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Foreword

The European strategic framework for cooperation in education and training ('ET 2020') calls for coherent and comprehensive lifelong learning strategies. Those should include the establishment of more flexible learning pathways (Council of the European Union, 2009) combining different learning venues and provision modes. In its third strategic objective, the Bruges Communiqué (2010) calls for the promotion of flexible pathways between VET, general education and HE. It also corresponds to the stronger focus on qualifications. The widespread use of learning outcomes for defining and describing qualifications – promoted by the Bologna and Copenhagen processes – is calling into question the traditional distinctions between higher education (HE) and vocational education and training (VET). The Copenhagen process specifically seeks open pathways and parity of esteem between vocational education and training, and general/higher education. The introduction of new style qualifications frameworks in higher education and the European qualifications framework for lifelong learning (EQF) based on learning outcomes is urging authorities and stakeholders to reconsider the relationship between their separate frameworks and educational offers for general education, vocational education and training (VET) and higher education (HE). Using learning outcomes as a paradigm for changes in education and training goes beyond traditional dividing lines that follow institutional anchorages, levels assignments or qualifications types. Hence this research chooses to look at qualifications at higher qualifications levels not from the viewpoint of education and training systems and institutions, but in terms of offers to lifelong learners.

European tools such as the European credit system for vocational education and training (ECVET) or the EQF, and their corresponding developments in national education and training systems, envisage vocational education and training at all qualifications levels including the highest. The issue is controversial, reflecting long-lasting scholarly discussions on academisation or professionalisation of education and training. It is also controversial since changes within education and training are constant.

The evidence of this research paper testifies to the difficulty in grasping the phenomenon. It explores the dimensions of change in terms of stakeholder involvement, learning outcomes, motivations and policy-statements. It also confirms the loosening of ties between institutions and qualifications types, increasingly pluralistic education and training systems, blurring boundaries between VET and HE. The richness and competitiveness of European education

and training lies in this internal diversity; this paper contributes to its better understanding and builds a grounded basis for policy-making and further research.

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Executive summary

Approaching VET at tertiary qualifications levels

The European Commission's definition of initial and continuing vocational education and training (VET), as well as the definitions by Cedefop and the Organisation for Economic Cooperation and Development (OECD), distinguish clearly between tertiary level VET (which refers in principle to VET offered at the highest education levels outside formal academic higher education) and professional higher education (for example, study programmes in business administration, nursing, law and engineering provided typically within the formal academic higher education), although neither the European Commission's, nor Cedefop's definitions explicitly exclude the latter. Common to both is the reference to the labour market. The European Commission indicates in its Communication Europe 2020: A strategy for smart, sustainable and inclusive growth, that initial VET aims to 'equip young learners with skills directly relevant to evolving labour markets'. Based on Cedefop's definition for this study, VET refers to '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.'

This Cedefop research paper addresses vocationally oriented education and training at higher qualification levels in 13 selected countries in Europe (Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, the Netherlands, Norway, Poland, Portugal, Romania, and UK-England). It also provides insights in six sectors or fields of studies (agriculture, nursing, information and communication technology, finance, special educational needs and technology and innovation management).

Although in most of the 13 countries analysed in this study there are common policy statements and goals for VET at EQF levels 6 to 8, the structure and policy instrumentation of the countries differ in terms of the policy understanding and preferred position of tertiary VET. Views and understandings of VET at EQF levels 6 to 8 are influenced by national contexts. Broad categories can be created which include only one explicit dual tertiary level VET/higher education system in Germany. Further categories are integrated systems of certifications and recognition (e.g. France), tertiary VET as part of higher education policies (e.g. Norway and Czech Republic) and countries where there is no policy focus on VET at these levels (e.g. Romania and Portugal).

Policy making at the highest VET levels most commonly falls under one ministry, usually the Ministry of Education. Examples include the Czech Republic, Finland, Greece, Ireland, the Netherlands, Norway, Poland, and Romania. In Portugal, where there is no official differentiation of HE and VET at levels 6 to 8, higher education falls under the responsibility of the Ministry of Science, Technology and Higher Education. Other specific cases include Denmark (VET and higher professional education is under the responsibility of the Ministry of Education and the universities are under the Ministry of Science, Technology and Innovation), UK-England (the responsible body is the Department for Business, Innovation and Skills), Germany (federal system) and France (various ministries are involved in VET policies). Other bodies also often participate in the policy process, such as national VET agencies, universities and social partners.

In most of the 13 countries the structure of tertiary education follows the traditional binary divide, i.e. academic higher education offered by universities and higher professional education institutions. This is the case in Denmark, Finland, Germany, Greece, Ireland, the Netherlands, Portugal and Norway, as well as the newer EU Member States of Czech Republic, Poland and Romania. In France, however, the tertiary education system is segmented, and in UK-England it is unified. Recent developments (including the integration of polytechnics into the university sector in UK-England in the early 1990s and a two-year Associate Degree at EQF level 5 provided by Dutch higher professional education institutions) show that the traditional binary divide is becoming more complex.

The types of vocationally oriented programmes can largely be framed along the lines of Bachelor-Master qualification division. There are countries in which a separate professional Bachelor qualification exists (e.g. Denmark and France). However, these do not always guarantee straight progression to, for example, an academic Master degree (as is the case in the Netherlands and Finland). There are also initiatives for professional Masters, for example in Denmark and the Netherlands, but these are still in an early stage of development. In some countries (e.g. Ireland and Norway), PhD degrees are offered by non-university higher education institutions.

Parity of esteem between VET and academic education at tertiary level is an important issue, although not widely discussed in some countries. In terms of learning opportunities there is more parity of esteem in countries where progression from more vocational to more academic study programmes is supported. Examples include countries in which validation of non-formal and informal learning is better developed (e.g. France, Ireland, and UK-England). In other countries (such as Finland, Denmark, and the Netherlands) there is a lack

of educational parity of esteem. This is evidenced by the limited permeability between qualifications attributed by higher professional institutions and universities.

Although the involvement of the labour market in VET provision at higher qualification levels is widely recognised in all countries, the level and forms of involvement of labour market actors is varied. In some countries the effectiveness of this link is limited (e.g. the Czech Republic, Poland, Portugal and Romania). In other countries, it is significant and implemented through a variety of forms, e.g. through work placements in Denmark, Germany and Finland. Further, sectoral bodies and social partners have a major influence on VET provision in some countries, e.g. Germany (where the cooperation with labour market actors often occurs at a regional level), and France and Norway for education institutions.

VET initiatives at EQF levels 6 to 8 in selected sectors

A diverse range of types of education and training providers at EQF levels 6 to 8 was identified in all the sectors. Public higher education institutions tend to be dominant: universities, for example, in Poland in information and communication technologies, and other types of providers, e.g. universities of applied sciences in Germany in the innovation and technology management area and polytechnics in Finland in teacher training. However, there are private providers in some of the sectors, e.g. private companies in Germany in both the information and communication technologies and innovation technology management area, private colleges in Norway in nursing, and private organisations in France in agriculture. Private providers were not identified in Denmark in agriculture and in Finland in teacher training.

The most common qualifications are the Bachelor, Master and PhD degrees. Specific qualification types include the professional Bachelor (Denmark and France in agriculture education), professional Master (France in agriculture), foundation degrees, diploma courses and postgraduate certificates (UK-England in teacher training), as well as non-higher education certificates (e.g. strategic and operative professional qualifications in the information technologies sector in Germany). The professional Bachelor exists in France as a fully recognised qualification. Certificates are offered at EQF level 6 in distance learning in finance in the Netherlands and Portugal. However, these are not regarded as a formal qualification. In Norway it is possible for nurses with EQF level 6 qualifications to

take courses at Master level (EQF level 7) for further specialisation, although these do not lead to a full Master qualification.

The identified courses were provided through full-time, part-time and/or distance learning methods. Some of the sectors allowed for more flexible learning plans, permitting students to work professionally alongside their studies. Examples include the Netherlands and Portugal in distance learning in the finance sector, and in Finland and UK-England in teacher training. For instance, in Finland the universities of applied science offer special needs education (within teacher training) courses as a postgraduate course at EQF level 7, with each student developing an individual plan with reference to their specific work areas.

Labour market involvement in the provision of education and training at higher qualification levels includes employer consultation in curriculum development (e.g. Denmark in the agricultural sector) and work-based assignments and company based thesis works (e.g. Germany and Ireland in innovation and technology management courses). It also includes apprenticeships (e.g. France in the agriculture sector, UK-England in nursing and Finland and UK-England in teacher training), private corporate education and training initiatives (e.g. Ireland and Germany in innovation and technology management courses), tailored courses to company needs (e.g. Portugal in the finance sector, Ireland innovation and technology management courses), fully work-based learning (e.g. information and communication technologies further education system in Germany). Work experience is valued to differing levels. For instance, in the innovation and technology management area in Ireland and nursing in UK-England, prior practical experience and theoretical knowledge can be used to reduce required study time.

Research and policy follow-up

There are many national VET systems, contexts and traditions in Europe, especially at higher levels (EQF levels 6 to 8). There is diversity in national and sectoral policy developments, provider types, qualification types, and other aspects. Strengthening of European coordination of VET policies and practices is recommended to secure transparency, permeability and to help clarify the specific nature of VET at tertiary education levels. Three main issues should be taken forward in research and policy activities:

1. Labour market needs and VET at tertiary qualification level

During the last decade, there have been significant developments in VET programmes and providers at EQF levels 6 to 8. An increasing trend is for the labour market and industry to participate and influence both providers and programmes. Evidence from this study shows that traditional higher education could be more responsive to labour market needs, for instance in the Czech Republic, Poland, Portugal, and Romania. VET can fill some of the gap left by the traditional higher education institutions. An overall framework, regulatory and financial, should be developed to assist the ability of VET at higher levels and professional higher education to fill this gap. This framework must be sufficiently flexible to allow for different approaches to VET at higher levels in different sectors. For instance, older and more traditional sectors (e.g. nursing) benefit from a different treatment from those that are newer (e.g. information and communication technology).

2. Learning outcomes and parity of esteem

The shift towards learning outcomes in Europe has introduced a new approach to evaluating student achievements and to clarifying the skills students are expected to have on completion of their course. Learning outcomes are also beneficial for employers, as the knowledge, skills and competences that the students possess are more easily understood and transferred to the world of work. The attitude towards the learning outcomes approach is generally positive but, during early implementation it is difficult to predict what the impact it will be. It could prove useful for informed policy-making to set up a monitoring database to follow and assess the further developments of the use of learning outcomes in VET activities at EQF levels 6 to 8. The analysis indicates that, in some countries, the learning outcomes approach does not automatically result in greater parity of esteem in terms of educational aspects (e.g. Denmark and Germany). Achieving parity of esteem could be supported through national or regional actions to increase permeability between qualifications in entry requirements.

3. Investigating cooperation models at tertiary qualification level

Cooperation between labour market and education and training providers varies across Europe, with evidence of these links in the case studies. While high in many cases, there is an opportunity to build stronger linkages between the labour market and education and training institutions at EQF levels 6 to 8 in countries such as the Czech Republic, Poland, Portugal and Romania. It is beneficial to improve these linkages in such countries, and also to develop a larger variety of

cooperation models in those countries in which linkages are already strong. This can be achieved through sharing and transfer of successful practices and experiences that have been implemented at EQF levels 6 to 8. Evidence is needed on the various cooperation models that are currently being used or developed.

