrounding enterprises and sectors.

Overflowing online information and technologies that change learning provision reshaped teaching. In many contexts, teachers 'know' less than students: this is especially true for CVET and adult learners. Therefore, teachers themselves need to show authentic experience and knowledge and increasingly have the role of supporting learners to become part of communities of practice and to build vocational knowledge and expertise. Innovative teacher education programmes have been set up that integrate the high formal requirements of teacher recruitment in public education (master level education) with the possibility to accredit vocational experience and expertise.

6.3.4. **Firefighter VET**

In this scenario, VET is strongly dependent on urgent socioeconomic requirements, and is mainly used to combat problems of social exclusion and immediate labour market shortages. Rather than developing into a distinct educational sector, VET provision has become highly marginalised and heterogeneous, depending on targeted groups and purposes. At the same time, further expansion of the higher education sector has taken place that, in some cases, has taken over the functions of VET.

6.3.4.1. *The scenario in a nutshell*

Accelerated technological change and the automation of both routine and non-routine tasks has led to a hollowing out of the labour market and resulted in increased inequalities. VET takes place in various different margins of the education system, but is usually associated with poor jobs and remedial functions. Learning and instruction mainly follow a functionalist paradigm, are organised as terminated upskilling and reskilling programmes, and are directed to specific target groups. Any previous high-status VET has been damaged by problems with transferring credits between institutions, mismatches with employers' expectations of VET and the reduction of VET to its social inclusion function.

6.3.4.2. *The scenario in detail*

Harsh international competition has led to extreme competitive pressures for national economies. These pressures have resulted in employers being risk-averse. This has especially affected investments in skills, since there has been high uncertainty regarding whether such long-term investments would produce appropriate returns. Instead of long-term investments in human resources, firms' recruitment policies have mainly targeted skills available at short notice from the labour market. Digitalisation has led to widespread substitution of lower level jobs through technologies and there are efficiency gains through new automated processes. The heartlands of innovation in products and processes have increasingly moved to Asian economies, so only skilled and experienced workers have benefited from the economic situation. In some sectors, not least due to problems of mismatch between available qualifications and labour market demand, European and non-European migrant workers are used to fill vacancies.

In this competitive environment, social partners have focused on trying to maintain the status quo instead of developing future concepts of work, its organisation and remuneration. The labour market shortages of the 2020s have severely weakened European industries and, wherever possible, there has been investment in technologies. The tight situation in labour markets – especially for young people – has strengthened the academic orientation of individuals and families; enrolments in higher education have increased significantly. Individual assessments of the relative merits of investing in academic education and an open-door policy of many higher education institutions have reinforced this development.

European level initiatives to promote and disseminate good practices, such as apprenticeships and workplace learning, have been partly accompanied by national strides to improve the attractiveness, labour market responsiveness, and overall efficacy of VET. However, owing not least to a lack of funding and a reluctance on the part of decision-makers to institutionalise work-based VET, these attempts have not proved very successful apart from a few exceptions. Despite intensive efforts to raise the quality of secondary education, employers are still dissatisfied with the competences of graduates from compulsory schooling and the results of large-scale tests have not improved significantly. There is a huge shortage of teachers and major parts of the public budgets for secondary education are directed towards lower and upper secondary education. Wherever possible, individuals and parents are opting for academic routes.

Educational institutions at post-secondary and tertiary levels are characterised by an academisation in terms of programme titles and organisational structures. However, in terms of content, programmes with VET character have been established that are targeted to specific needs of regions or sectors. Some of them are successfully integrating cooperative mechanisms with employers and provide up-to date skills acquired in work-based learning, supplementing academic training. Such offers are functioning very well on the masters level, but have not developed into a systemic infrastructure. In some cases, semi-academic institutions have established routes for non-traditional students, such as those with employment experiences. However, such work-based offers are patchy and the overall quality is heterogeneous across regions and institutions. Often the focus needs to be very much in basic skills and competences instead of truly up-to-date technologies or innovative knowledge.

6.3.5. **Professional champions**

VET is used as a means to develop leaders, innovators and entrepreneurs in specific sectors; for a chosen few it is a 'royal road'. These 'professional champions' come from world-leading companies referred to as the 'hidden champions' ([145]). They benefit from prestigious VET programmes that develop the most up-to-date professional knowledge and know-how. For most students, however, the most common route is to stay in general education and aim at a bachelor degree.

6.3.5.1. *The scenario in a nutshell*

The chief function VET is to support the development of highly specialised vocational expertise, in which there is competence to carry out tasks professionally and to be able to take over responsibility and management functions. Thanks to cooperation between employers and workers' councils, education and training have successfully counterbalanced developments in digitalisation and support effectively the development of genuine human competence and skills. However, these features have materialised in only a few outstanding companies and in some sectors of the economy.

([145]) A term coined by the German management Professor Hermann Simon that has been adopted widely in management research (Wikipedia, 2018a).

6.3.5.2. *The scenario in detail*

Steady technological change has led to large-scale automation of routine tasks, but many medium- and high-skilled jobs remained. A strong societal view has developed that technologies need to be developed and regulated in accordance not only with respect to economic goals but also societal desires and beliefs. At the same time, in some sectors and occupations, automation has led to intensive restructuring and severe unemployment. While there is a broad consensus among social partners in some sectors that the development and nurturing of specialised competences and know-how is a necessity to survive, in other sectors companies have fully reorganised and do not have any trust in coordinative efforts between social partners and the State. 'Technology is changing too fast' is an argument that is often put forward.

Not least for demographic reasons, there are widespread skill shortages. In some cases, immigration has been used to counter this, but skilled individuals on the labour market enjoy a comfortable bargaining position and can select employers according to their preferences. To retain skilled and loyal employees some employers have adopted participative work practices and management concepts. Especially for some large family-owned companies it has proved to be less costly to train people rather than recruiting them from the labour market. Often such companies work in networks to exploit fully the potential of international markets. Sectoral organisations support this kind of cooperation. However, many companies have consequently shifted their focus in terms of recruitment and training policies: comprehensive job profiles have been broken down into different tasks that have been substituted by technologies on the one side and higher qualified teams of graduate workers on the other. Skills have increasingly become company-specific.

Companies that strongly support and engage in VET are often producing in a niche market, in which they have longstanding experience and know-how. This happens in highly export-oriented 'high-tech-markets' but also in the new emerging artisan economy that builds on longstanding traditions.

To match this, distinct VET provision has developed that also covers only a niche within the overall education system. In this system, curricula, training regulations and assessment practices can be flexibly adapted to the needs of the local economy and differentiated individual learning pathways. They are based on a clear definition of a broad set of occupational core skills, including vocational know-how and self-management and communication skills. Attractive advanced apprenticeships have been developed that allow

for progression up to EQF-level 8. These are leading to specialist/expert and leadership/management jobs. Available public funds went into this system but a much larger amount of money was transferred into the expansion of higher education following social demands and new patterns of recruitment that have developed in other sectors.

This distinct kind of vocational education takes place in strengthened centres of excellence that are cooperating strongly with other institutions on a regional and sectoral basis, within alliances for learning and innovation. The centres are supported by local industry but also take on a supporting function to small and medium-sized enterprises. They are integrated service providers that service different age-groups under one roof. Instructional practices are largely characterised by project-based learning, professional reflection and similar forms. Recruitment policies, exclusively based on expertise, are implemented that allow teachers and trainers with different profiles to work in vocational centres. There are also incentives and requirements for teachers to participate in lifelong learning and to move back and forth between education and industry. Some are cooperating closely with organisations and companies in their respective fields, while others are involved in research and development projects. Examples are the Academy for Master Instrument Crafting or the Institute for Additive Manufacturing.

6.3.6. **Renaissance of VET**

Various developments have resulted in VET becoming a first choice. It experiences a real 'Renaissance'. Apprenticeship is the norm in VET and provides the basis for high wages in a competitive labour market characterised by skill shortages. VET centres for excellence, innovation and entrepreneurship have been set up. They are at the same level as university research institutes and provide tailor-made innovative VET solutions.

Steady technological change has led to large-scale automation, but most medium- and high skilled jobs have remained untouched. Together with low labour mobility across borders due to restrictive migration policies, this has resulted in severe skill gaps; hence priority has been given to setting strong incentives for young people to choose VET. European programmes provide the opportunity to do short-term trial apprenticeships abroad, which

is standard practice for young people. Work-based learning dominates and is systematically developed and improved …

Respecting the design of our own scenario methodology, we leave this scenario unfinished and would like to invite the reader to continue it by using his/her own imagination and possibly to create new scenarios. Table 9 below brings together the main characteristics of the six scenarios in a comparative way, aiming to inspire thinking about further scenarios.

6.4. Drivers, critical junctures and links to other scenarios

While each of the six scenarios was introduced by a specific economic context and referred to critical junctures which makes the scenario more realistic, we did not include these aspects in the above summary table for a specific reason. On the one hand we are aware that the reference to possible external drivers is needed to complete a scenario story; on the other hand, however, we do not want to create the impression that an individual scenario exclusively depends on specific external impacts. In the model we applied, changes to the VET system are neither deterministic (in terms of VET being fully dependent on external drivers) nor are they pure chance. There are at least two important uncertainties involved we would like to emphasise.

First, there is the uncertainty we have in mind when talking about future external trends (technological change, demography/migration, societal trends). Although we know that technological development or migration will continue, we simple do not know how fast or to what extent. For reasons of simplicity we could say technological change will be steady or accelerate, migration and labour mobility will be low or high, EU cooperation will strengthen or soften, and climate change will be steady or increase. But about all these things we are necessarily uncertain. Adding up these dimensions increases both the number of possible combinations and the uncertainty exponentially, despite the simplifying assumptions we could make for one dimension. We have to be clear that the external drivers we refer to are only a selection of possible drivers out of a much larger set of possible influences. Therefore, they are illustrations rather than preconditions for the scenarios presented.