CHAPTER 1

Introduction

In Europe the challenges of globalisation and internationalisation of markets, and of technological and demographic change, as well as the changing nature of work have been recognised as demanding higher-level competences, skills and knowledge among the labour force (Cedefop, 2010a). This has led to a series of education and training reforms at national and European levels, including the Bologna and the Copenhagen/Bruges processes.

The Bologna process, dating from 1999, has the objective to develop a European higher education area to aid mobility and secure high-quality higher education. In the Copenhagen Declaration of 2002, ministers responsible for VET, the European Commission and social partners committed themselves to making the diverse VET systems and qualifications in Europe more transparent, effective and attractive through common priorities, cooperation and regular progress reviews.

Recent milestones have been the adoption in 2005 of the qualifications framework for the European higher education area (EHEA framework) and the European Recommendation on the European qualifications framework for lifelong learning (EQF) in 2008 (Cedefop, 2010b). Whereas the EHEA framework covers three levels (and possibly one sub-level) that correspond to the major qualifications awarded by higher education institutions (Bachelor, Master, Doctorate), the EQF is built upon eight reference levels which describe qualifications in terms of learning outcomes, ranging from basic (Level 1) to advanced (Level 8). It encompasses all levels of qualifications acquired in general, vocational as well as academic education and training (European Parliament; Council of the European Union, 2008). Levels 5 to 8 of the EQF cover higher education and are explicitly meant to be 'compatible with the framework for the European Higher Education Area and cycle descriptors agreed by the ministers responsible for higher education in 45 European countries at their meeting' (European Parliament; Council of the European Union, 2008).

In the framework of the renewed Education and training programme (2020), in June 2010 the European Commission presented its views on the future of vocational education and training for the following 10 years in the Communication A new impetus for European cooperation in vocational education and training to support the Europe 2020 strategy. In this Communication the European

Commission emphasised the importance of a continuous increase in the attractiveness and excellence of VET and the need to increase further the transparency of VET qualifications in Europe. It also stated the need for a well-functioning European VET system – including at the higher education levels – which is transparent and results in qualifications that are recognised throughout Europe. The policy views presented in this VET communication are used as an important overall frame of reference in the analysis of VET policies at the national level as presented and discussed in this part of the report (European Commission, 2010b).

Increasing attention has been dedicated to VET and HE throughout Europe, with a focus on improving quality, increasing transparency between countries and offering better qualifications. This study has the objective of improving understanding of VET/vocationally oriented education and training at higher qualification levels, namely at European qualifications framework (EQF) levels 6 to 8.

This research paper discusses and defines the concept of VET at EQF levels 6 to 8, starting from the Cedefop definition of 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, 2008a). Although it was found important to interpret VET flexibly at tertiary level, it was determined that the focus should be on VET programmes and courses that lead to a degree or qualification, i.e. a degree or qualification that is accepted as providing access to a vocation/profession. VET courses that do not individually provide a formal degree or qualification at EQF levels 6 to 8 were taken into consideration if the credits earned in these programmes were generally recognised by institutions that offer a formal qualification or degree or by employers. As the study does not only include a focus on ‘pure’ VET education and training initiatives, but also on vocationally oriented education and training at higher qualification levels, it defines vocationally oriented education and training as follows:

Table 1. **Working definition**

Vocationally oriented education and training at higher qualifications level means education and training that can contain aspects of both academic and vocational areas typically with the majority of vocational aspects. It is usually located at levels equivalent to levels 6 to 8 of the European qualifications framework.
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This research paper analyses critically aspects such as definitions of VET at these qualification levels, the provision and characteristics of VET/vocationally oriented education and training in Europe at higher levels, and the perspectives

on its future development and relationship with higher education. Practical evidence of VET at EQF levels 6 to 8 is presented along 6 sectors or disciplines (see Table 2) along the dimensions of governance, provisions and cooperation with the labour market.

Table 2. **Illustrative cases**

	Sector	Subsector	Countries
1	Agriculture	Agrofood economics	France, Denmark
2	Nursing	Specific qualifications/training after basic nursing qualifications	Norway, UK-England
3	Information and communications technologies		Germany, Poland
4	Distance Learning	Distance Learning in the finance sector	Portugal, the Netherlands
5	Teacher training	Training for teachers of people with special needs	UK-England, Finland
6	Management	Technology and Innovation Management	Germany, Ireland

The data and information on which this paper is based is taken from desk research, structured interviews with relevant stakeholders and an online survey. In total 87 experts and stakeholders have been interviewed. The questionnaire was addressed to 1 540 stakeholders of the 13 countries, requesting their informed opinions on VET at higher levels. The information for the case studies was sourced from desk research and structured interviews with relevant stakeholders, including representatives of ministries, national vocational agencies, higher education institutions, social partners, and employment organisations. An additional 50 semi-structured interviews were conducted specifically for the case studies.

Following this introduction, chapter 2 addresses the development of VET/vocationally oriented education and training at higher qualification levels in 13 selected countries in Europe (Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, the Netherlands Norway, Poland, Portugal, Romania, and UK-England). This first collection of evidence permits conclusions on VET at higher qualifications levels within national and regional contexts. Chapter 3 introduces the dimensions of governance, provisions and cooperation; with the labour market as key to the understanding of VET at higher qualification levels, it provides examples of initiatives run in different sectors (see Table 2). Each case study leads to a list of core items to the dynamic of changes within VET/vocationally oriented education and training at higher qualification levels. Finally, chapter 4 summarises the findings and elaborates on future research and policy challenges.

CHAPTER 2

Characterising VET at tertiary education level

This chapter deals with understandings and interpretations of VET at higher qualifications levels, expressed with the proxy of EQF levels 6 to 8. Full understanding can only be reached by contextualising tertiary level VET developments in vocational education and training (VET) and higher education (HE) policies. This chapter does not present detailed reports per country but provides, wherever relevant, specific examples from the thirteen countries involved.

2.1. Towards a definition

Characterising VET at tertiary education level is difficult since this concept stretches the boundary of education and training systems normally in use (such as initial VET, continuous VET and HE) but also of policy-related understandings and domain-building strategies. It relates to long-lasting discussion among scholars on professions and vocations, and to the existing classifications of degrees, programmes, qualifications, vocations and occupations. Discussing these relevant items towards a definition of vocationally-oriented education and training at higher qualifications levels provides a framework for further analysis and common understanding.

VET has traditionally been provided by (upper) secondary education institutions and understood as such by policy-makers. The explicit inclusion of VET at tertiary levels in VET European policy documents is relatively new. A number of questions are apparent. Have the formal definitions of VET as used in policy documents been adapted to this emergence of VET at tertiary levels? Have developments in practice caused an adaptation of the definitions formally used? How do these VET definitions refer to professional education programmes offered by tertiary education institutions, for example, in law, medicine and engineering? A fair starting point for the analysis is to consider VET definitions as provided by the European Commission, Cedefop and the OECD. This analysis aims to provide an insight into the extent to which, in the supranational context,

the distinction between tertiary level VET and academic tertiary education is clear, consistent and straightforward.

In the recent VET Communication by the European Commission (European Commission, 2010b) a distinction is made between initial vocational education and training (IVET) and continuing vocational education and training (CVET). The former is expected to 'equip young learners with skills directly relevant to evolving labour markets', while CVET is aimed at providing structures through which 'adults can update their skills and competences' (European Commission, 2010b, p. 2). These definitions are in line with Cedefop's definition of 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, 2008a, p. 202)

In characterising the structural features of IVET and CVET the Commission states that 'VET in Europe covers diverse national systems, rooted in their specific economic and social environments. IVET is normally part of upper secondary education but also includes a tertiary level (called '*Fachhochschulen*', 'universities of applied sciences' or 'vocational colleges' in many countries). CVET includes a range of vocationally-oriented training provided by a variety of training providers. IVET takes place within quite regulated frameworks while CVET is often unregulated. What is common is that all are facing challenges, all need to be modernised' (European Commission, 2010b, p.3).

Those examples relate in-fine to the existing classifications developed for different purposes. The variety generates much confusion in research and policy activities: IVET in the previous paragraph refers to upper-secondary and tertiary levels, a denomination linked to the International Standard Classification of Education (ISCED) whereas the understanding of VET as in the Cedefop definition links to the labour market and its needs in terms of learning outcomes. This later approach is central to the European Qualifications Framework (EQF).

The International Standard Classification of Education (ISCED) was designed by UNESCO in the early 1970's for statistical purposes and differentiates between six levels and fields. ISCED 4 programmes are not regarded as tertiary programmes; they are often not significantly more advanced than programmes at ISCED 3 (upper secondary education level) but they serve to broaden the knowledge of participants who have already completed a programme at level 3 (Cedefop, 2010b, p. 109). ISCED divides programmes into theoretically based/research preparatory/giving access to professions with high skills requirements programmes on the one hand, and practical/technical/occupationally specific programmes on the other (UNESCO-UIS, 2006). ISCED level 5 is divided into education programmes type ISCED 5A (corresponding to

those theoretically based/research preparatory (history, philosophy, mathematics), those giving access to professions with high skills requirements (e.g. medicine, dentistry, architecture) and into programmes of type ISCED 5B which are practical/technical/occupationally specific. Even though ISCED classification stresses the differences between occupation and profession, it provides an argument for our approach in this research. According to ISCED, the organisational structure of tertiary education programmes varies greatly across countries; no single criterion can be used to define boundaries between ISCED 5A and ISCED 5B. Further, 'qualifications in category 5B are typically shorter than those in 5A and focus on occupationally specific skills geared for entry into the labour market, although some theoretical foundations may be covered in the respective programme' (UNESCO-UIS, 2006, p. 35). This supports the analysis of vocationally oriented VET across the boundaries of organisational patterns and institutional provider categories.

A deliberate choice for this paper is to refer to EQF at levels 6 to 8, which corresponds to any qualification associated to learning outcomes meeting specific requirements in terms of knowledge, skills and competence (see the descriptors of the levels 6 to 8 in the Table 3) and to specific qualification types awarded by universities and some higher education institutions (Bachelor, Master, Doctorate).

EQF asserts compatibility for the higher levels of qualifications with the qualifications types (Bachelor to level 6; Master to level 7 and Doctorate to level 8) based on equivalences between their respective learning outcomes descriptors of qualifications/qualification types.

A number of issues of relevance for this analysis emerge from policy documents and classifications for the definitions and characterisation of VET. At European level, the specific meaning of the terms post-secondary education, tertiary education and higher education is not always clear. This can be illustrated by the different terms used in Eurostat's European tertiary education statistics: tertiary education is regarded as 'all education following secondary schooling provided by higher education institutions' (Eurostat, 2009a). No distinction is made between tertiary VET education and academic higher education. The 2010 VET Communication indicates that 'across the EU approximately 13% of students are enrolled in tertiary VET and around 10% of working population holds a post-secondary non-tertiary education degree' (European Commission, 2010b, p. 3). While no definition of 'post-secondary non-tertiary education' is given in this Communication we assume that it refers to ISCED 4 and EQF level 5 qualifications (Cedefop 2010b, p. 109).

Table 3. Synopsis of qualification levels 6 to 8 as in EQF

Qualification levels	EQF descriptors	
EQF 8	Knowledge	knowledge at the most advanced frontier of a field of work or study and at the interface between fields
	Skills	the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice
	Competence	demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research
EQF 7	Knowledge	highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research critical awareness of knowledge issues in a field and at the interface between different fields
	Skills	specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields
	Competence	manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
EQF 6	Knowledge	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles
	Skills	advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study
	Competence	manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts take responsibility for managing professional development of individuals and groups

Source: European Parliament; Council of the European Union, 2008.

Given the specific focus of this paper ISCED qualifications will not be used; instead it will refer to EQF levels 6 to 8. Following the European Commission's terminology the terms 'tertiary education' and 'higher education' will be used as synonyms in this report. This refers to all initial education following secondary schooling offered at EQF levels 6 to 8, whether it is 'academic' or VET/professional tertiary level education. However, while this means that we do not focus on educational developments at EQF level 5 in this report, we will refer to the introduction of new programmes at EQF level 5 in higher education systems in Europe, for example the associate degree programmes (AD) in the

Netherlands. This also means that this study does not address the developments with respect to post-secondary non-tertiary level education VET, but focuses on tertiary level IVET.

The definitions of VET above also do not make a clear distinction between ‘tertiary level VET’ and professional higher education offered by around 4 000 universities and other formal higher education institutions in Europe. For example, neither the European Commission’s definition of IVET nor Cedefop’s general VET definition necessarily exclude or include university education in fields such as law, medicine, veterinary sciences, engineering and dentistry. The OECD encounters the same dilemma, it defines VET as including ‘education and training programmes designed for, and typically leading to, a particular job or type of job. It normally involves practical training as well as the learning of relevant theory. It is distinct from (academic) education – for example in mathematics, which is relevant to a very wide range of jobs. (...) Education and training for some high level professions such as medicine and law meets the definition even though they are not normally described as VET. (...) Initial VET includes programmes mainly designed for and used by young people (...) It includes many upper secondary and tertiary programmes. These definitions and distinctions inevitably leave some blurred edges, since programmes can meet some of the relevant criteria but not all of them (for example programmes designed for direct labour market entry but which rarely result in that outcome)’ (OECD, 2010a, p. 26).

Being vague in its approach, the OECD suggests an overlap between tertiary level VET programmes and tertiary level professional education programmes, as do the European Commission’s and Cedefop’s definitions. This makes it difficult to distinguish between these two types of programmes and to draw a precise and uncontroversial border between them. This especially concerns fields such as engineering and business studies, in which there are education and training programmes in universities and higher professional education institutions, as well as in tertiary level private vocationally oriented colleges in the 13 countries included in this study.

2.1.1. Where to start?

For this study it is necessary to take as a starting-point so that a distinction can be made between – to use the terms of the European Commission (European Commission, 2010a) – tertiary level VET and professional academic programmes offered in tertiary education institutions. Only this distinction can provide analysis into the nature and consequences of the relationships between tertiary level VET programmes offered at EQF levels 6, 7 and 8, and ‘academic’ tertiary education

programmes aimed at ‘equipping people with knowledge, know-how, skills and/or competences required in particular occupations’.

This research paper focuses on initial VET at tertiary education levels, i.e. on VET courses and programmes that lead to a degree or qualification at EQF levels 6 to 8. These qualifications are intended to provide access to specific occupations or occupation areas for workers at the beginning of their careers, i.e. the young learners the European Commission’s definition refers to (European Commission 2010b). The study uses a flexible interpretation of VET at tertiary education level to identify relevant recent developments outside the relatively strict EQF level descriptions. However, to prevent arbitrariness, the focus is on VET programmes and courses that lead to a recognised degree or qualification, i.e. a degree or qualification that is formally accepted to provide access to a specific vocation/profession ⁽²⁾. Such a qualification or degree does not guarantee access to employment but, without it, entrance into a vocational/professional field is generally difficult, if not impossible, despite a growing understanding of the importance of learning outcomes. In addition, VET programmes or courses that award credits or qualifications that can be recognised as part of an educational trajectory leading to a formal degree or qualification at EQF levels 6 to 8 are of interest for the analysis. These are generally short-term programmes or courses that, in themselves, do not lead to a formal degree or qualification, but are regarded as operating at EQF levels 6 to 8. The credits earned in these programmes can be recognised by institutions that offer a formal qualification or degree, or by employers.

Based on the above considerations and reflections, focusing primarily on IVET, the study uses Cedefop’s definition as the working definition, i.e. ‘VET is 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, 2008a, p. 202). Further, the term tertiary academic education is used when referring to formal academic higher education, while tertiary level VET refers mainly to VET education offered at the highest levels outside formal academic higher education. However, there are challenges in using this definition, given that the European Commission and most national governments in the selected 13 case countries take as a starting point that tertiary VET is offered first and foremost by higher professional education institutions. This applies across fields such as nursing, teaching training, business administration, social work, and engineering, implying that, in practice,

⁽²⁾ For an overview of regulated professions. Available from Internet: ec.europa.eu/internal_market/qualifications/regprof/index.cfm?fuseaction=home.home [cited 2.5.2011]

the distinction between tertiary level VET and tertiary level professional education is difficult to make.

2.2. Distinctions between ‘vocation’ and ‘profession’

Before providing a more detailed analysis of VET developments at EQF levels 6 to 8 in the countries in this study, we discuss the distinction between vocational and professional tertiary education, and the underlying concepts of vocation and profession. Here two different perspectives are addressed:

- a hierarchical interpretation in which profession is regarded as having a higher status than vocation. All professions are vocations but not all vocations are professions (Slagstadt, 2008);
- an interpretation in which vocation and profession are regarded more or less as synonyms and the relevant distinction is not between vocation and profession, but between vocational (and professional) training and (general) education.

The first perspective is generally more emphasised when it comes to tertiary level education challenges, and therefore is discussed more thoroughly than the second perspective, which refers more to the debate concerning the developments in upper secondary general and vocational education (Lasonen and Young, 1998).

2.2.1. Vocation, profession, occupation

In European tertiary education systems in general the term higher professional education is used to refer to programmes, institutions and sectors that prepare students for specific professions. The term vocational higher education is hardly ever used, neither at institutional nor national level. While higher professional education has become increasingly academically oriented over recent decades (Kyvik, 2009), it is still separated in most countries from general academic education, which is usually offered at universities and has a strong research basis. It is relevant in this study to relate the vocational versus professional higher education discussion to the distinction between vocation and profession. A first glance at general dictionary definitions indicates that ‘vocation’ is the work in which a person is employed; ‘profession’ is an occupation or vocation requiring specialised knowledge and often long and intensive academic preparation (e.g. www.thefreedictionary.com). The International Standard Classification of Occupations (ISCO, 08) defines occupation for statistical purposes as ‘a set of jobs whose main tasks and duties are characterised by a high degree of

similarity' (ILO, 2008). This approach currently underlies the development of the European skills, competences and occupations taxonomy (ESCO) which will describe for each occupation the most relevant skills, competences and the qualifications needed.

In relevant academic literature 'professions' are argued to be distinguished from non-professional vocations on the basis of a number of core characteristics. These include: extensive academic preparation; control over ethical and other issues by a professional body of representatives from the profession; a high degree of autonomy in work; and regulated access to and professional closure of the profession, i.e. the tendency to exclude those who have not met the profession's requirements and have not joined the appropriate professional body (Parsons, 1951; Goode, 1960; Yam, 2004; Scott, 1995). A core aspect argued by these and other scholars to distinguish professions from vocations is the complexity of skills, competences and knowledge needed for mastering work requirements in practice, and the standardisation of the educational paths providing entrance to professional practice. Traditionally the education and training of these skills, competences and knowledge has been the task of tertiary education. The question here is how can the developments of tertiary level VET in Europe in the last five to ten years be interpreted from the perspective of the distinction between vocations and professions?

European universities were originally regarded as vocational schools, providing training in law, theology and medicine. These three vocations developed into what has been called the first generation of professions (Slagstadt, 2008, p. 56-58), and the education and training of these professionals is firmly institutionalised in universities. The development of subsequent generations of professions followed a similar pattern, i.e. the growing complexities of the work situation leading to demands for a standardised higher level educational preparation. With respect to many of these emerging professions, e.g. dentists, agricultural scientists, and even engineers, universities initially rejected the responsibility for developing the professional education programmes as they were considered non-academic (Jaraus, 2004).

As a consequence, new institutions of higher learning were established that, after some time, were either upgraded to university status, became part of an existing university ⁽³⁾ or developed into a formal higher professional education institution ⁽⁴⁾. This implies that a specific form of higher education preparation has subsequently become part of the high status of the new professions. These are

⁽³⁾ This was in general the pattern before WWII.

⁽⁴⁾ This has been the general pattern in Europe especially since the early 1960s.

cases of vocations becoming professions. This happened in the 19th century in vocational areas such as agriculture, engineering, dentistry, veterinary medicine and commerce, followed in the 20th century in welfare state vocational areas such as nursing (Yam, 2004), teaching, and social work, as well as areas such as architecture, and more recently information and communication technologies (ICT). The consequence is that the original list of three 'high level' professions has grown, and now includes the mentioned former vocational areas (Slagstadt, 2008).

However, there are also new aspects in the current emergence of VET programmes at tertiary education levels. First, globalisation and the notion of knowledge economies have led to a fundamental discussion on the effectiveness of traditional higher education and training practices. Second, there is a growing focus on the importance of lifelong learning and the underperformance of higher education institutions in providing adequate lifelong learning opportunities. Third, there is a greater and more direct involvement of private sector employers in the education and training of their employees, coupled with growing concern about the academic paths under which higher education institutions prepare their students for private sector jobs. Finally, there is increasing understanding that the current postsecondary education structures should become more diverse and flexible for the adequate education and training of future knowledge workers in Europe (European Commission, 2010a; 2010b).

It can be argued that part of the European VET developments at higher levels over the last 5 to 10 years can be linked to the professionalisation of certain vocations, largely along the lines that have been seen before in European education history. However, in addition to these 'natural' features, there are also new elements in VET developments at higher levels that are related to globalisation and the requirements of dynamic knowledge economies. These new elements make it difficult to assess whether current VET developments at the highest education levels will follow the traditional path of being gradually integrated and institutionalised within established tertiary education sectors, or whether a new tertiary level VET system will develop that combines elements of traditional degree education, lifelong learning, part time education, research and development (R&D) training and use, internships and sandwich programmes, and in which practical training is included.

2.2.2. Vocational versus professional training

This distinction refers mainly to upper secondary vocational education (Lasonen and Young, 1998; Gonon, 2004; Méhaut, 2001). The focus is on the traditional (hierarchical) distinction between education aimed at transmitting cultural

heritage and intellectual traditions, and vocational/professional training which was identified only with the world of work (Schwarzlose, 1962). As a consequence of globalisation and growing worries about the global competitiveness of European economies, reform debates have begun to focus on the need to reorganise upper secondary education and ensure stronger job orientation in general education curricula.