Second is the uncertainty over how systems or policies may react to external drivers. We are borrowing here the concept of ‘critical junctures’ to illustrate this. ‘[…] critical junctures are cast as moments in which uncertainty

as to the future of an institutional arrangement allows for political agency and choice to play a decisive causal role in setting an institution on a certain path of development, a path that then persists over a long period of time' (Capoccia, 2015). To use a prominent example: a further refugee crisis could lead to strengthened European cooperation in migration policy and the upscaling of Frontex (or even to a European army); alternatively, it could also lead to further disintegration of the European Union and the erecting of walls and fences at national borders. Hence, the same stimulus can lead to different responses, and the time windows within which such a political decision is made are considered 'critical junctures'.

Consequently, the political decisions made at critical junctures that we have used to illustrate the scenario stories are, again, not a causal reaction to a certain set of external drivers: they are an illustration of possible options at political crossroads. Table 10 summarises the external drivers, critical junctures and institutional changes assumed in the six scenarios. Developments other than the ones listed in the table could be equally relevant for a scenario to materialise.

6.5. Scenarios and future perspectives on their use

How can dialogue on VET policies at European level, as well as inside countries, be supported by the scenarios? What is the role of scenarios in policy learning? To address these questions, we first need to look at the particularities of the scenario approach that we have chosen for our project. We have built scenarios on two levels of detail: our three basic scenarios and the six detailed variants. The three basic scenarios link closely to the analysis of trends and developments that formed the core of this project: how has VET developed over the past 25 years and what does this mean for the future? We found that there is a large variety of understandings of VET and developments of national systems across the Member States of the European Union. Despite the many joint European initiatives that have led to greater mutual understanding and have enabled European cooperation, diversity and different developmental paths are a feature of European VET policy that will continue. In the following sections we reflect on the use of the scenarios against this diverse background.

Table 9. **Overview of six detailed scenarios**

	Pluralistic VET		
	Learning à la carte	**Cottage gardens**	
How is VET understood?	The concept of VET has been replaced by more generic ones such as skills and human capital. The term 'vocational' simply signifies 'employability'	VET is refocused as 'vocationally oriented learning' taking place in education, at work as well as in society overall (lifelong and life-wide)	
What is VET's position in the wider education and training system?	The distinction between VET and general education has become obsolete and of little consequence to policies and the design of institutions	Hybridisation of and permeability between VET and general education is significant and seen as necessary for responding to changed needs of learners and the labour market	
Who is it for?	Employability modules can be found anywhere within the system. There are no particular target groups	Diverse target groups spanning all levels and all age groups	
What type of pathways?	There are no (explicit and distinct) pathways, but only self-assembled menus. Learning à la carte or the idea of lifelong learning as a supermarket of learning provision dominates	Established pathways and emerging trails between and within the 'gardens'	
What type of provision?	Responsibilities devolved to wide variety of providers. Individualised learning with high levels of support in terms of guidance	Different gardens, different types of providers. Cultures vary largely, but overview provided, linkages established and transfer-accumulation enabled	

	Distinctive VET		Special purpose VET	
	VET for all	**Renaissance of VET**	**Firefighter VET**	**Professional champions**
	VET is understood as comprehensive education and training and a prerequisite for entering any job, be it in industry, crafts or services	VET is understood as modernised apprenticeship and a precondition for excellence in innovation and entrepreneurship	Mainly classroom-based learning and learning in workshops, with some on-the-job-training	VET is understood as specialised 'professional learning and education' for excellence in a context of mass general education
	VET is the first choice of young people. VET is strengthened across all sectors and occupations of the labour market	While VET has retained its traditional focus on young people, VET centres for innovation and entrepreneurship are at the forefront of developments	VET is strongly connected with active labour market policies, providing mainly qualifications at low levels (EQF 2-4)	VET has become a small, but important and prestigious pillar (EQF level 4-8) including advanced apprenticeships
	Retains focus on initial training for entry to the widest possible range of mainly (but not exclusively) medium-skilled occupations	Focus on initial training for entry to occupations, but broadened target group to attract high achievers and ambitious learners	Measures are mainly addressing adults (at risk), early school leavers and individuals with immediate, short-term skills needs	VET is targeting talented young professionals, selected by very competitive procedures set by employers
	A vocational leaving certificate has become standard, after which students continue in universities or higher VET	Explicit pathways pointing towards excellence and advanced VET are in place; traditional pathways like the *Meister* are modernised and expanded	No particular pathways; emphasis on remedial measures for people at risk or in need of immediate skills updates	Royal Road: VET is used as a means to develop leaders, innovators and entrepreneurs for tomorrow in specific sectors
	VET centres strongly cooperating with enterprises, serving all age/target groups	Learning in companies and at a new type of VET centres for excellence, entrepreneurship and innovation	Mainly short courses offered both by higher education and labour market training providers	Dual programmes offered by competitive employers in cooperation with universities/colleges at higher levels

	Pluralistic VET		
	Learning à la carte	**Cottage gardens**	
How to learn?	Self-directed learning in a highly modularised system supported by an army of (mainly private) coaches, mentors, career counsellors	Shift towards applied knowledge, project- and problem-based learning which leaves room for self-directed learning with extensive coaching	
Governance and Financing	Little State intervention as regards the provider market and only loose interaction among education stakeholders; resources are mainly devoted to individuals	Strong State intervention operating on a cross-sectoral basis and across education and work; resources are mainly devoted to providers and mediating lifelong learning centres	
Role of Europe	Joint financial efforts have made the European education area a reality, a European student card and individual learning accounts are in place.	EQF and EU transparency tools have accelerated the trend towards individualisation and marketisation of education	
Potential risks	The extensive freedom may lead to fragmentation and the reproduction of inequalities; risk of system crash due to underinvestment	Risks for individuals may increase; and concerns about societal inequalities may rise	

Source: Cedefop.

	Distinctive VET		Special purpose VET	
	VET for all	Renaissance of VET	Firefighter VET	Professional champions
	Work-based learning dominates with varying quality and intensity in broadened vocational fields	Work-based learning dominates, is systematically developed and improved in view of new requirements and has gradually transformed the overall education and training system	Mainly classroom-based learning and learning in workshops, with some on-the-job-training	Work-based learning, classroom-based and self-directed learning complement each other. Employers have adopted participative work practices that enhance learning
	Cooperation between employers and workers' councils counterbalances the risks of digitalisation and supports the development of genuine human competence	A tri-partite model with limited State intervention has evolved with strong financial commitments by companies to public-private VET centres	Designated VET policy no longer exists. It is fully merged into employment- and social policy. Companies play an independent role	The tri-partite model is adopted by just a small number of firms. Often local institutions (such as colleges) are a catalyst for cooperation and innovation
	EU has reshuffled mobility budgets from HE to VET and promotes the right of every EU citizen to learn an occupation of his/her choice	EU support facilitated development of VET centres for excellence, a stronger focus on the role of VET in innovation and VET mobility	EU has shifted focus from education and training to innovation and short-term labour market policies (funded by ESF)	EU has shifted focus from education and training to innovation
	The strong role of the State in VET governance may lead to employers refraining from strong engagement	Vocational drift has raised concerns about the (under) development of citizenship and deterioration of the role of humanities	Risks of labour market and societal polarisation with stigmatisation of VET learners	Risks of labour market and societal polarisation

Table 10. **External drivers, critical junctures and institutional changes assumed in the six scenarios**

	Assumed set of external drivers	
Learning à la carte	Accelerated technological change, insecure labour markets (in terms of the skills in demand and forms of employment); high labour mobility, increased uncertainty, progressing neoliberalism, extremism and populism; strongly increased population ageing and longer working lives.	
Cottage gardens	Steady technological change, growing individualism, emphasis on sustainable living environments as well as employment protection, strongly increased population ageing and longer working lives.	
VET for all	Accelerated technological change has led to huge efficiency gains and revenues accordingly. Profits gained through digitalisation are redistributed and invested into the quality of work and education. Partly this is achieved through political pressure, partly through the power that workers have on a very tight and competitive high skills labour market.	
Renaissance of VET	Steady technological change has led to large-scale automation, but most medium- and high skilled jobs have remained untouched; labour mobility across borders is low due to restrictive migration policies. Priority has been given to exploring local skills potentials by retraining and strong incentives for young people to choose VET.	
Firefighter VET	Accelerated technological change has led to a hollowing out of the labour market and resulted in increased inequalities. Large-scale movements of high-skilled people from lower-income communities to high-income, high-skills enclaves, while a large segment of low-skilled workers earn a meagre living. Competitive pressures have resulted in employers being risk-averse.	
Professional champions	Steady technological change has led to large-scale automation of routine tasks, but many medium- and high-skilled jobs remain. Companies that strongly support VET and engage in it, are often producing in a niche market, in which they have longstanding experiences and know-how. This happens both in strongly export-oriented 'high-tech-markets', and in more artisan segments, that build on longstanding traditions.	

Source: Cedefop.

	Assumed critical junctures and institutional changes
	The introduction of a basic income; a comprehensive upper secondary education, unified higher education and generous individual learning accounts in a period of major concern about rising inequality.
	The establishment of a statuary right for lifelong learning and of a network of lifelong learning centres (guidance and support centres) cooperating with public employment and health services
	Unfulfilled individual desires and promises have stopped academisation and elections are won by promising investments in VET. The relaunched pillar of social rights guarantees each EU citizen the chance to learn an occupation of his/her choice at a competent level and to work in this occupation for at least six months to consolidate his/her skills.
	Massive EU investment in VET mobility and VET centres, together with a new EU programme financing trial apprenticeships abroad, have boosted the demand for apprenticeships in a period of massive skill gaps.
	VET programmes at higher levels have been incorporated exclusively into the higher education system, and remaining VET programmes are mainly addressing people at risk. Responsibility for VET programmes has been transferred to employment and social policy and these programmes are only loosely linked to the education system.
	For some companies, international competition has resulted in new forms of social partnership in VET striving for quality and perfection. Alliances for learning and innovation have been formed between social partners, vocational colleges and higher education establishments. Highly selective advanced apprenticeships have started to outperform universities in some case.