Young and Raffe (1998) have identified four strategies that various countries in Europe were applying at the end of the 1990s to achieve parity of esteem between 'practical-training' and school-based forms of secondary vocational education. Those include vocational enhancement, mutual enrichment, linkages, and unification. Vocational enhancement can be regarded as an attempt to upgrade institutionally organised VET. Vocational education as a whole should receive greater appreciation, while the system of vocational education should still clearly be job-oriented. Young and Raffe (1998) refer to Germany and Austria as examples of the successful implementation of this concept. The second strategy (mutual enrichment) can be found in the Nordic countries, especially in Norway and Finland. The aim of this strategy is to bring the systems of vocational and general education more in line with each other; in this approach, elements of one system may be found in the other. The third strategy (linkages) is found in France and UK-England. Its main component is an identical system of certification and recognition for general education and vocational education, which greatly simplifies the connections between the two education system components. The fourth strategy (unification) is the most radical, since it aims to eliminate the distinction between general education and vocational education and training by unifying the whole education system. This approach can be found in Sweden and UK-Scotland.

While the first distinction is more directly related to current reform debates in European tertiary education, the second distinction is also relevant since it shows that national VET reform strategies at secondary education level are diversified and can be categorised into four different approaches. We can assume that national VET policy and reform debates at secondary and tertiary education level are linked. Also, the reform debates concerning vocational education at secondary education level focus on the need to integrate apprentice-based with school-based vocational education. While the debates concerning tertiary level VET do not use the terms apprentice- and school-based, the dual VET structures at tertiary level resemble this distinction in the sense that they distinguish between full-time higher education and education which includes practice-based learning outcomes. Given that one of the aspects in the current European VET policy debates that is addressed most frequently is the need to improve the links

from VET to higher education, it is important to examine how reforms in upper secondary vocational education relate to the developments and policy debates in tertiary level VET education.

One trend is for higher professional education to become more academic. If upper secondary vocational education has become more job-oriented over the last ten years, this might imply that the transition from upper secondary VET to higher professional education programmes has become more difficult. While the latter issue lies beyond the scope of this study, it is linked to the vertical policy coordination challenge discussed below.

The complexity of the distinction between vocation and profession at tertiary education levels can further be illustrated by referring to the recent VET Communication (European Commission, 2010b, p. 6), in which it is argued that the demand for specific professions is one of the factors that determine the attractiveness of VET for individual learners. However, as examples of professions currently in demand, only traditional craft trades, such as carpenters, welders and plumbers, are mentioned. There are consequences to this. If, in European level VET policies, vocations and professions are regarded as synonyms, all tertiary professional education programmes offered in academic higher education institutions are VET programmes. It can thus be argued that VET policies should include higher education VET/professional programmes more directly and in more detail. If, however, the distinction between vocation and profession is seen as relevant for European level VET policies, the use of the terms vocation and profession in presenting VET policies should be explained in more detail and more consistently than is currently the case.

2.3. Parity of esteem and vocationally oriented education and training

What is meant by parity of esteem in the context of vocationally oriented education and training? Distinctions exist between vocation and profession and between vocational/professional and general academic education: parity of esteem relates to efforts to reduce the structural separation and practical effects of these distinctions. It concerns educational aspects, career and employment issues, and personal development aspects; the last of these will not be discussed here. The educational aspects concern the extent to which VET qualifications provide the same educational opportunities as general/academic education qualifications. Do, for example, VET qualifications at EQF level 6 provide access to university programmes at EQF level 7? The career and employment aspects

refer to the extent to which VET qualifications provide the same career opportunities and are awarded at the same salary levels as general/academic education qualifications. Do, for example, VET qualifications at EQF level 6 give access to the same type of jobs and occupations as university qualifications at EQF level 6? Are VET qualification holders at EQF level 6 and university qualification holders at EQF level 6 salaried at the same level for comparable jobs?

The issue of parity of esteem between VET and tertiary education qualifications can also be related to the policy debates on higher education diversity and differentiation, which have been the object of various studies over the last 15 to 20 years (Rhoades, 1990; Huisman, 1995; Meek et al., 1996; Teichler, 2008; Kyvik, 2009; van Vught, 2009, etc.). This discussion has focused mainly on the binary divide in the national European higher education systems between academic, referring here to universities, and professional higher education; the latter is offered in separate institutions having different names in different countries, such as *fachhochschulen*, *hogescholen*, *høyskoler*, universities of applied sciences, polytechnics or vocational colleges. As well as specific national developments resulting from the Bologna process, in a number of countries this binary divide has been blurred over the last 10 to 15 years. This implies that higher professional education has been 'academised', increasingly overlapping and integrating with traditional academic (university) education. This can be regarded as a policy issue since it is argued that this reduces the transparency of higher education institutions, programmes and qualifications for students as well as employers (van Damme, 2009, p. 47-52). In the discussions, no distinction is made between VET at higher levels and professional higher education. It is generally assumed that vocational and professional higher education are synonyms (Ibid, p. 48-49), and little attention is paid to the specific nature and consequences of the recent development of VET activities at higher levels.

This is also visible in the EU funded project undertaken by the Center for Higher Education Policy Studies (CHEPS) to design a European classification of tertiary education institutions as a tool for mapping the diversity of the European tertiary education landscape (van Vught, 2009). This project includes only formal tertiary education institutions and does not pay attention to VET programmes that are offered outside them. Concluding, the issue of the parity of esteem between tertiary level VET education and academic higher education is of great policy importance as well as of practical relevance to all holders of tertiary level qualifications. A European classification that can do justice to the differentiation of the whole European tertiary education sector should also include the

institutions that offer VET programmes leading to qualifications at EQF levels 6 to 8.

In the recent policy documents from the European Commission (above) it is indicated that VET needs to be modernised (European Commission, 2010a, p. 18; 2010b, p. 3). In the Communication on VET, specific implications of this need are proposed for the relationship between VET and higher education, i.e. ‘genuinely open pathways between VET and HE have to be ensured as well as tertiary VET should be strongly supported’ (European Commission, 2010b, p. 4). Before discussing how these modernisation challenges are met nationally, we want to discuss the relationship between VET and tertiary (or higher) education from the perspective of a policy area (VET) that is moving from its traditional core areas (secondary education) into new education domains. In such a transition phase, it is important that the understanding of the practical realities and development potential of VET at higher levels is updated.

It is too early to identify accurately the final outcomes of this century’s developments in education and training for the VET sector. This is partly the result of the strong institutional basis of the traditional academic tertiary education sector. Johan P. Olsen, one of the leading scholars studying processes of European integration, has argued that in tertiary education ‘Institutional imperialism, with intrusions and attempts to achieve ideological hegemony and control over other institutional spheres, may threaten to destroy what is distinct about other institutional spheres. There is, however, also institutional defence against invasion of alien norms. Typically, an institution under serious attack re-examines its pact with society and its rationale, identity and foundations, its ethos, codes of behaviour and primary allegiances and loyalties. Likewise, there may be public debates about what different institutions are supposed to accomplish for society, how each is to be justified and made accountable, what is to be core institutions and auxiliary institutions, and what kind of relationship government is supposed to have to different types of institutions. A possible outcome is the fall and rise of institutional structures and their associated systems of normative and causal beliefs and resources. Arguably, the university now faces this kind of situation.’ (Olsen, 2007, p. 28)

The development of tertiary VET in Europe now seeks focused and effective governance and policy coordination with respect to all tertiary education and training at EQF levels 6 to 8. This concerns aspects such as how tertiary education activities in the EU Member States are organised and funded, how they relate to society at large and to the private sector in particular, and the way in which they prepare their students for the labour market. These are of relevance when discussing the consequences of the growing European and

national policy focus on education: labour market relationships, student employability, lifelong learning, and the emergence of VET activities at tertiary education levels. At the same time, the university defence to which Olsen refers implies that many universities and other academic higher education institutions have responded to the 'invasion' by developing, among other things, new, labour market oriented courses that could be regarded as VET courses. There is also a tendency among new VET providers, especially in Central and Eastern Europe, which offer courses at EQF levels 5 or 6, to aim at formally becoming part of the tertiary education sector, instead of institutionalising a new tertiary VET domain at EQF level 6 to 8 outside the traditional tertiary education sector. As indicated, VET developments at higher levels are in a relatively early stage in Europe and thus it is not possible to conclude whether all major tertiary level VET developments will be integrated into the academic higher education sector, whether a separate tertiary VET pillar will be institutionalised throughout Europe next to the academic higher education pillar, or whether we will see both forms institutionalised at national level in future European tertiary education structures.

2.4. Policy-making systems: similar goals, different pathways

How does the political and economic interest in VET in Europe, including tertiary level VET, relate to national VET policy developments? This question refers in the first place to the vertical policy relationships, i.e. the relationships in the VET policy area between European level, national, regional and organisational or institutional level. However, there is also a horizontal policy dimension, i.e. the coordination of the VET policies with policies in other relevant areas.

Ambitious European and national level strategies to strengthen European global economic competitiveness require a strong and effective vertical and horizontal coordination of all relevant innovation and knowledge policies (Braun, 2008; Gornitzka, 2010). These include VET and higher education policies. Analysis of national policies with respect to VET at tertiary education levels reveals significant national policy differentiation in this area. This implies that the European level policy initiatives on tertiary VET are not followed up in a consistent way throughout Europe but are interpreted and translated within a specific national context. This suggests that vertical coordination of VET tertiary policies is still relatively weak. More than at the European level, national tertiary VET policies are integrated with national higher education policies, and partly with others including research and technology policies.

In the multi-level and multi-actor European governance systems for education and training the main focus over the last ten years has been on vertical governance challenges, as in the implementation of the Bologna Process and the Copenhagen Process (Kehm et al., 2009). Horizontal governance challenges have received less attention (Braun, 2008; Gornitzka, 2010), though they also affect VET policy, as in the recent VET Communication which focuses on vertical, not horizontal, governance challenges when it comes to coordinating between VET and labour market, research, innovation, and technology policies (European Commission, 2010b). The question is what are the aims of policy coordination and why is it important? The following five objectives for policy coordination have been identified in the relevant literature (Painter, 1981; Braun, 2008, p. 230): minimisation of duplication and overlap; avoidance of policy inconsistencies; reducing the chances of conflict, both bureaucratic and political; quest for coherence and cohesion and an agreed ordering of priorities; promotion of a comprehensive or 'whole government' perspective against the constant advocacy of narrow, particularistic or sectoral perspectives.

Given their importance, VET policy coordination challenges from a vertical and horizontal perspectives are discussed first, before turning to the national VET policies. Next, key points of the national policy-making processes with respect to tertiary level VET (EQF levels 6 to 8) are assessed in more detail, with specific examples drawn from the 13 countries included in the study. These concern the focus and attention on VET at the highest education levels, as identified through national policies; the central actors in the VET policy-making processes; and the variety of approaches to governance, regulation and funding of VET.

2.4.1. Understanding VET at the highest education levels

Understanding, defining and interpreting VET at tertiary education levels is linked to traditions and contexts; this comes clearly out of the interviews undertaken for this research paper. In national policies aimed at tertiary level VET, the distinction between VET and academic education is less clear than the four strategies that European countries use in the integration of apprentice- and school based secondary education VET, i.e. vocational enhancement, mutual enrichment, linkages, and unification (Young and Raffe, 1998). In most of the countries, the separate policy approaches to vocational and general education at secondary education levels are not continued at the tertiary level: vocational education at tertiary levels is either part of higher education policy, or it is a non-policy issue. The resulting variety between the 13 countries makes it difficult to categorise the national tertiary VET policies in the way done by Young and Raffe (1998) for

secondary vocational education policy. Nonetheless, in policy understanding of VET at tertiary education levels offers the following broad categories of approach:

- (a) dual system: Germany;
- (b) integrated system of certification and recognition:, Ireland. France, UK-England;
- (c) tertiary VET part of higher education policies:
 - (i) higher professional education and university education increasingly integrated: Norway;
 - (ii) higher professional education and university education kept separate: Czech Republic, Denmark, the Netherlands, Finland;
- (d) policy emphasis on academic tertiary education: Greece, Poland;
- (e) no explicit focus on VET at tertiary education levels: Portugal, Romania.