6.5.1. **Multiple scenarios and their added value**

VET systems are 'path dependent' and their future development will reflect the past. This diversity is a challenge to the development of shared scenarios on the future of VET. We believe that it will be useful to have points of reference within the strategic dialogue across Europe that do not simply equate to individual countries' systems but are coherent without reference to particular countries; the three basic scenarios can be a valid ground for streamlining strategic communication and discussion among European stakeholders. However, our approach also offers further points of reference in the six more detailed variants. These show that, within the spaces that are demarcated by the basic model, there is still considerable room for variation in the relative strength of certain developments, trends and strategic orientations of actors. Which of the two sets of scenarios – the three basic or the six detailed variants – are more appropriate for strategic discussion depends on the situation, such as the level on which the discussion will be held, and on its focus (supranational level, national level, regional).

6.5.2. **Internal developments, trends and external drivers**

The detailed scenarios contain information about the possible effects of certain trends in VET. Some scenarios mainly look at developments in the use and design of technologies on the one side and the will to achieve consensus among stakeholders (social partners) and the State on the other. Others are characterised by increased individualisation and market-like governance mechanisms. In the special purpose VET scenario, VET plays a role only at the margins of education; it is strongly characterised by a need for efficiency across all spheres, pressure from competition and a defensive role taken by stakeholders. Both of the distinctive VET scenarios are jointly based on the take-up of VET as a means of securing votes by partly populist political parties, and the disappointment with increased academisation. There is no claim for any 'real' causal relationships. The scenarios should help to raise awareness of the interrelationships between the huge number of factors that need to be taken into account, while at the same time reducing the complexity. They can also be thought of as 'phases' of VET, rather than three different parallel shapes. For instance, a country or region with a VET system close to the special-purpose scenario may come to the conclusion that the best way to achieve a pluralistic VET system is not directly by diversifying its existing provision. This option may carry the risk that a marginalised VET

system deteriorates further. Instead they may decide on a detour, developing distinctive VET provision first, before moving on to a pluralistic form.

6.5.3. **Linking with other scenario initiatives**

The findings that VET and conceptions of VET remain relatively stable over time and that national VET systems are relatively independent has led to scenarios that are down-to-earth from a 'hyper-futuristic' perspective. In order to include important aspects of the PEST-model and the role of different drivers for the future of VET, such as introduced with the abovementioned trends, the VET scenarios could be related to scenarios of development in other political, economic, social and technological spheres. A recent example is provided by the eight futures of work scenarios that the World Economic Forum has developed ([146]).

6.5.4. **Sustainable integration into European policy learning**

Scenarios can be linked to European political initiatives or strategies, such as Erasmus funding for mobility, the European alliance for apprenticeships or any new strategy in discussion. For instance, it can be asked why a specific European tool is more supportive for one scenario than another. Careful consideration, however, should be given to the way in which scenarios are presented and can be brought into the discussion. It will be necessary to create some kind of shared ownership with users in order to make them a valuable tool for discussion. It might support their validity among stakeholders to emphasise that the scenarios are developed with careful consideration of the results of the Cedefop research project including a large-scale stakeholder survey supporting the distinctions behind the basic model. Despite the caution needed in dealing with scenarios, their imaginative power, particularly the power of metaphors and the way the might facilitate discussions ([147]), should not be underestimated. During such exercises, scenarios can be combined to enrich existing ones or merged to produce new ones. For instance, it could be argued that 'professional champions' might form one 'perennial bed' in the 'cottage gardens'; or 'professional champions' and 'firefighter VET' might be merged into a new

([146]) World Economic Forum (2018). Other relevant works can be found at national level, such as the following Finnish example: DemosHelsinki and Demos Effect (2018).

([147]) Compare for instance, the 'gardens' metaphor used during the European vocational skills week 2018: https://www.youtube.com/watch?v=B8tdE2RYR_k

scenario characterised as ‘polarised VET’ in which they exist side-by-side, perhaps across different sectors of the economy. Nevertheless, it will require extensive dissemination to support the widest possible use of the scenarios in European policy learning. Another lever would be to integrate linkages with the scenarios into further analyses and research, as well as events, at European level.

Abbreviations

CEE	central and eastern Europe
CME	coordinated market economies
CVET	continuing vocational education and training
D-A-CH	Austria – Germany – Switzerland
EC	European Commission
EAfA	European alliance for apprenticeships
ECTS	European credit transfer system
ECVET	European credit system for vocational education and training
EHEA	European higher education area
EQF	European qualifications framework
EQAVET	European quality assurance in vocational education and training
ETF	European Training Foundation
ESCO	European classification of skills/competences, qualifications and occupations
EU	European Union
Eurostat	statistical office of the European Union
FDI	foreign direct investment
FET	further education and training
GDP	gross domestic product
HE	higher education
ISCED	international standard classification of education
IVET	initial vocational education and training
NEET	not in education, employment or training
NQF	national qualifications framework
LLL	lifelong learning

LME	liberal market economy
LMI	labour market information
OECD	Organisation for Economic Cooperation and Development
PEST	political, economic, sociological, technological
PISA	Programme for international student assessment
VET	vocational education and training
VPET	vocational and professional education and training
WA	work assignment
WBL	work-based learning
UNESCO	United Nations Educational, Scientific and Cultural Organization

Member States

AT	Austria
BE	Belgium
BG	Bulgaria
CH	Switzerland
CY	Cyprus
CZ	Czechia
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IS	Iceland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom

References

[URLS accessed 17.10.2019]

Acemoglu, D.; Autor, D. (2011). Skills, tasks and technologies: implications for employment and earnings. *Handbook of labour economics.* Amsterdam: Elsevier, Vol. 4, pp. 1043-1171.

Agency for Vocational Education and Training and Adult Education (2016). *Vocational education and training in Europe – Croatia*. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_HR.pdf

Allinckx, I.; Monico D. (2016). *Vocational education and training in Europe – Belgium*. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_BE.pdf

Andersen, G. (1990). *The three worlds of welfare capitalism*. Cambridge: Polity Press.

Andersen, O. D.; Kruse, K. (2018). *Cedefop opinion survey on vocational education and training: Denmark.* Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_Denmark_Cedefop_ReferNet.pdf

Ante, C. (2016). *The Europeanisation of vocational education and training*. Switzerland: Springer International Publishing. https://www.springer.com/gp/book/9783319415697

Antikainen, A. (2006). In search of the Nordic model in education. *Scandinavian journal of educational research*, Vol. 50, No 3, pp. 229-243.

Athanasouli, A. e al. (2016). *Vocational education and training in Europe – Greece.* Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_GR.pdf

Baethge, M.; Baethge-Kinsky, V.; Kupka, P. (1998). Facharbeit – Auslaufmodell oder neue Perspektive [Skilled work – obsolete model or new perspectives]. *SOFI-Mitteilungen,* Vol. 26, pp. 81-97.

Baumeler, C.; Engelage, S. (2017). Neue Steuerung durch Klassifikationssysteme: Nationale Qualifikationsrahmen in der Schweiz, Österreich und Deutschland [New Governance by classification systems: national qualification frameworks in switzerland, Austria and Germany]. In: A. Bolder, A.; Bremer, H.; Epping, R. (eds). *Bildung für Arbeit unter neuer Steuerung*

[Education for work under new governance] Wiesbaden: Springer VS, pp. 223-245.

Berner, E.; Gonon, P. (eds). (2014). *History of vocational education and training in Europe: cases, concepts and challenges*. Bern: Peter Lang. Series: Studies in vocational and continuing education; Vol. 14. https://www.peterlang.com/view/title/36834

Bertrand, G.; Michalski, A.; Pench, L. R. (1999). *European scenarios 2010: five possible futures for Europe*. Forward Studies Unit of the European Commission. Working paper; July 1999.

Bosch, G. (2016). Typologien nationaler Berufsbildungssysteme [Typologies of national VET systems]. *Zeitschrift für Berufs-und Wirtschaftspädagogik,* Vol.112, No 1, pp. 15-36.

Brandt, N. (2015). *Vocational training and adult learning for better skills in France*. Paris: OECD Publishing. OECD Economics department working papers; No 1260. https://doi.org/10.1787/5jrw21kjthln-en

Brockmann, M.; Clarke, L.; Winch, C. (2011). *Knowledge skills and competence in the European labour market: what's in a vocational qualification?* London: Routledge.

Broek, S. (2018). Case study on the Netherlands, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/the_netherlands_cedefop_changing_nature_of_vet_-_case_study.pdf

Brynjolfsson, E.; McAfee, A. (2014). *The second machine age*. New York, London: WW Norton and Company.

Bukodi, E.; Róbert, P. (2008). Hungary. In: Kogan, I; Gebel, M.; Noelke, C. (eds). *Europe enlarged: a handbook of education, labour and welfare regimes in central and eastern Europe.* Bristol: Policy Press, pp. 183-212.

Bünning, F. (2008). *The transformation of vocational education and training in the Baltic States: survey of reforms and developments*. Dordrecht: Springer Science and Business Media.

Burke, N.; Condon, N.; Hogan, A. (2016). *Vocational education and training in Europe – Ireland.* Cedefop ReferNet VET in Europe report. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_IE.pdf

Busemeyer, M.; Trampusch, C. (2012a). The comparative political economy of collective skill formation. In: Busemeyer, M.; Trampusch, C. (eds). *The political economy of collective skill formation.* Oxford: Oxford University Press, pp. 3-38.