Germany seems to be most advanced in Europe in developing a dual vocational, higher education system at EQF levels 6 to 8. It is the only country in this study that has developed an NQF in which vocational master craftsmen qualifications earned outside the tertiary education systems are proposed to be classified at EQF level 6. There seems to be a need to coordinate the referencing process across the Member States to ensure a common approach to levelling qualifications especially as master craftsmen are concerned; Austrian master craftsmen are suggested to be classified at EQF level 5. However, the development of a comprehensive NQF is not yet finished in Germany, and the current proposals opt for an 'equal, but different' qualifications approach at levels 6 and 7. This implies that specific VET and tertiary education qualifications are regarded as equal, without the VET qualifications giving access to tertiary education programmes at the next level (Klump, 2010).

In UK-England and Ireland there is no dual tertiary VET-HE as in Germany, with VET qualifications at EQF levels 6 and 7 offered by private sector employers. Instead there is an emerging set of non-higher education VET programmes at EQF levels 5 and 6 offered in the public sector by further education colleges and private providers. However, the private VET sector is very small and one of EQF level 6 programmes offered by further education college sector is a Bachelor level degree in cooperation with one of the English universities.

France established its *Répertoire National des Certifications Professionnelles* (RNCP) in 2002, considered as the French NQF. A revision of this national framework is under way, implying that the five-level structure of qualifications and degrees introduced in 1969 will (probably) be changed. It is believed important that a new NQF is developed to increase the coherence

between national qualifications to make qualifications acquired through formal and informal learning more transparent. The NQF works as a transition device between national qualifications and the EQF and related to debates between EQF and sectoral qualification frameworks.

In the other study countries, education leading to qualifications at EQF levels 6 to 8 is regarded as part of tertiary or higher education. Tertiary level VET is either not regarded as a policy issue on its own, or tertiary level VET policies are part of general tertiary education policies.

In the Czech Republic, Denmark, Finland, the Netherlands and Norway, the national policy strategy is that VET at EQF levels 6 to 8 has to be offered by tertiary education institutions. Here there is a specific policy approach to professional higher education programmes, even though the responsibility falls under the same ministry as that for academic tertiary education. Only in Denmark is tertiary education VET the responsibility of a separate ministry, i.e. the Ministry of Education, while the Ministry of Science, Innovation and Technology is responsible for university education. In Norway no policy distinction is made between tertiary level VET and academic higher education at EQF levels 6 to 8. This is clearly visible in the current tertiary education structure and policy dynamics in Norway where all higher professional education institutions (*høyskoler*) have the right to offer programmes at EQF levels 6 to 8; since 2003 these institutions can apply for university status.

In Greece, Poland, Portugal and Romania there is either a strong policy focus on academic higher education, with marginal inclusion of tertiary level VET issues, or there are no specific tertiary VET policies.

As Braun (2008), Gornitzka (2010), Olsen (2008) and others have argued, the role of education, including VET, in the national knowledge economy has become increasingly a policy issue for governments in Europe. As part of this development, national education and training have to be more integrated with other knowledge policy areas, such as basic research, technology and innovation. An example of such development is a recent White Paper (2008) in the Czech Republic, in which tertiary education (including vocational education) is explicitly positioned in the context of the 'economy based on innovation', and a clear link is made to the regional dimension and strategic needs of the industry (5). The link to knowledge economy – 'a knowledge society based on solidarity' (Ministry of Education and Research of Norway, 2009, p. 5) – was also noted in Norway. It is argued that the future Norwegian need for manpower will follow the

⁽⁵⁾ White Paper on Regional Education; the analysis of the Confederation of Industry and Transport on *Strategic needs of the Czech industry in the 2008-11 period*

general European pattern in the sense that there will be a strong increase in the demand for employees with a higher education qualification, and a reduction in the demand for employees with only basic education qualifications. The focus in the policy paper is on the measures the Ministry is proposing with respect to higher education. In this policy focus, VET (in Norwegian *yrkesutdanning*) at tertiary education levels is assumed to be part of higher education. This implies that proposed measures to stimulate the development of VET Bachelor level programmes next to academic Bachelor programmes are aimed at the existing higher education institutions. Also, in the measures to strengthen the relationship between higher education and the private sector, the focus is on the existing universities and professional education institutions (*høyskoler*) (Ministry of Education and Research of Norway, 2009, p. 75-78). Since in Norway there is no formal distinction between higher education and VET at EQF levels 6 to 8, the various policy initiatives and suggestions refer to formal tertiary (or higher) education, implying that the universities have to strengthen their role in offering VET programmes, while no mention is made of any VET providers or developments outside the formal tertiary education institutions.

There appears to be a common policy vocabulary and a common set of policy goals with respect to academic and VET education at EQF levels 6 to 8 across the most of the 13 countries. This includes those with separate policy approaches for VET and academic tertiary education, and those that have an integrated approach. Exceptions are countries that do not have a specific policy approach to VET at EQF levels 6 to 8, i.e. Greece, Poland, Portugal and Romania. While there are national differences in emphasis and policy instrumentations, this common set includes issues of the quality of tertiary education, the relationship between educational providers at these levels and the private sector, the need to strengthen the autonomy of the providers, the need to make all tertiary education programmes more labour market oriented, and the need to increase private contributions to the costs of tertiary education.

The emergence of lifelong learning as an important policy issue can also be observed in several countries, through a focus on adult learners (Germany and the Nordic countries), on the recognition of non-formal and informal learning, e.g. Denmark and Norway, and on the learning outcomes approach as a basis for qualifications, e.g. Ireland and UK-England. Again, it should be emphasised that there is a great variety within the group of countries studied as regards policy instrumentation for lifelong learning, as well as the lifelong learning structures in practice.

In the Czech Republic, Greece, Poland, Portugal and Romania, one of the main problems of national education and training system is the low effectiveness

of links to the labour market. Various policies in these countries are aimed at strengthening the relationship between VET providers and the labour market, for instance through continuous dialogue intended to result into benefits for both aspects, i.e. high quality VET provision and better prepared professionals. However, this does not generally refer to VET at EQF levels 6 to 8 in these countries, but instead to VET at EQF levels 3 to 5.

In most of the countries included in this study the policy understanding of VET at EQF levels 6 to 8 covers a number of common areas and aims at achieving comparable policy goals. However, the policy instrumentations and tertiary education structures vary, in the first place concerning the location of tertiary VET education. This ranges from fully integrated in the overall tertiary education system to part of the tertiary level VET development being outside the established academic higher education system. Second, it concerns the structure of the tertiary education system, where all countries that approach tertiary VET as an integrated part of the national tertiary/higher education system have some form of a binary tertiary education system with VET/professional tertiary education forming one sector and the universities another. In Ireland and Norway, the difference between the university sector and the professional tertiary education/VET sector is blurring, while elsewhere the relevance of it is being discussed, e.g. the Netherlands. In Denmark, the distinction between the university sector and higher professional education/VET sector is strictly maintained.

2.4.2. Core actors in the VET policy-making processes

Core actors to national VET policy processes are, in most countries, the ministries of education. The most common organisational approach to VET policy is that the responsibility for all education activities at the highest levels falls under one ministry. This is the case in the Czech Republic and Finland (where other ministries are involved through an advisory role), Ireland (lower levels of VET fall under the Department of Enterprise, Trade and Employment), Norway (includes all VET policies), Greece (continuing education under the Ministry for Trade and Labour), Poland (no specific distinction of VET at higher levels exists), the Netherlands and Romania. In Portugal, there is no official VET policy on levels 6 to 8, and tertiary education falls under the responsibility of the Ministry of Science, Technology and Higher Education, while the Ministry of Labour and Social Welfare has a Secretary of State for Employment and VET. Other special cases are:

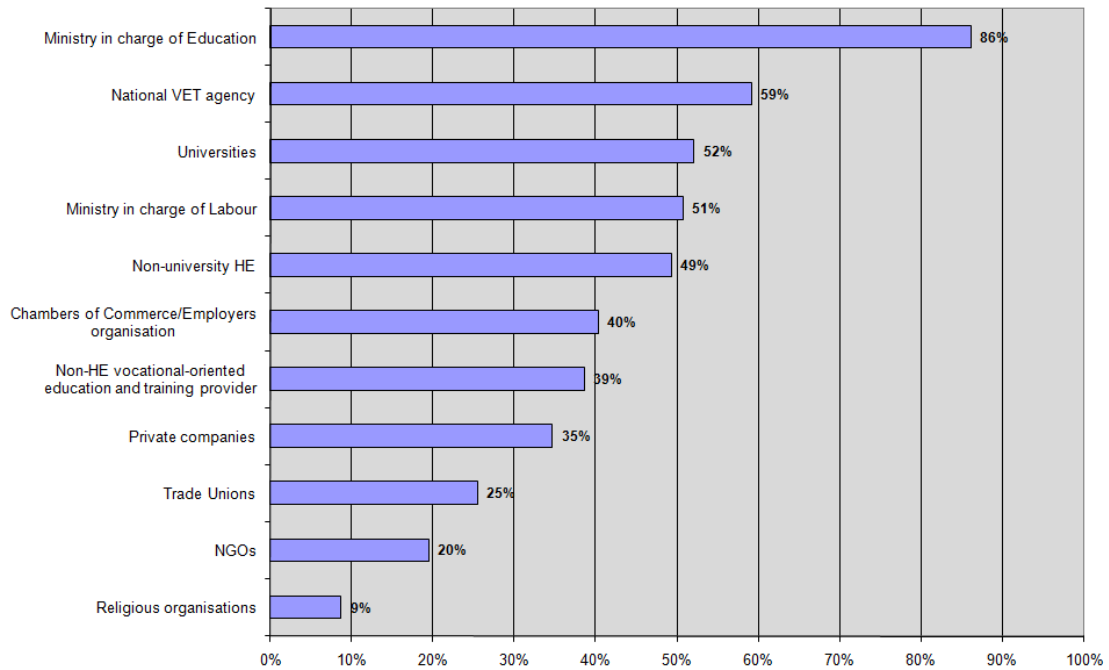
- Denmark where there is a clear differentiation at higher levels and education sector-specific divisions. VET and the higher professional education sector

fall under the responsibility of the Ministry of Education, while universities fall under the responsibility of the Ministry of Science, Technology and Innovation;

- UK-England, where both university and vocational education fall under the responsibility of the Department for Business, Innovation and Skills (BIS);
- Germany, where there is a federal structure, and France, where a multitude of ministries are involved in coordinating VET policies.

The questionnaire respondents indicate that, in addition to a Ministry of Education, other influential actors also participate in VET policy processes: national VET agencies, higher education institutions, and other ministries (for instance, the Ministry of Labour). Chambers of commerce and the social partners also influence VET policy making at national level. The questionnaire responses confirm the results of the interviews and other research, i.e. that the Ministry of Education has the highest level of influence in many countries, but that many other bodies cooperate with the ministry to develop policies that are most beneficial for all.

Figure 1. **National bodies ranked by stakeholders in relation to VET policy making process at higher levels (year: 2010, number of respondents: 226)**



Online questionnaire; index values in %: very important = 100, important = 66, partly important = 33, not important = 0. Original survey question: 'Please rate the following organisations according to their importance in the regulation of vocational oriented education and training at higher levels in your country (or the sector) your answers refer to.' Respondents were asked to express their own views in the questionnaire.

There is also diversity with respect to levels of authority in coordinating VET policies. In some countries, a regionalisation of tertiary education policies can be observed, with regional authorities increasingly playing an important role in tertiary education policy, including VET (e.g. the Czech Republic). In other countries, there is differentiation with respect to levels of education, implying that regional authorities are more involved in lower levels of education, including VET at EQF levels 1 to 5.

CHAPTER 3

VET at tertiary qualification levels

Despite the identified convergence of policy goals, there is still substantial variety in the organisation of VET, and also in the general understanding of what VET at EQF levels 6 to 8 is, and how and where it should be further developed. This section focuses on the organisation of VET at the highest levels in the selected countries, investigating the types of institutions and their autonomy, types of programmes/qualifications, the funding mechanisms, and partnerships with labour market actors and social partners. Finally there is a review of future trends.

3.1. Education providers

A diverse picture emerges with respect to the types of institutions offering VET programmes at the highest educational levels; this is linked to the definition of VET in the various countries. In most European countries the structure of tertiary education is (still) based on a binary distinction between academic higher education, offered by universities, and higher professional education, even though ‘there is large variation between countries with respect to the relationship between the two sectors’ (Kyvik, 2009, p. 10). In the case of the ‘old’ EU Member States – Denmark, Germany, Ireland, Greece, the Netherlands, Portugal and Finland – and in Norway the main task of the higher professional education institutions is to offer Bachelor level programmes (EQF level 6) in professional areas, such as nursing, teacher training, business administration, social work, engineering, and ICT. Professional higher education institutions in these countries are also allowed to offer Master level programmes (EQF level 7), either in all fields they cover, or in areas that are not covered by the universities. The institutions use a national name, such as *fachhochschulen*, *hogescholen* (or *HBO-instellingen*), *ammattikorkeakoulu* (or AMK institutions), or *høyskoler*, while internationally terms such as universities of applied sciences, university colleges, or polytechnics are preferred. In the recent European Commission communications on education and training (European Commission, 2010a; 2010b) these institutions are regarded as representing the VET component in tertiary education.

According to Kyvik these countries created binary systems from the 1960s onward because their governments wanted a clear, cost-effective and manageable alternative to the universities 'to meet the needs of the labour market and to strengthen regional economies' (Kyvik, 2009, p. 9-10). In countries with a mature higher professional education sector – Denmark, Finland, Ireland, the Netherlands, Norway, and Portugal – there are different policy, funding and legal approaches to the binary division. While in Norway and Ireland the boundaries are blurring, in Denmark and Finland the government intends to keep the rather strict separation between the two sectors. The Netherlands is in between the two positions. In all these countries, policy focus on VET at tertiary levels has grown over the last ten years and various measures have been taken or introduced to strengthen tertiary level VET, albeit mainly within the frameworks of the academic higher education sector.

Further, in the 'new' EU Member States of the Czech Republic, Poland and Romania, higher education systems were fundamentally reformed after 1990. Also in these countries binary systems were created by upgrading professional schools or by merging specialised institutions into multi-faculty colleges. Private colleges also emerged. In these countries the providers of tertiary programmes outside the universities offer programmes mainly at EQF levels 5 – 6. Exceptions to the dominant binary tertiary education structure are France, which has a segmented tertiary education system, and UK-England, which has a unified higher education system (Kyvik, 2009, p. 10-11).

The tertiary education structure in France is complex and segmented, with more than 3 500 public and private providers. One of the driving forces behind this complexity is the tradition in France of creating new institutions and new programmes to meet emerging education and training needs in society. One of the specific characteristics of the French system is that the most prestigious institutions are higher professional education institutions, i.e. the *Grandes Ecoles*, and not the universities. Also the way in which an important part of basic research is organised, i.e. through the *Centre National de la Recherche Scientifique* (CNRS), adds a specific dimension to the system.

UK-England is the only country included in this study that has an integrated tertiary education system, in the sense that practically all academic higher education institutions have gained university status. In practice the system can be regarded as differentiated, not on the basis of diversity of institutional types but of institutional profiles. There are a limited number of research-intensive universities in the English system, with most of the other universities institutions being 'regular' teaching and research oriented institutions, while a number of the universities are mainly teaching institutions. Various VET programmes and

courses are offered, both IVET and CVET, either by one of the universities, or in cooperation between a university and another type of institution, such as a further education college.

In the countries with a strong focus on universities in the tertiary education sector, and a more marginal position for higher professional education (the Czech Republic, Greece, Poland, and Romania), there is no, or at best only weak, policy focus on tertiary level VET. Here the VET policy focus is on secondary education VET (EQF levels 4-5), while the higher education policy focus is on university education.

In Norway, the higher professional education colleges (*høyskoler* – referred to in English as university colleges) are allowed also to offer PhD programmes. The introduction of such programmes is dependent on the approval of the Norwegian quality assessment agency NOKUT. Currently there are more than twenty tertiary education institutions in Norway – seven of which are universities – that offer one or more PhD programmes, suggesting that Norwegian tertiary education has a number of PhD programmes (EQF level 8) that have professional/VET orientation ⁽⁶⁾. In Ireland, the larger institutes of technology (IoTs) offer programmes leading to Master and PhD degrees. As in Norway, these PhD programmes in Ireland are more professionally and labour market oriented than the traditional university PhDs.

It can be generally argued that the binary divide between academic and professional tertiary education has been increasingly under pressure. In UK-England, the polytechnic sector was ‘upgraded’ in the early 1990s, leading to their integration into the university sector. Other European countries have also experienced processes of academic drift, implying that higher professional education institutions are becoming more academically oriented, and vocational drift in which universities have introduced vocational education activities (Pratt and Burgess, 1974; Neave, 1979; Dunkel and Le Mouillour, 2009), without these drifts leading to formal integration of the university sector with the higher professional education ⁽⁷⁾. Such drifts have taken place since the 1970s, leading

⁽⁶⁾ The number of PhD graduates with a professional/VET orientation is, however, very small. Of the total 1 148 doctoral degrees awarded in 2009 in Norway, 988 degrees were awarded by 4 universities, and of the remaining 160 only 10 were awarded by public professional higher education institutions (www.nifustep.no).

⁽⁷⁾ This is not just a European development. In the USA, for example, a Commission on General Education in the 21st Century addressed the ‘vocationalisation’ of US university education (with a main focus on the University of California System), and formulated a number of recommendations to counter this trend (for its report published in 2007. Available from Internet: <http://cshe.berkeley.edu/publications/publications.php?id=254>)

more recently to discussion of the rationale of the binary divide. In the Netherlands, for example, the Ministry of Education has set up a commission to analyse the effectiveness of the structure of Dutch tertiary education. This commission published its report in April 2010 (Rijksoverheid, 2010), and made a number of recommendations to the Ministry of Education about the way in which the structure of Dutch tertiary education could be improved. One of the issues at stake is the rigidity of the binary tertiary education system of universities and higher professional education institutions (in Dutch *instellingen voor Hoger Beroepsonderwijs/HBO-instellingen* or *Hogescholen*). The commission recommended stimulating the differentiation of the system through an adaptation of the overall structure, more flexible educational programmes, and the development of clear institutional profiles. However, in the report very little explicit attention is given to tertiary level VET.

Another interesting example is the case of German professional academies. In the 1990s and early 2000s the movement of the professional academies towards HE systems could be observed. First, the qualifications of some professional academies were recognised as tertiary education qualifications. Then, in 2004, the Standing Conference of the Ministers of Education and Cultural Affairs that includes the representatives of the federal states decided that certificates obtained in accredited Bachelor's courses at *Berufsakademie* should be treated equivalently to Bachelor's degrees obtained at HE institutions (Eurydice, 2009a). The *Berufsakademie* of Baden-Wuerttemberg recently gained university status, and now functions as the first dual, practice-oriented university in Germany (also called universities of cooperative education). This offers the possibility to grant academic degrees and initiate research projects with companies, keeping its traditional practice-focused dual system with on-the-job training in cooperating enterprises (Duale Hochschule Baden-Württemberg, 2010).

The developments in VET education in the transition zone from EQF levels 4 and 5 to levels 6 and 7 can be illustrated by the following two examples of new education and training developments. First, developments in the English further education (FE) sector have partly filled the gap left by the upgraded polytechnics. This implies that the sector is playing an important role in offering (shorter) vocational education courses at EQF levels 4 and 5, while a number of further education colleges have developed, with nearby universities, new VET provision structures to offer courses at EQF levels 6 and, in some cases, 7. The latter courses are called 'higher education courses' and are generally offered in so-called university centres. This applies especially to FE institutions that are

located in larger cities where there is no university, such as Blackpool (<http://www.blackburn.ac.uk/home.html>).

Second, in the Netherlands the Ministry of Education has allowed higher professional education institutions to introduce, in 2007, two-year associate degree (AD) programmes that are shorter than the traditional Bachelor programmes and are positioned at EQF level 5, even though the AD qualification is part of the national HE qualifications framework. The introduction of AD programmes is based on analyses of the growing reliance of the Dutch knowledge economy on a highly educated labour force. It is argued that in 2020, 50% of the Dutch 25 to 44 years old labour force needs to have a higher education degree (Onderwijsraad, 2005; Dutch Ministry of Education and Science, 2006). These analyses indicate that four conditions have to be fulfilled for the needed growth in higher degree holders. First, enough pupils in secondary education must qualify for higher education studies. Second, drop-out in higher education must be reduced. Third, the participation in higher education of workers as well as unemployed people must be increased in the framework of lifelong learning. Finally, the Dutch labour market needs to absorb more foreign workers with a higher education degree (De Graaf, 2009). The third condition in particular has received recent policy attention. The number of 30 to 40 year-old citizens participating in Dutch higher education (2.9% in 2008) is lower than the European Commission average of 5.6% (OECD, 2008a). In consequence, the Dutch government has indicated that it wants to increase the number of older students, especially in the higher professional education sector. The main target group consists of students with an upper secondary education (in Dutch, *middelbaar beroepsonderwijs* [MBO]) diploma. It is assumed that this group will be more interested in following a short cycle higher education programme than a full higher professional education Bachelor programme of four years. The data so far show that the introduction of the short cycle AD programme has attracted students to enrol in higher education that otherwise would not have enrolled (De Graaf, 2009). The total number of students enrolled in the AD programmes has grown from 450 in the first pilot year (2006-07) to 1 600 in 2007-08. The total number of AD programmes has grown to 63.

These two examples are representative of national efforts aimed at stimulating the number of VET students beyond traditional upper secondary education levels. These efforts focus on the transition area from secondary to tertiary education covering both EQF level 5 and level 6 programmes. In the Netherlands this has resulted in the new VET tertiary education programme type (associate degree) seen as an EQF level 5 programme, while in UK-England

some FE colleges are offering level 6 and 7 programmes, although the degree attached to these programmes is awarded by a (nearby) university.