Busemeyer, M.; Trampusch, C. (2012b). *The political economy of collective skill formation*. Oxford: Oxford University Press.

Busemeyer, M.; Vossiek, J. (2016). 'Mission impossible'? Aufbau dualer Berufsausbildung in England und Irland [Establishment of dual VET in England and Ireland]. *WSI-Mitteilungen,* Vol. 69, No 4, pp. 254-263.

Canning, M. (2007). *Vocational education at secondary level in Ireland: conference paper*.

Capoccia, G. (2015). Critical junctures and institutional change. In: Mahoney, J; Thelen, K. (eds). *Advances in comparative-historical analysis.* Cambridge: Cambridge University Press, pp. 147-179.

Cedefop (2002a). *Towards a history of vocational education and training in Europe in a comparative perspective: proceedings of the first international conference, October 2002, Florence. Volume 1: The rise of national VET systems in a comparative perspective.* Luxembourg: Publications Office. Cedefop Panorama series; No 103. https://www.cedefop.europa.eu/files/5153_1_en.pdf

Cedefop (2002b). *Scenarios and strategies for vocational education and lifelong learning in Europe: summary of findings and conclusions of the joint Cedefop/ETF project, 1998-2002.* Luxembourg: Publications Office. Cedefop panorama series; No 40. https://www.cedefop.europa.eu/files/5131_en.pdf

Cedefop (2004). *Scenarios toolkit*. Luxembourg: Publications Office. Cedefop Dossier series; No 8. https://www.cedefop.europa.eu/files/6009_en.pdf

Cedefop (2011). *VET in Europe – Country report: Romania*. https://www.cedefop.europa.eu/files/2011_cr_ro.pdf

Cedefop (2013). *Renewing VET provision: understanding feedback mechanisms between initial VET and the labour market.* Luxembourg: Publications Office. Research paper; No 37. https://www.cedefop.europa.eu/files/5537_en.pdf

Cedefop (2014a). *Lithuania – modular VET programmes to be developed for the most popular VET qualifications.* National news on VET; 29.8.2014. http://www.cedefop.europa.eu/lv/news-and-press/news/lithuania-modular-vet-programmes-be-developed-most-popular-vet-qualifications

Cedefop (2014b). *Terminology of European education and training policy: second edition: a selection of 130 key terms*. Luxembourg: Publications Office. https://www.cedefop.europa.eu/en/publications-and-resources/publications/4117

Cedefop (2014c). VET in Europe - Country report: Iceland. https://cumulus.cedefop.europa.eu/files/vetelib/2014/2014_CR_IS.pdf

Cedefop (2015). *Focus on polarisation of skills in the labour market.* Skills Panorama, analytical highlight, December 2015. http://skillspanorama.cedefop.europa.eu/en/analytical_highlights/focus-polarisation-skills-labour-market

Cedefop (2016a). *Governance and financing of apprenticeship*. Luxembourg: Publications Office. Cedefop research paper; No 53. https://www.cedefop.europa.eu/files/5553_en.pdf

Cedefop (2016b). *Vocational education and training in Slovakia: short description.* Luxembourg: Publications Office. https://www.cedefop.europa.eu/files/4150_en.pdf

Cedefop (2017a). *Apprenticeship review: Slovenia. Putting apprenticeship on track in Slovenia*. Luxembourg: Publications Office. https://www.cedefop.europa.eu/files/4157_en.pdf

Cedefop (2017b). *Cedefop European public opinion survey on vocational education and training.* Luxembourg: Publications Office. Cedefop research paper; No 62. https://www.cedefop.europa.eu/files/5562_en.pdf

Cedefop (2017c). *The changing nature and role of vocational education and training in Europe. Volume 1: Conceptions of vocational education and training: an analytical framework*. Luxembourg: Publications Office. Cedefop research paper; No 63. https://www.cedefop.europa.eu/files/5563_en_0.pdf

Cedefop (2017d). *The changing nature and role of vocational education and training in Europe. Volume 2: Results of a survey among European VET experts.* Luxembourg: Publications Office. Cedefop research paper; No 64. https://www.cedefop.europa.eu/files/5564_en.pdf

Cedefop (2017e). *Vocational education and training in Malta: short description.* Luxembourg: Publications Office. https://www.cedefop.europa.eu/files/4151_en.pdf

Cedefop (2018a). *Apprenticeship schemes in European countries: a cross-nation overview*. Luxembourg: Publications Office. https://www.cedefop.europa.eu/files/4166_en.pdf

Cedefop (2018b). *The changing nature and role of vocational education and training in Europe. Volume 4: Changing patterns of enrolment in upper secondary initial vocational education and training, 1995-2015*. Luxembourg: Publications Office. Cedefop research paper; No 68. https://www.cedefop.europa.eu/files/5568_en.pdf

Cedefop (2018c). *The changing nature and role of vocational education and training in Europe. Volume 5: Education and labour market outcomes for vocational education and training graduates in different types of VET systems in Europe*. Luxembourg: Publications Office. Cedefop research paper; No 69. https://www.cedefop.europa.eu/files/5569_en.pdf

Cedefop (2018d). *The changing nature and role of vocational education and training in Europe. Volume 3: The responsiveness of European VET systems to external change, 1995-2015.* Luxembourg: Publications Office. Cedefop research paper; No 67. https://www.cedefop.europa.eu/files/5567_en.pdf

Cedefop (2018e). *Finland: major VET reform approved.* http://www.cedefop.europa.eu/en/news-and-press/news/finland-major-vet-reform-approved. National news on VET; 2.3.2018.

Cedefop (2018f). *Lithuania: modernising VET by shifting to modular programmes.* National news on VET; 11.5.2018. http://www.cedefop.europa.eu/en/news-and-press/news/lithuania-modernising-vet-shifting-modular-programmes-0

Cedefop (2018g). *Slovakia: making dual VET more attractive – Legislation amendments to raise dual VET attractiveness.* http://www.cedefop.europa.eu/en/news-and-press/news/slovakia-making-dual-vet-more-attractive National news on VET; 12.9.2018.

Cedefop (2018h). *Sweden: partial IVET qualifications for adults.* http://www.cedefop.europa.eu/en/news-and-press/news/sweden-partial-ivet-qualifications-adults National news on VET; 14.4.2018.

Cedefop (2018i). *Vocational education and training in Bulgaria: short description.* Luxembourg: Publications Office. https://www.cedefop.europa.eu/files/4161_en.pdf

Cedefop (2019a). *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.* Luxembourg: Publications Office. Cedefop research paper; No 70. https://www.cedefop.europa.eu/files/5570_en.pdf

Cedefop (2019b). *Apprenticeship review: Croatia. Improving apprenticeship through stronger support and care*. Luxembourg: Publications Office. Thematic country reviews. https://www.cedefop.europa.eu/files/4173_en.pdf

Cedefop (2019c). *The changing nature and role of vocational education and training in Europe. Volume 7: VET from a lifelong learning perspective:*

continuing VET concepts, providers and participants in Europe, 1995-2015. Luxembourg: Publications Office. Cedefop research paper; No 74. https://www.cedefop.europa.eu/en/publications-and-resources/publications/5574

Cedefop (2019d). *Apprenticeship review: Cyprus. Adding value: rethinking apprenticeships.* Luxembourg: Publications Office. Thematic country reviews. http://data.europa.eu/doi/10.2801/133749

Cedefop (forthcoming). *Financing and co-funding of apprenticeships in the EU.* Luxembourg: Publications Office.

Centre Inffo (2016). *Vocational education and training in Europe – France.* Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_FR.pdf

Centre Inffo (2018). *Cedefop opinion survey on vocational education and training in Europe: France.* Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_France_Cedefop_ReferNet.pdf

Chłoń-Domińczak, A. et al. (2016). Vocational education and training in Europe – Poland. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_PL.pdf

Chmielewska, I.; Dobroczek, G.; Puzynkiewicz, J. (2016). *Obywatele Ukrainy pracujący w Polsce–raport z badania [Ukrainian citizens working in Poland - study report].* Warsaw: NBP – Department of statistics.

Clarke, M. (2016). The development of vocational and technical education in Ireland, 1930-2015. In: B. Walsh (ed.). *Essays in the history of Irish education.* London: Palgrave Macmillan, pp. 297-320.

Council of the European Economic Community (1963). Council Decision 63/266/EEC of 2 April 1963 laying down general principles for implementing a common vocational training policy. *Official Journal of the European Communities*, 1338/63, 20.4.1963, pp. 25-28. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31963D0266&from=ES

Crouch, C. (2004). *Post-democracy*. Cambridge: Polity Press.

Daija, Z.; Kinta, G. (2016). *Vocational education and training in Europe – Latvia*. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_LV.pdf

Dębowski, H.; Reegård, K. (2018). Exit, voice or loyalty? VET stakeholders' responses to large scale skills emigration from and immigration into Poland. Paper presented at the *European conference on educational research, Bolzano, 7 September 2018.*

Dębowski, H.; Stęchły, W. (2015). Implementing ECVET principles: reforming Poland's vocational education and training through learning outcomes-based curricula and assessment. *Warsaw forum of economic sociology,* Vol. 6, No 2(12), pp. 113-133. https://www.ceeol.com/search/article-detail?id=721365

DGERT (2016). *Vocational education and training in Europe – Portugal.* Cedefop ReferNet VET in Europe reports; 2016. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_PT.pdf

Demos Helsinki; Demos Effect (2018). *Work 2040: scenarios for the future of work.* https://www.demoshelsinki.fi/en/julkaisut/work-2040-scenarios-for-the-future-of-work/

de Olagüe Smithson, C. (2017). From coal to knowledge: a history of the VET policies in the European Union. *Revista Española de Educación Comparada,* No 29. http://revistas.uned.es/index.php/REEC/article/view/17532

Dølvik, J.E. (2013). *The social foundations of the Nordic models: a review of the labour and welfare regime's evolution and distinctions*. Fafo-report 2013:13. Oslo: Fafo.

Donelly, G. (2018). Here's why life expectancy in the U.S dropped again this year. *Fortune*, 9 February 2018. http://fortune.com/2018/02/09/us-life-expectancy-dropped-again/

Ebner, C.; Nikolai, R. (2011). Duale oder schulische berufsausbildung? Entwicklungen und Weichenstellungen in Deutschland, Österreich und der Schweiz [Dual or school-based vocational training? Developments and decisions in Germany, Austria and Switzerland]. *Swiss political science review,* Vol. 16, No 4, pp. 617-648. https://onlinelibrary.wiley.com/toc/16626370/16/4

Eichhorst, W. et al. (2012). *A roadmap to vocational education and training systems around the world.* IZA discussion paper No 7110. Bonn: Institute for the Study of Labor. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2199793##

Elken, M. (2015). Developing policy instruments for education in the EU: the European qualifications framework for lifelong learning. *International journal of lifelong education,* Vol. 34, No 6, pp. 710-726. https://www.tandfonline.com/doi/full/10.1080/02601370.2015.1103795

Elken, M. (2016). *Standardising education? The development of the European qualifications framework and national qualifications frameworks*. Dissertation submitted for the PhD degree, Department of Education

Faculty of Educational Sciences of the University of Oslo. https://www.duo.uio.no/handle/10852/50529

Ertl, H. (2002). The concept of modularisation in vocational education and training: the debate in Germany and its implications. *Oxford review of education*, Vol. 28, No 1, pp. 53-73. https://www.tandfonline.com/doi/abs/10.1080/03054980120113634Esping

European Commission (2011). *Attitudes towards vocational education and training.* Special Eurobarometer report; No 369. http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_369_en.pdf

European Commission (2015). *Education and training monitor 2015, Volume 1.* Luxembourg: Publications Office. https://ec.europa.eu/education/policy/strategic-framework/et-monitor_en

European Commission (2018a). *Education and training monitor 2018 country analysis* Slovenia: Luxembourg Publications Office. https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2018-slovenia_en.pdf

European Commission (2018b). *Promoting common values, inclusive education and the European dimension of teaching: Commission's proposal for a Council recommendation.* COM(2018) 23 final. https://ec.europa.eu/transparency/regdoc/rep/1/2018/EN/COM-2018-23-F1-EN-MAIN-PART-1.PDF

European Commission; Ecorys (2013). *Preventing early school leaving in Europe: lessons learned from second chance education*. Luxembourg: Publications Office. https://publications.europa.eu/en/publication-detail/-/publication/575dc3dc-a6fb-4701-94a2-b53d62704567/language-en

Eurostat (2017). *Which sector is the main employer in the EU Member States?* Eurostat news, 24.10.2017. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20171024-1

Eurostat (2018a). *Employment and unemployment (labour force survey).* https://ec.europa.eu/eurostat/web/lfs/data/main-tables

Eurostat (2018b). Employment rates by sex, age and educational attainment level. Retrieved 2018.12.07, from https://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics#Employment_rates_by_sex.2C_age_and_educational_attainment_level

Eurostat (2018c). Household composition statistics: household size. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household_composition_statistics#Household_size

Eurostat (2018d). *Temporary and part-time jobs on the rise.* Eurostat news, 13.8.2018. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/WDN-20180813-1

Facer, K. (2009). *Educational, social and technological futures: a report from the Beyond Current Horizons programme.* https://warwick.ac.uk/fac/soc/ier/publications/2009/beyondcurrenthorizons2009.pdf

Facer, K. (2012). Taking the 21st century seriously: young people, education and socio-technical futures. *Oxford review of education,* Vol. 38, No 1, pp. 97-113.

Farand, C. (2017). UK life expectancy among pensioners drops for first time in decades. *The Independent*, 1.4.2017. https://www.independent.co.uk/news/uk/home-news/pensioners-uk-life-expectancy-falling-institute-and-faculty-of-actuaries-a7661571.html

Farkas, P.et al. (2016). *Vocational education and training in Europe – Hungary*. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_HU.pdf

Fedaczyńska, A. (2015). Case study on Poland, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/poland_cedefop_changing_nature_of_vet_-_case_study.pdf

Fihel, O.; Okolsi, M. (2017). Ageing in Poland in the conditions of intensive international migration. In: Lewandowski, P; Rutkowski, J. (eds). *Population ageing, labour market and public finance in Poland.* Warsaw: European Commission Representation in Poland. http://ibs.org.pl/app/uploads/2017/03/Population-ageing-labour-market-and-public-finance-in-Poland.pdf

Fundae (2018). *Cedefop opinion survey on vocational education and training in Europe: Spain.* Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_Spain_Cedefop_ReferNet.pdf

Galata, P-V. (2018). Case study on Greece, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/greece_cedefop_changing_nature_of_vet_-_case_study.pdf

Gambin, L.; Hogarth, T. (2018). Case study on England, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/england_cedefop_changing_nature_of_vet_-_case_study.pdf

Gentrup, A.; Krieger, F. (2018). Lebenserwartung in Industrienationen sinkt [Life expectancy is dropping in industrialised nations]. *Süddeutsche Zeitung,* 14.1.2018. https://www.sueddeutsche.de/wirtschaft/versicherungen-lebenserwartung-in-industrienationen-sinkt-1.3824752

Gessler, M.; Fuchs, M.; Pilz, M. (2018). *Konzepte und Wirkungen des Transfers Dualer Berufsausbildung [Concepts and impacts of the transfer of the dual system]*. Wiesbaden: Springer.

Gonon, P. (2014). Development cooperation in the field of vocational education and training - The dual system as a global role model? In: Maurer, M.; Gonon, P. (eds). *The challenges of policy transfer in vocational skills development – National qualifications frameworks and the dual model of vocational training in international cooperation*. Bern: Peter Lang, pp. 241-260.

Gonon, P. (2016). 'Zur Dynamik und Typologie von Berufsbildungssystemen – eine internationale Perspektive' [About the dynamic and typology of VET systems. An international perspective]. *Zeitschrift für Pädagogik,* Vol. 62, No 3, pp. 307-322.

Green, A. (1991). The reform of post-16 education and training and the lessons from Europe. *Journal of education policy,* Vol. 6, No 3, pp. 327-339.

Green, A.; Leney, T.; Wolf, A. (1999). *Convergence and divergence in European education and training systems*. London: Institute of Education of the University of London.

Green, A.; Pensiero, N. (2016). The effects of upper secondary education and training systems on skills inequality. A quasi-cohort analysis using PISA 2000 and the OECD survey of adult skills. *British educational research journal*, Vol. 42, No 5, pp. 756-779.

Greinert, W.-D. (2004a). European vocational training systems: the theoretical context of historical development. In: Cedefop (ed). *Towards a history of vocational education and training in Europe in a comparative perspective. Proceedings of the first international conference, October 2002, Florence. Volume 1: The rise of national VET systems in a comparative perspective*. Luxembourg: Publications Office. Cedefop Panorama series; No 103. https://www.cedefop.europa.eu/files/5153_1_en.pdf

Greinert, W.-D. (2004b). European vocational training systems: some thoughts on the theoretical context of their historical development. *European journal of vocational training,* Vol. 32, pp. 18-25.

Grollmann, P. (2018). Case study on Germany, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/germany_cedefop_changing_nature_of_vet_-_case_study.pdf

Hall, P. A.; Soskice, D. (2001). An introduction to varieties of capitalism. In: Hall, P-A; Soskice, D. (eds). *Varieties of capitalism: the institutional foundations of comparative advantage.* Oxford: Oxford University Press, pp. 1-68.

Hanushek, E. A., Woessmann, L.; Zhang, L. (2011). *General education, vocational education and labor-market outcomes over the life-cycle*. München: National Bureau of Economic Research. CESifo working paper, Vol. 3614.

Harari, Y. N. (2016). *Homo Deus: a brief history of tomorrow*. Munich: Random House.

Heidegger, G. et al. (1991). *Berufsbilder 2000*. Opladen: Westdeutscher Verlag.

Heidenreich, M. (1998). Die duale Berufsausbildung zwischen industrieller Prägung und wissensgesellschaftlichen Herausforderungen [The dual system between industrial tradition and challenges of the knowldge society]. *Zeitschrift für Soziologie*, Vol. 27, No 5, pp. 321-340.

Hellwig, S. (2006). The competency debate in German VET: an analysis of current reform approaches. *International journal of training research*, Vol. 4, No 1, pp. 1-16.

Hergan, M.; Čelebič T. (2016). *Vocational education and training in Europe – Slovenia.* Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_SI.pdf

Hogarth, T.; Papantoniou, A. (2017). *New forms of self-employment: the Hollywood model and the gig economy.* Skills Panorama blog, 30.8.2017. https://skillspanorama.cedefop.europa.eu/en/blog/new-forms-self-employment-hollywood-model-and-gig-economy

Hupkau, C.; Ventura, G. (2017). *Further education in England: learners and institutions.* CVER briefing note; No 1. http://cver.lse.ac.uk/textonly/cver/pubs/cverbrf001.pdf

Iancu, T. et al. (2015). Study on the development of education in Romania. *Procedia-social and behavioral sciences,* Vol. 182, pp. 560-565.

INFPC (2016). Vocational education and training in Europe – Luxembourg. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_LU.pdf

Ivancic, A. (2008). Slovenia. In: Kogan, I.; Gebel, M.; Noelke, C. (eds). *Europe enlarged: a handbook of education, labour and welfare regimes in central and eastern Europe.* Bristol: Policy Press, pp. 353-378.