Following these explicit national VET stimulation policies, there are interesting developments at EQF levels 6 to 8 outside the traditional academic tertiary education sector, which in some cases focused on a specific area of study (e.g. ICT). These include the higher professional schools (HPS) in the Czech Republic, colleges in Poland, and the emerging variety of non-HE providers in Ireland and UK-England.

Higher professional schools (HPS) in the Czech Republic offer higher professional education and were introduced in 1996. HPS (*vyšší odborné školy* [VOŠ]) pilots started in 1992 and have grown rapidly. In 2007 there were 148 schools with over 27 000 students, most charging fees (regulated by a state-set cap). Recently some of the HPS have acquired the status of higher education institution of a non-university type. Unlike universities, these institutions do not consist of faculties, and offer Bachelor level programmes. The current status of the remaining HPS is not fully clear; one interviewee stated that initially the change of HPS status was planned as an interim stage towards the development of a non-university HE sector but, for various reasons including political reasons and pressure from the existing higher education institutions, this process was not without complications. It should be noted that the Higher Education Act (1999) mentions the term non-university higher education institutions.

Polish colleges (*kolegia*) are not a formal part of the Polish national higher education system; they operate on the basis of school legislation and are a part of the school system. The sector emerged after the fall of the Soviet bloc, and the first colleges were set up in 1990. In 2007-08 there were 17 teacher training colleges, 46 foreign language teacher training colleges and 11 colleges of social work. These colleges are supervised by higher education institutions which offer Master degrees in corresponding fields (Eurydice, 2009b).

In UK-England, public providers include universities and further education colleges. Recent trends include the rise of short programmes and awards, the provision of flexible learning with regard to part time programmes and the desire from many students to combine work with learning. It is also possible now, as a result of the qualifications and credit framework (QCF), to have qualifications (formal and non-formal) earned outside formal tertiary education to be recognised in other contexts. However, private professional organisations rarely offer degrees alone: they mostly cooperate with a university, with the organisation providing the necessary training and the university providing the formal education and awarding the degree source.

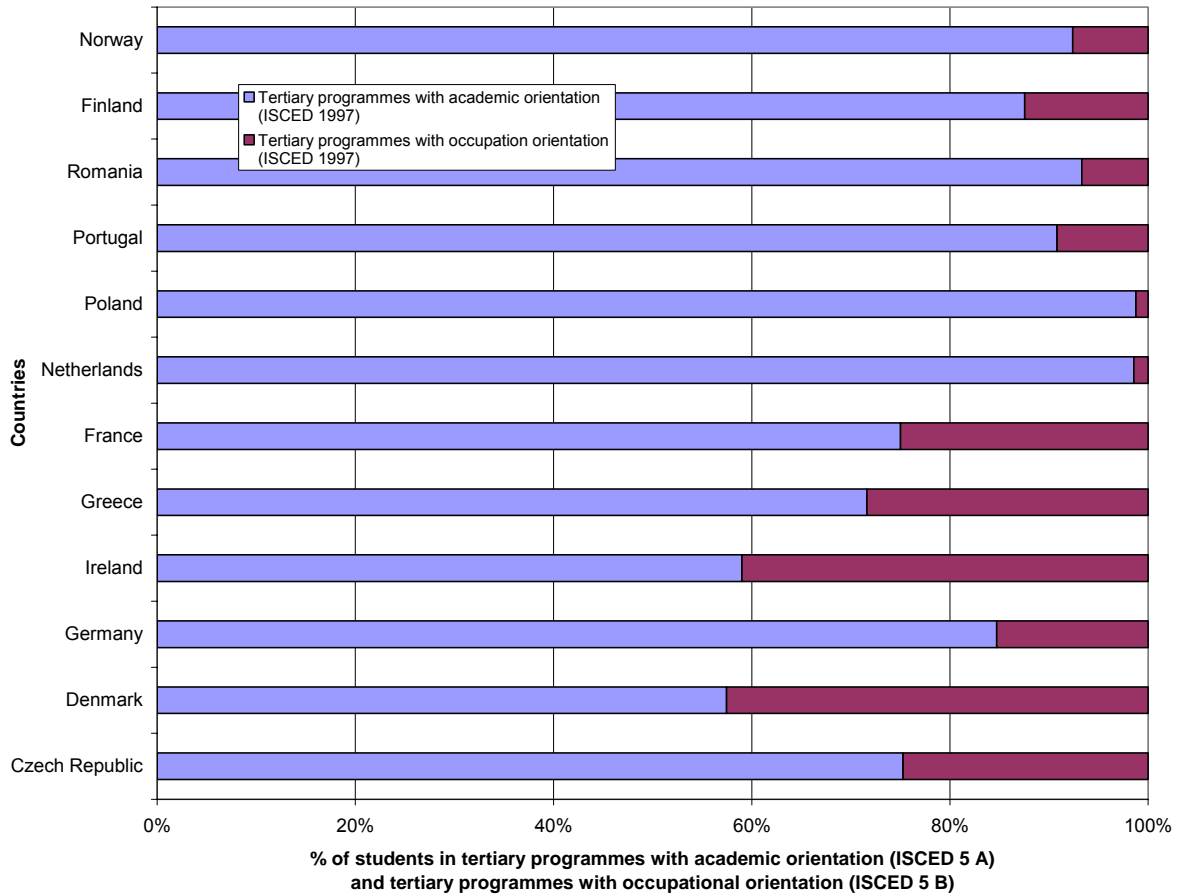
In Ireland, in addition to the binary public higher education sector (universities and the 13 institutes of technology), various private providers also offer programmes at higher levels. Among these are private colleges, such as Griffith College, National College of Ireland and Dublin Business School. All of these private institutions offer VET programmes at EQF levels 5 to 8. Other private providers of VET at EQF levels 6 to 8 include a number of sectoral bodies providing certain specialist programmes and training. In some networks, professional programmes in areas such as sales practice and purchasing practice are offered at EQF levels 6 to 8. The most frequent programmes are offered on a part time basis and are organised within employer organisation or associates. As these programmes are offered by private providers within various sectors, it is difficult to assign them to a specific category, but they have the same objective as the special purpose awards offered by the public institutions.

3.2. Types of programmes and qualifications

According to Eurostat, most tertiary education students in the EU are enrolled in first degree programmes, i.e. around 13 million Bachelor students of a 19 million student population ⁽⁸⁾. Given that in higher professional education institutions in Europe most students are enrolled in Bachelor level programmes, this implies that a large part of these 13 million students are enrolled in professionally oriented programmes. However, Eurostat data indicate that, of the total number of tertiary education students in Europe, around 2.3 million are enrolled in tertiary programmes with occupational orientation. This figure does not seem to do justice to the large number of students enrolled in professionally oriented degree programmes in universities and higher professional education institutions (Eurostat, 2009a).

⁽⁸⁾ Eurostat uses the ISCED system as a basis for its tertiary education statistics, and no translation is made to the EQF levels, but we assume that this figure denotes students enrolled in programmes at EQF level 6.

Figure 2. **Students in tertiary programmes (ISCED 1997, level 5, 2008)**



There is a range of strictly vocationally oriented education courses at EQF level 7 (Master level courses) in the 13 countries, while there are few examples, as in Norway and Ireland, of PhD programmes offered outside the universities (EQF level 8). Short-cycle tertiary level programmes (level 5) are also emerging, often with a very clear vocational focus. It can be assumed that VET as well as academic higher education institutions and organisations would want to offer increasingly higher degrees. While this is so in Norway, where the higher professional education sector is increasingly offering Master and PhD courses, HPS in the Czech Republic provides a contrast, as there is discussion on limiting the courses to short-cycle education that could be placed at EQF level 5.

Specific professional degrees have been introduced in several countries (e.g. Denmark, Germany, France), mainly at EQF level 6. There are initiatives for professional Master, for example in Denmark and the Netherlands, but this is still in an early stage of development. Finland offers an interesting example, since the

postgraduate degree programmes for part-time students offered by the polytechnics since the early 2000s are among the most innovative EQF level 7 initiatives in Europe. The access requirements for students include at least three years of work experience after their first degree, a job at the time of applying, approval and support from their employer, and the existence of a problem related to their job that will be the basis for the courses they will follow and their Master thesis work. These programmes combine characteristics of traditional Master degree programmes, lifelong learning and further education programmes, R&D oriented programmes, adult education and problem-based learning programmes.

Professional Bachelor degrees are well established in Germany, with over 150 different courses. These qualifications have a strong reference to practical experience and are of central significance to the trade and industry sectors in Germany. The prerequisites for access are successfully completed (dual) professional VET, and some years of practical professional experience. A recent press release by the Stifterverband für die Deutsche Wissenschaft concludes that there still is a need for special further education courses at Master level in Germany, and only about one in eight (about 530) of approximately 4 400 courses of study at this level are orientated to students with professional experience: 'the aim of an improved vocational and enterprise orientation of the training at universities is to offer Master courses not yet achieved' (Stifterverband für die Deutsche Wissenschaft, 2009).

In many cases where professional Bachelor programmes are offered, their formal status is equal to academic. However, as in Denmark, the Netherlands and Finland, this does not guarantee that someone with a Bachelor degree from a professional higher education institution can enrol directly and without further qualifications in a Master degree programme at a university in the same country. In the Netherlands the higher professional education Bachelor degree offered by the HBO-instellingen (or *hogescholen*), is formally equivalent to the university Bachelor degree, but more directly labour market focused: the two degrees are 'of the same level but have a different orientation'. To make this distinction clear, the titles of university Bachelor and Master degrees are extended with the words 'of arts' or 'of science'. HBO graduates obtain the title with the additions 'applied arts' or 'applied sciences'. This difference in orientation means that HBO Bachelor degrees seldom allow seamless progress to university Master programmes (ACPART, 2007, p. 6). Therefore, special provisions have been created to facilitate the transition from HBO Bachelor to university Master programmes, such as pre-Master tracks or 'transition profiles' during the Bachelor phase in the HBO.

In France there has been a tendency towards a vocationalisation of tertiary education in recent years according to Powell, Coutrot et al. (2009). This is primarily caused by the development of the vocational Bachelor (*licences professionnelles*) offered by the Instituts Universitaires de Technologie (IUT), which include high level of cooperation with the labour market through apprenticeship of a normal duration of 12 to 16 weeks (Ministry of Education of France, 2010).

‘(...) Vocationalisation addresses the problem of how tertiary education should respond to the demands of firms as well as how general and vocational education should interface (...)’ (Powell et al., 2009, p. 29).

A vocational Master (*maîtrise professionnelle*) also exists, which involves non-academic practitioners (institutions, research units) in teaching and managing these new programmes. Such non-academic bodies have an advantage through their relatively large networks of industry which help the students arrange internships and future job possibilities (Powell et al., 2009).

3.3. Parity of esteem: education and employment aspects

One important question addressed in this paper is parity of esteem between tertiary level VET and academic higher education. The main concerns are educational and employment and career aspects of the parity of esteem between VET and academic higher education. Do the skills, competences and knowledge acquired through tertiary level VET provide equal progress in learning and career as tertiary level academic higher education? The national policy understanding of tertiary level VET, and the measures taken in the countries included in this study to stimulate parity of esteem, show great diversity between the countries.