Johnston, R. (2002). *Focus on the future of vocational education and training: scenario planning project: an ANTA national project*. East Melbourne: Victoria Department of Education, Employment and Training.

Jørgensen, C. H. (2018). The modernisation of the apprenticeship system in Denmark 1945-2015. In: Michelsen, S.; Stenström, M-L. (eds). *Vocational education in the Nordic countries: the historical evolution*. New York: Routledge, pp. 171-190.

Jørgensen, C. H. et al. (2014). Same but different: the emergence of VET in three Nordic countries. In: Berner, E.; Gonon, P. (eds). *History of vocational education and training in Europe: cases, concepts and challenges,* pp. 305-326. Bern: Peter Lang. Studies in vocational and continuing education; Vol. 14. https://doi.org/10.3726/978-3-0343-2354-3

Kaňáková, M.; Czesaná, V.; Šímová, Z. (2016). *Vocational education and training in Europe – Czech Republic*. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_CZ.pdf

Kis, V. (2010). *Learning for jobs: Ireland.* OECD reviews of vocational education and training. http://www.oecd.org/education/skills-beyond-school/44592419.pdf

Knavs, S; Šlander M. (2019). Vocational education and training in Europe – Slovenia. Cedefop ReferNet VET in Europe reports 2018. http://libserver.cedefop.europa.eu/vetelib/2019/Vocational_Education_Training_Europe_Slovenia_2018_Cedefop_ReferNet.pdf

Kogan, I.; Gebel, M.; Noelke, C. (eds) (2008). *Europe enlarged: a handbook of education, labour and welfare regimes in central and eastern Europe*. Bristol: Policy Press.

Kogan, I.; Unt, M. (2008). The role of vocational specificity of educational credentials for labour market entry in Estonia and Slovenia. *International sociology,* Vol. 23, No 3, pp. 389-416.

Kokkonen, V. (2018). Case studyon Finland, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/finland_cedefop_changing_nature_of_vet_-_case_study.pdf

Korelli, Y. (2018). *Cedefop opinion survey on vocational education and training in Europe: Cyprus.* Cedefop ReferNet thematic perspectives

series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_Cyprus_Cedefop_ReferNet.pdf

Kostova, D. (2008). Bulgaria. In: I. Kogan, M. Gebel & C. Noelke (Eds.), *Europe Enlarged – A handbook of education, labour and welfare regimes in central and eastern Europe*. Bristol: Policy Press, pp. 97-122.

Koukku, A.; Paronen, P. (2016). *Vocational education and training in Europe – Finland.* Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_FI.pdf

Krastev, I. (2017). *After Europe*. Philadelphia: University of Pennsylvania Press.

Laužackas, R.; Tūtlys, V.; Spūdytė, I. (2009). Evolution of competence concept in Lithuania: from VET reform to development of national qualifications system. *Journal of European industrial training,* Vol. 33, No 8-9, pp. 800-816.

Lawn, M.; Grek, S. (2012). *Europeanising education: governing a new policy space*. Didcot: Symposium Books.

Leney, T. E. (2004). *Achieving the Lisbon goal: the contribution of vocational education and training: draft final report to the European Commission.* London: QCA.

Maer Matei, M. M.; Mocanu, C.; Zamfir, A.-M. (2018). Educational paths in Romania: choosing general or vocational education. *Holistica journal of business and public administration,* Vol. 9, No 2, pp. 127-136.

Makovec Radovan, D.; Šlander, M. and Resnik, Š. (2018). *Cedefop European public opinion survey on vocational education and training, country overview: Slovenia*. Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_Slovenia_Cedefop_ReferNet.pdf

Markowitsch, J.; Käpplinger, B.; Hefler, G. (2013). Firm-provided training in Europe and the limits of national skills strategies. *European journal of education,* Vol. 48, No 2, pp. 281-291.

Maurice, M.; Sellier, F.; Silvestre, J.-J. (1979). La production de la hiérarchie dans l'entreprise: recherche d'un effet sociétal: comparaison France-Allemagne [Hierarchy in the enterprise: search for a societal effect: comparing France/Germany]. *Revue française de sociologie*, Vol. 20, No 2, pp. 331-365. https://www.jstor.org/stable/3321089

Maurice, M.; Sellier, F.; Silvestre, J.-J. (1986). *The social foundations of industrial power: a comparison of France and Germany*. Cambridge, Mass.: MIT Press.

McCoshan, A. et al. (2008). *Beyond the Maastricht communiqué: developments in the opening up of VET pathways and the role of VET in labour market integration: consolidated final report.* Prepared by ECOTEC for the European Commission. https://www.voced.edu.au/content/ngv%3A27630

McCoy, S. et al. (2014). *Leaving school in Ireland: a longitudinal study of post-school transitions.* Dublin: ESRI. ESRI research series; No 36. https://www.esri.ie/publications/leaving-school-in-ireland-a-longitudinal-study-of-post-school-transitions

McGuinness, S. et al. (2014). *Further education and training in Ireland: past, present and future*. Dublin: SOLAS.

Meadows, D. H. (1972). *The limits to growth: a report for the Club of Rome's project on the predicament of mankind*. New York: Universe Books.

Michel, A. (2018). Case study on France, prepared for Cedefop in the context of the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/france_cedefop_changing_nature_of_vet_-_case_study.pdf

Michelsen, S. (2018). The historical evolution of vocational education in the Nordic countries. In: Michelsen, S.; Stenström, M-L. (eds). *Vocational education in the Nordic countries: the historical evolution.* New York: Routledge, pp. 1-23. https://www.crcpress.com/Vocational-Education-in-the-Nordic-Countries-The-Historical-Evolution/Michelsen-Stenstrom/p/book/9781138220850

Michelsen, S.; Høst, H. (2018). Norwegian VET and the ascent and decline of social democracy 1945-2015. In: Michelsen, S.; Stenström, M-L (eds). *Vocational education in the Nordic countries: the historical evolution*. New York: Routledge, pp. 146-170. https://www.crcpress.com/Vocational-Education-in-the-Nordic-Countries-The-Historical-Evolution/Michelsen-Stenstrom/p/book/9781138220850

Mocanu, C. (2008). Romania. In: I. Kogan, M. Gebel; Noelke, C. (eds). *Europe enlarged: a handbook of education, labour and welfare regimes in central and eastern Europe.* Bristol: Policy Press, pp. 295-312.

Mohamud, M. et al. (2006). Work-based learning in the UK: scenarios for the future. *Education and training,* Vol. 48, No 6, pp. 440-453.

Moodie, G. (2008). *From vocational to higher education: an international perspective*. Berkshire: SRHE and Open University Press. https://www.voced.edu.au/content/ngv%3A311

Musset, P. (2014). *A skills beyond school commentary on Romania*. Paris: OECD Publishing. OECD reviews of vocational education and training. https://www.oecd.org/education/skills-beyond-school/ASkillsBeyondSchoolCommentaryOnRomania.pdf

Nyen, T.; Tønder, A. (2014). *Yrkesfagene under press [The vocational trades under pressure].* Oslo: Universitetsforlaget.

OECD (2001). *What schools for the future?* Paris: OECD Publishing.

OECD (2006). *Think scenarios, rethink education*. Paris: OECD Publishing.

Olofsson, J.; Thunqvist, D. P. (2018). The modern evolution of VET in Sweden (1945–2015). In: Michelsen, S.; Stenström, M-L. (eds). *Vocational education in the Nordic countries: the historical evolution.* New York: Routledge, pp. 124-145. https://www.crcpress.com/Vocational-Education-in-the-Nordic-Countries-The-Historical-Evolution/Michelsen-Stenstrom/p/book/9781138220850

Pärtel, K.; Petti, K. (2013). *Elanikkonna teadlikkus kutseõppes toimuvast ja kutsehariduse maine aastal 2013 [Public awareness of vocational education and training in 2013].* Talinn: INNOVE.

Pilz, M. (2012). Modularisation of vocational training in Germany, Austria and Switzerland: parallels and disparities in a modernisation process. *Journal of vocational education and training,* Vol. 64, No 2, pp. 169-183.

Powell, J. et al. (2012). The shifting relationship between vocational and higher education in France and Germany: towards convergence? *European journal of education,* No 47, No 3, pp. 405-423.

Powell, L.; McGrath, S. (2014). Exploring the value of the capability approach to VET evaluation: reflections from South Africa. In: Carbonnier, G.; Carton, M.; King, K. (eds). *Education, learning, training*: c*ritical issues for development.* International development policy series, No 5, pp. 126-148. Geneva: Graduate Institute Publications. https://journals.openedition.org/poldev/1784

Pratzner, F. C.; Russell, J. F. (1983). *The roles and functions of vocational education: some current perspectives*. Ohio: State University.

Pye, D. (1968). *The nature and art of workmanship.* Cambridge: Cambridge University Press.

Rageth, L.; Renold, U. (2017). *The linkage between the education and employment systems: ideal types of vocational education and training programs.* Zürich: ETH KOF working papers, Vol. 432. https://doi.org/10.3929/ethz-b-000171536

Rainbird, H. (2010). Vocational education and training in the United Kingdom In: G. Bosch; J. Charest (eds.). *Vocational training: international perspective.* New York, Oxon: Routledge, pp. 258-286.

Raudsepp, K. (2010). *A bridge to the future: European policy for vocational education and training* 2002-10. National policy report – Estonia. Cedefop ReferNet – Innove.

Redecker, C. et al. (2011). *The future of learning: preparing for change.* Luxembourg: Publications Office. JRC scientific and technical report. https://publications.europa.eu/en/publication-detail/-/publication/248604cb-9598-48a7-adad-8ff00e061a05/language-en

Reegård, K. (2017). Contrasting prospects: the institutionalisation of VET for retail and office work in Norway. *Journal of vocational education and training,* Vol. 69, No 4, pp. 558-575.

Reegård, K. (2018). Case study on Norway, prepared for Cedefop in the context the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/france_cedefop_changing_nature_of_vet_-_case_study.pdf.

Renta-Davids, A.-I.; Fandos-Garrido, M. (2014). Evolution and challenges of the Spanish VET system: from a school-based to a work-based approach. In: E. Berner, E.; Gonon, P. (eds). *History of vocational education and training in Europe: cases, concepts and challenges,* pp. 551-572. Bern: Peter Lang. Studies in vocational and continuing education; Vol. 14.

Røed, M.; Schøne, P. (2015). The impact of immigration on inhabitants' educational investments. *Scandinavian journal of economics,* No 118, pp. 433-462.

Roosalu, T.; Saar, E. (2018). Case study on Estonia, prepared for Cedefop in the context the project *The changing nature and role of vocational education and training in Europe.* https://www.cedefop.europa.eu/files/estonia_cedefop_changing_nature_of_vet_-_case_study.pdf

Rotmans, J. et al. (2000). Visions for a sustainable Europe. *Futures,* Vol. 32, No 9-10, pp. 809-831. https://www.researchgate.net/publication/222385333_Visions_for_a_sustainable_Europe

Rouvrais, S.; Remaud, B.; Saveuze, M. (2017). Work-based learning models in French engineering curricula. Paper presented at the *13th International CDIO conference, Calgary, 18 to 22 June 2017.* http://cdio.org/knowledge-library/documents/work-based-learning-models-french-engineering-curricula

Ruff, R.; Shylo, B.; Russell, J. F. (1981). *Vocational education: a look into the future.* Columbus: Ohio State University, National Centre for Research in Vocational Education.

Saar, E. (1997). Transitions to tertiary education in Belarus and the Baltic countries. *European sociological review,* Vol. 13, No 2, pp. 139-158.

Saar, E.; Lindemann, K. (2008). Estonia. In: Kogan, I.; Gebel, M.; Noelke, C. (eds). *Europe enlarged: a handbook of education, labour and welfare regimes in central and eastern Europe*. Bristol: Policy Press, pp. 151-181.

Saar, E.; Ure, O. B. (2013). Lifelong learning systems: overview and extension of different typologies. In: Saar, E.; Ure, O-B.; Holford, J. (eds). *Lifelong learning in Europe: national patterns and challenges*. Cheltenham: Edward Elgar, pp. 46-81.

Sainsbury, D. et al. (2016). *Report of the independent panel on technical education.* London: BIS and DfE.

Sancha, I.; Gutiérrez, S. (2016). Vocational education and training in Europe – Spain. Cedefop ReferNet VET in Europe reports; 2016. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_ES.pdf

Saniter, A.; Tūtlys, V. (2014). Comparison of historical development pathways of initial education and training in Lithuania and Germany: how does history matter for policy learning? In: Berner, E.; Gonon, P. (eds). *History of vocational education and training in Europe: cases, concepts and challenges,* pp. 511-530. Bern: Peter Lang. Studies in vocational and continuing education; Vol. 14.

Scharnhorst, U.; Kammermann, M. (2017). Wie inklusiv ist die zweijährige berufliche Grundbildung in der Schweiz? [How inclusive is the two-years apprenticeship in Switzerland]. In: Becker, M. et al. (eds). *Ausbildung zum Beruf. Internationaler Vergleich der berufsförmigen Ausbildungskonzepte für benachteiligte Jugendliche [Education for vocation: international comparison of vocational education models for disadvantaged youth].* Frankfurt am Main: Peter Lang, pp. 245-286.

Schipperheyn, R. et al. (2016). *De ontwikkeling van de instroom in de bbl [Development of the inflow of students in the dual pathway].* Hertogenbosch: ECBO.

Schmid, K. (2018). *Cedefop opinion survey on VET in Europe: Austria*. Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_Austria_Cedefop_ReferNet.pdf

Sennett, R. (2008). *The craftsman*. New Haven: Yale University Press.

Shields, C. (2015). *A passport to a changing landscape: advancing pedagogy and innovative practices for knowledge mobilisation and skill development in the 21st century*. Nipissing: Schulich School of Education, Nipissing University. Local innovation research projects in Ontario, Round 3, final report.

Skolverket, ReferNet Sweden. (2016). *Vocational education and training in Europe – Sweden.* Cedefop ReferNet VET in Europe reports. https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_CR_SE.pdf

Skolverket (2018). *Cedefop opinion survey on VET in Europe: Sweden*. Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/opinion_survey_VET_Sweden_Cedefop_ReferNet.pdf

Smulders, H.; Cox, A.; Westerhuis, A. (2016). *Vocational education and training in Europe – Netherlands*. Cedefop ReferNet VET in Europe reports. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_NL.pdf

Soltys, D. (1997). *Education for decline: Soviet vocational and technical schooling from Khrushchev to Gorbachev.* Toronto: University of Toronto Press.

Staehr, K. (2015). Economic growth and convergence in the Baltic States: caught in a middle-income trap? *Inter economics,* Vol. 50, No 5, pp. 274-280.

Statistik Austria (2015). *Ergebnisse aus dem Bildungsbezogenen Erwerbskarrierenmonitoring (BibEr) im Auftrag von BMASK und AMS für die Schuljahre 2008/09 bis 2010/11 [Results of the career monitoring on behalf of BMASK and AMS for the school years 2008/09 and 2010/11].* Wien: Statistik Austria.

Stenström, M.-L.; Virolainen, M. (2018). The modern evolution of vocational education and training in Finland (1945-2015). In: Michelsen, S.; Stenström, M-L. (eds). *Vocational education in the Nordic countries: the historical evolution.* New York: Routledge, pp. 102-123.

Stoyanov, S.; Hoogveld, B.; Kirschner, P. (2010). *Mapping major changes to education and training in 2025.* Luxembourg: Publications. JRC technical notes; No 59079.

Streeck, W. (2011). *Skills and politics – general and specific.* Cologne: Max Planck Institute for the Study of Societies. MPIfG discussion paper 11/1.

Taljunaite, M. (2008). Lithuania. In: Kogan, I.; Gebel, M.; Noelke, C. (eds.). *Europe enlarged: a handbook of education, labour and welfare regimes in central and eastern Europe.* Bristol: Policy Press, pp. 241-267.

Tetlock, P. E.; Gardner, D. (2016). *Super forecasting: the art and science of prediction*. London: Random House.

Thelen, K. (2004). *How institutions evolve: the political economy of skills in Germany, Britain, the United States and Japan*. Cambridge: Cambridge University Press.

Thelen, K. (2014). *Varieties of liberalisation and the new politics of social solidarity.* Cambridge: Cambridge University Press.

Toots, A. (2009). Brussels comes via Helsinki: the role of Finland in Europeanisation of Estonian education policy. *Administrative culture*, Vol. 10, No 1, pp. 58-73.

Toots, A.; Kalev, L. (2016). Governing in the shadow of Bologna: return of the State in higher education quality assurance policy. *International journal of public policy, Vol.* 12, No 1, pp. 54-74.

Toots, A.; Loogma, K. (2015). Learning Europeanisation in Estonian education policy. In: Estonian Cooperation Assembly (ed.): *Estonian human development report 2014/2015: escaping the traps?* Tallinn: Eesti Koostöö Kogu, pp. 259-264. www.kogu.ee/wp-content/uploads/2013/01/FINAL_EIA_2015_ENG.pdf

Tūtlys, V. (2018). Specificities of the institutional development of skills formation and VET systems in Lithuania: comparing incomparable? Paper presented at the *ECER conference, Bolzano, 7 September 2018.*

UK NARIC (2016). *Vocational education and training in Europe – United Kingdom.* Cedefop ReferNet VET in Europe reports; 2016. http://libserver.cedefop.europa.eu/vetelib/2016/2016_CR_UK.pdf

UKCES (2009). *Simplification of skills in England: an interim assessment of progress on implementing the recommendations in simplification of skills in England.* London: UKCES. https://dera.ioe.ac.uk//1409/

UNESCO (2015a). *Proposal for the revision of the 2001 revised recommendation concerning technical and vocational education.* Document 38 C/32. https://unesdoc.unesco.org/ark:/48223/pf0000234137

UNESCO (2015b). *Unleashing the potential: transforming technical and vocational education and training.* Paris: UNESCO Publishing. http://publishing.unesco.org/details.aspx?&Code_Livre=5086&change=E

Valenduc, G. (2018). *Technological revolutions and societal transitions.* Brussels: ETUI. Foresight Brief; No 4. https://www.etui.org/Publications2/Foresight-briefs/Technological-revolutions-and-societal-transitions

Valiente, O.; Scandurra, R. (2017). Challenges to the implementation of dual apprenticeships in OECD countries: a literature review. In: Pilz, M. (ed).

Vocational education and training in times of economic crisis: lessons from around the world. Dordrecht: Springer. TVET series; No 24, pp. 41-57. https://link.springer.com/chapter/10.1007%2F978-3-319-47856-2_3

Van Notten, P. W. et al. (2003). An updated scenario typology. *Futures,* Vol. 35, No 5, pp. 423-443.

Veblen, T. (1898). The instinct of workmanship and the irksomeness of labour. *American journal of sociology,* Vol. 4, No 2, pp. 187-201.

Virolainen, M. (2017). Changing patterns of transition to VET and from VET to higher education: the on-going Finnish VET reform. Paper presented at the *International conference on vocational education and training, Stockholm, 8 and 9 May 2017.*

Vossiek, J. (2018). *Collective skill formation in liberal market economies? The politics of training reforms in Australia, Ireland and the United Kingdom.* Peter Lang Publishing. Series: Studies in vocational and continuing education; No 16. https://www.peterlang.com/view/title/64402?format=EPDF

Watson, D.; McCoy, S.; Gorby, S. (2006). *The post-leaving certificate sector in Ireland: a multivariate analysis of educational and employment outcomes.* Dublin: ESRI and Department of Education and Science.

Weishaupt, J. T. (2011). *From the manpower revolution to the activation paradigm – explaining institutional continuity and change in an integrating Europe.* Amsterdam: Amsterdam University Press.

West, J. (2012). *The evolution of European Union policies on vocational education and training.* London: LLAKES. LAKESS research paper; No 34. https://www.llakes.ac.uk/sites/default/files/34.%20West%20-%20final.pdf

West, J. (2013). *Vocational education and training in eastern Europe: transition and influence.* London: LLAKES. LLAKES research paper; No 41. https://www.llakes.ac.uk/sites/default/files/41.%20West%202.pdf

Winterton, J. (2006). Social dialogue and vocational training in Europe: are we witnessing the emergence of a European model? *Journal of European industrial training,* Vol. 30, pp. 65-76.

Wolf, A. (2011). *Review of vocational education: the Wolf report.* A report carried-out for the Department for Education of the UK Government. https://www.gov.uk/government/publications/review-of-vocational-education-the-wolf-report

World Economic Forum (2018). *Eight futures of work: scenarios and their implications*. WEF White Paper. http://www3.weforum.org/docs/WEF_FOW_Eight_Futures.pdf

Young, M.; Muller, J. (2010). Three educational scenarios for the future: lessons from the sociology of knowledge. *European journal of education,* Vol. 45, No 1, pp. 11-27.

Webpages

Cedefop – Financing VET. https://www.cedefop.europa.eu/en/events-and-projects/projects/financing-training

Cedefop – Skills anticipation methods and practices. http://www.cedefop.europa.eu/en/events-and-projects/events/skills-anticipation-methods-and-practices

Cedefop – Future trends: skills forecast 2018. http://www.cedefop.europa.eu/el/events-and-projects/projects/forecasting-skill-demand-and-supply/data-visualisations [accessed 7.12.2018].

SBFI (Staatssekretariat für Bildung, Forschung und Innovation) - *Berufsbildung 2030*. https://berufsbildung2030.ch/de/

UNEVOC (2006). What is TVET? https://unevoc.unesco.org/go.php?q=more+about+What+is+TVET&context=

Wikipedia (2018a). Definition of *hidden champions*. https://en.wikipedia.org/wiki/Hidden_champions

Wikipedia (2018b). Definition of *PEST analysis*. https://en.wikipedia.org/wiki/PEST_analysis

ANNEX 1.

Project overview

The project includes six work assignments, as shown in Table 11.

Table A 1. **Overview of work assignments (WA)**

WA1	The changing definition and conceptualisation of VET
WA2	The external drivers influencing VET developments
WA3	The role of traditional VET at upper secondary level
WA4	VET from a lifelong learning perspective
WA5	The role of VET at higher education levels
WA6	Scenarios outlining alternative development paths for European VET in the 21st century

Several publications on the work packages were released during the project:

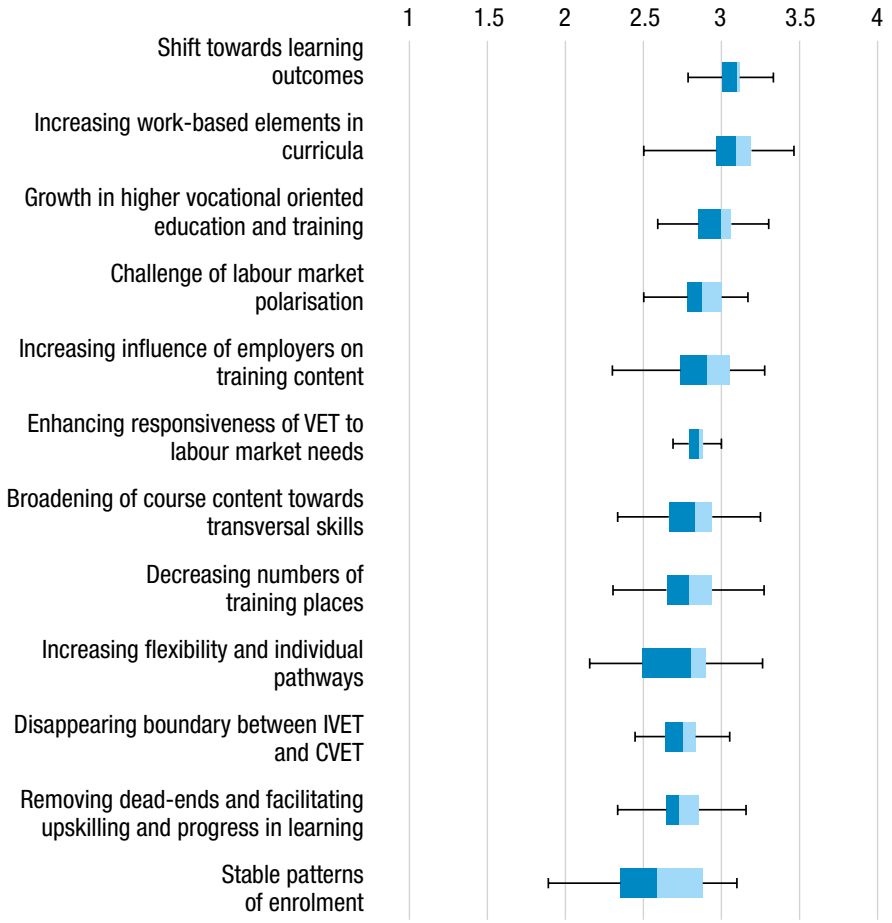
- Conceptions of vocational education and training: an analytical framework (Volume1, related to WA1);
- Results of a survey among European VET experts (Volume 2, related to WA1);
- The responsiveness of European VET systems to external change (1995-2015) (Volume 3, related to WA2);
- Changing patterns of enrolment in upper secondary initial vocational education and training (IVET) 1995-2015 (Volume 4, related to WA3);
- Education and labour market outcomes for vocational education and training graduates in different types of VET system in Europe (Volume 5, related to WA4);
- Vocationally oriented education and training at higher education levels – expansion and diversification in European countries (Volume 6, related to WA5);
- VET from a lifelong learning perspective: CVET concepts, providers and participants in Europe, 1995-2015 (Volume 7, related to WA4).

Case studies for specific countries (related to WA2 and WA5) were also made available. For more information regarding the published volumes and the case studies, please consult the project web page: https://www.cedefop.europa.eu/en/events-and-projects/projects/changing-nature-and-role-vocational-education-and-training-vet-europe.

ANNEX 2

Cedefop survey *Changing VET 2035*

Figure A 1. **Boxplot with outliers: past trends 1995-2015**



1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree

Source: Cedefop survey *Changing VET 2035* (2018).

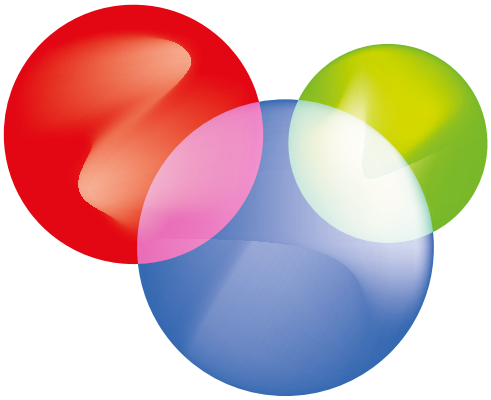
ANNEX 3

Contribution to the report

Table A 2. **Country experts and people who contributed to the report**

AT	Jörg Markowitsch, Karin-Luomi Messerer, Mariya Dzhengzova, Viktor Fleischer
BE	Katleen DeRick
BG	Mariya Dzhengozova
CY	Chrystalla Elina
CZ	Věra Czesaná, Lubomir Valenta
DE	Isabelle LeMouillour, Philippe Grollmann
DK	Tine Anderson, Karsten Frøhlich Hougaard
EE	Triin Roosalu, Ellu Saar
EL	Viviane Galata
ES	Inigo Isusi
FI	Vesa Kokkonen, Maarit Viroleinen
FR	Alain Michel, Jean-François Cervel
HR	Ivanka Buzov
HU	Eva Farkas
IE	John Lalor, Justin Rami
IS	Dora Stefansdottir
IT	Alberto Vergani, Liga Baltina
LT	Vidmantas Tutlys
LU	Joseph Noesen
LV	Inta Jaunzeme
MT	Suzanne Gatt
NL	Simon Broek
NO	Torgeir Nyen, Kaja Reegård, Kristin Alsos, Odd Bjørn Ure
PL	Aleksandra Fedaczyńska, Horacy Dębowski
PT	Andreia Monteiro, Ana Ribeiro
RO	Dana Stroie
SE	Roe Langaas
SI	Tomaz Dejelan, Barbara Brečko
SK	Juraj Vantuch, Lubomir Valenta
UK	Terence Hogarth, Andrew McCoshen, Alan Brown

EN



Vocational education and training in Europe, 1995-2035

This synthesis report summarises the findings of the Cedefop project *The changing nature and role of vocational education and training in Europe (2016-18).* Project research covered the 28 EU Member States as well as Iceland and Norway, aiming to take a step back and paint a comprehensive picture of VET developments in Europe, identifying challenges as well as opportunities. The summary shows that European vocational education and training (VET) varies between countries and is changing in a number of fundamental ways. European VET is becoming more diverse in its programmes and qualifications and also expanding into higher levels, challenging the perception of higher education as exclusively academically oriented. In some countries, this reflects a step towards making lifelong learning a reality; in others, traditional VET is coming under pressure from declining youth cohorts and a growing preference for general education and training. Such negative developments can be seen as a forewarning of future challenges.

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