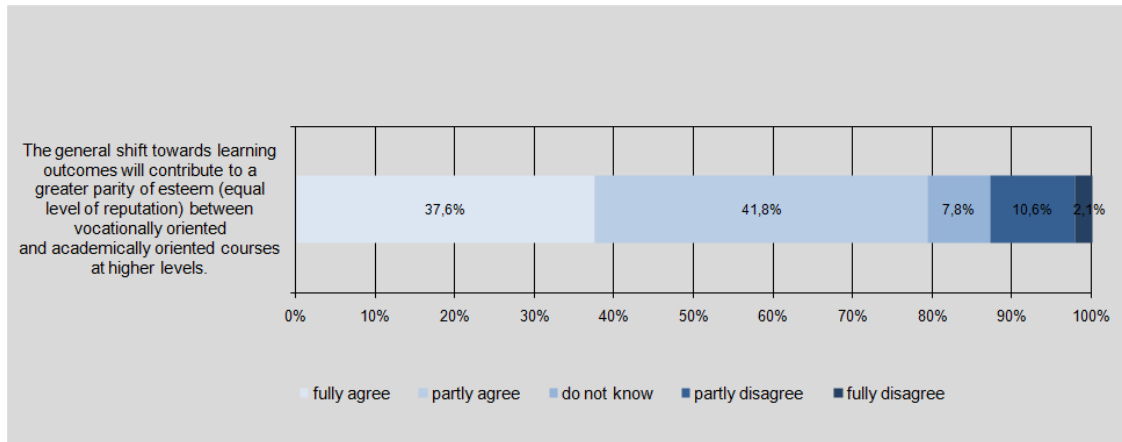
Of the countries surveyed, Germany is unique in having a dual VET-academic tertiary education system. Current discussions exemplify the development of a national qualifications framework and its contribution to parity of esteem of both parts of education and training. In the first German NQF draft of 2007-08 it was proposed that the qualifications acquired outside the academic higher education system would be positioned at levels equivalent to EQF levels 4 and 5. Following debates between the main stakeholders, the 2010 draft proposed more equal positioning of VET and academic higher education qualifications, with, for example, the Meister qualification being equal to Bachelor level, i.e. EQF level 6. This would imply that the Meister qualification would provide the same employment opportunities as the Bachelor degree. However,

German HE institutions were sceptical about the access consequences of this equality. While a university Bachelor degree would give access to a specific set of university Master programmes, the Meister qualification should not provide this access automatically. It would be up to the universities involved to determine the (additional) access requirements of Meister qualification holders. Therefore the 2010 NQF draft consisted of two pillars at levels 6, 7 and presumably 8 (see discussion by Klump, 2010). These pillars represent the dual VET and academic higher education system. If accepted, this NQF would represent a parity of esteem concerning the employment aspects of VET and academic tertiary level qualifications, but a lack of parity in learning opportunities. This process has not yet come to its end. National qualifications frameworks promote stronger integration between sub-systems, in particular between vocational and academic education and training. Different solutions emerge:

- coherent set of level descriptors covering all levels and types of qualifications; vocational qualifications can be placed at all levels and where coherence is an explicit vision;
- a clear distinction between levels 1-5 and levels 6-8 (the latter restricted to the three cycles of Bologna). This approach implies that higher level qualifications are defined according to institutions and not to learning outcomes;
- parallel qualifications strands are introduced at levels 6-8, one covering academic qualifications and the other opening for vocationally oriented qualifications awarded outside the traditional HE institutions (Cedefop 2010c).

The role of learning outcomes in prompting parity of esteem between academically oriented and vocationally oriented courses at higher levels has been analysed within the questionnaire. Figure 3 shows the general expectations of how the 'value' of vocationally-oriented study programmes are believed to change compared to the more academic higher level courses by the shift to a learning outcomes approach and competence based qualifications. The majority (55%) of respondents expressed some level of scepticism (partly agree, partly disagree and fully disagree) about the possibility of the vocationally-oriented courses being more positively evaluated in relation to more academic courses as a result of the adoption of such an approach. In their view, the shift to learning outcomes may not or may not totally bring this impact. However,, a high number of respondents (38%) thought that vocationally and academically oriented courses will have this 'approximation' in terms of reputation.

Figure 3. **Learning outcomes and parity of esteem (year: 2010, number of respondents: 226)**



Online questionnaire; Original survey question: 'Please indicate the extent to which you agree with the following statements in your country.' Respondents were asked to express their own views in the questionnaire.

Political concerns about the global competitiveness of European economies have inspired a transformation in education policy debates, leading to a growing focus on the importance of human resources, in the sense of the skills, competences and knowledge that workers in the European knowledge economy need from a global competitiveness perspective. Aspects such as student and worker mobility, lifelong learning, credit transfer, and validation of learning outcomes have also become more important over the last ten years in national education policy. For example, in Denmark, France, Ireland, Norway, the Netherlands, Portugal and UK-England, validation is increasingly being used as an integrated part of national qualifications systems (Bjørnavold and Le Mouillour, 2009).

In France, non-formal and informal learning experience is validated by a panel under the process of *validation des acquis de l'expérience* (VAE). This process describes learning outcomes as the foundation for awarding qualifications and also allows more citizens to be awarded a certificate. In UK-England there is also an option to have workplace learning certified. This is done through the qualifications and credit framework (QCF), a relatively new framework that has an entry level and then levels one to eight. A similar trend can be identified in the Netherlands, with increasing focus on recognising non-formal and informal learning. Higher education institutions can now exempt

students with certain (practical work experience-based) qualifications from part of a course.

Countries such as Norway (Skule, 2003) and Denmark have had options to recognise non-formal and informal learning as potential access criteria to tertiary level education programmes for a period, but these have rarely been used to their full potential. In Norway, more definite action has now been taken; the Ministry of Education has established a working reference group (advisory ad hoc body with a mandate to give a report) on validation of non-formal and informal learning to develop a more comprehensive model for this element. However, the work in the group is still in the early phases, although a more definitive report is expected at the end of 2010.

Overall the parity of esteem between VET and academic tertiary education has not received as much policy attention as that of vocational training and general education in secondary education (Young and Raffe, 1998). This is obviously related to the fact that only in a few countries is tertiary level VET regarded as a separate policy issue. Policy developments in this area have led to greater parity of esteem in Germany in employment opportunities, and in educational opportunities in, Ireland France and UK-England. However, also in the latter countries, it is in practice up to the higher education institutions to determine whether they will recognise qualifications and credits gained outside higher education. In a number of countries, e.g. Denmark, the Netherlands and Finland, there is even a lack of educational parity of esteem within the academic higher education system. In these countries the universities do not automatically recognise students with a Bachelor degree from a higher professional education institution as sufficiently qualified to enter a university Master level programme. The universities can determine for themselves the access criteria for these non-university Bachelor degree holders, leading in practice to a rather arbitrary set of additional course and exam activities these students have to undertake to progress in their learning path. This also goes for the access to PhD programmes and positions, where in most European countries it is up to the universities to determine the PhD position access requirements.

3.4. Funding

There is also significant diversity in the funding models used, from primarily state funding in the form of block grants to some levels of private funding. Below is a short overview per country of the main funding characteristics of VET and academic tertiary education.

In the new Central and Eastern European Member States, the relatively low level of funding of tertiary education is of general concern. In the Czech Republic public expenditure on all education levels (as a percentage of GDP) has decreased. Funding of VET is decentralised: the state determines the basic principles, submits background information to the state budget, allocates funding to the institutions directly under state/church control, and allocates earmarked funds (for example for special development programmes, industrial relations, and teaching tools). Regional bodies provide operational and capital costs. Private VET institutions also receive funding from the state (ReferNet Czech Republic, 2010).

In Poland, total expenditure on education measured as proportion of GDP is below the figures in other European Commission countries (OECD, 2010b, p. 125). There are no specific funding arrangements for tertiary level VET. In the colleges, tuition fees can be charged for part-time programmes, with the amount decided by the director of the college. All public higher education institutions receive state subsidies for tasks related to teaching full-time and doctoral students, training research staff, maintenance of the institutions, and teaching and medical rehabilitation of disabled students. These subsidies are part of the state budget, allocated by the ministry. Institutions may also receive other funds from the state budget, but also from local government units and agencies. The minister is expected to specify the requirements and procedures for private higher education institutions to apply for subsidies. While public higher education institutions do not charge tuition fees for full time programmes, they can charge for specific courses provided as part of full-time programmes, courses in foreign language, courses not included in the formal study programme, and part-time degree courses (Eurydice, 2009b).

In Romania, public funding of all education is set at a minimum 6% of GDP, growing from 3.4% in 2000 to 6% in 2008 (Eurydice, 2009d). The overall GDP percentage for higher education is 0.8%. While public education is funded by the state, institutions can raise and use their own funds within the legal framework. As a result, some students in public and all students in private higher education institutions pay tuition fees.

Greece does not have specific public funding arrangements for tertiary level VET. The sources of funding for Greek universities are the regular state budget and the programme of public investment, which has two levels, one national, financed with national funds, and the community one, which includes European funds (Operational programme for education and initial vocational training – O.P. 'EDUCATION', 2000-06). In Portugal there are also no specific public funding arrangements for tertiary level VET. The state is the main funding agent, and

public spending on education as part of GDP is at an average level in the EU, but lags behind the leading countries such as Denmark or Finland. The funds for higher education can be divided into three large groups: public, private and European structural funds. Performance-based funding was introduced in 2006 for allocating public funds. Students pay fees, seen as a contribution to increasing the quality of the system. Fee levels are set by each institution, depending on type and quality of the course. The fee is paid irrespective of socioeconomic background (Eurydice, 2009e).

In the Nordic countries and the Netherlands there are no specific public funding arrangements for tertiary level VET, although the public funding level for tertiary education in these countries is among the highest in the world. In Finland, the Ministry of Education is responsible for funding all education and training activities, except for labour market training where the Ministry of Labour is responsible. Vocational education is also funded through public funds. There is a decentralisation in funding issues: the institutions have relative autonomy in deciding the use of their funds. Students do not pay tuition fees and, at all levels, they are eligible for financial aid for studies over two months: study grants, housing supplement and state guaranteed student loans (Eurydice, 2007, p. 37). All the municipalities in Finland – in total 342 in 2010 – are obliged by law to provide a per capita payment in the municipality in financing both secondary vocational education and polytechnic education. This is obligatory, independent of the population structure, e.g. the amount of students living in the municipality. The municipalities fund 58.11% and the central government 41.89% of the total costs at both education levels. Enterprises and employers also participate in funding of (mainly professional) educational programmes at EQF levels 6 to 8. In Norway all public and most private institutions receive state subsidies, allocated directly by the Ministry of Education and Research. Currently, as a result of increased institutional autonomy, higher education institutions receive a block grant and can allocate resources themselves. Since 2003 a general basic grant consists of 60% of the total block grant. The other two components are performance-based indicators for research and teaching. Institutions are allowed to earn extra funds from fees for distance and continuing education (CE) courses, contract research, research council grants, international grants etc (Eurydice, 2009c). Students pay no fees, but there is a small registration fee that goes to student welfare.

In Denmark all tertiary education is funded publicly, except for adult further education programmes where the participants cover some of the costs. Tailor-made courses are possible if the companies pay; this occurs in adult training, although private companies also offer the training. A variety of courses at EQF

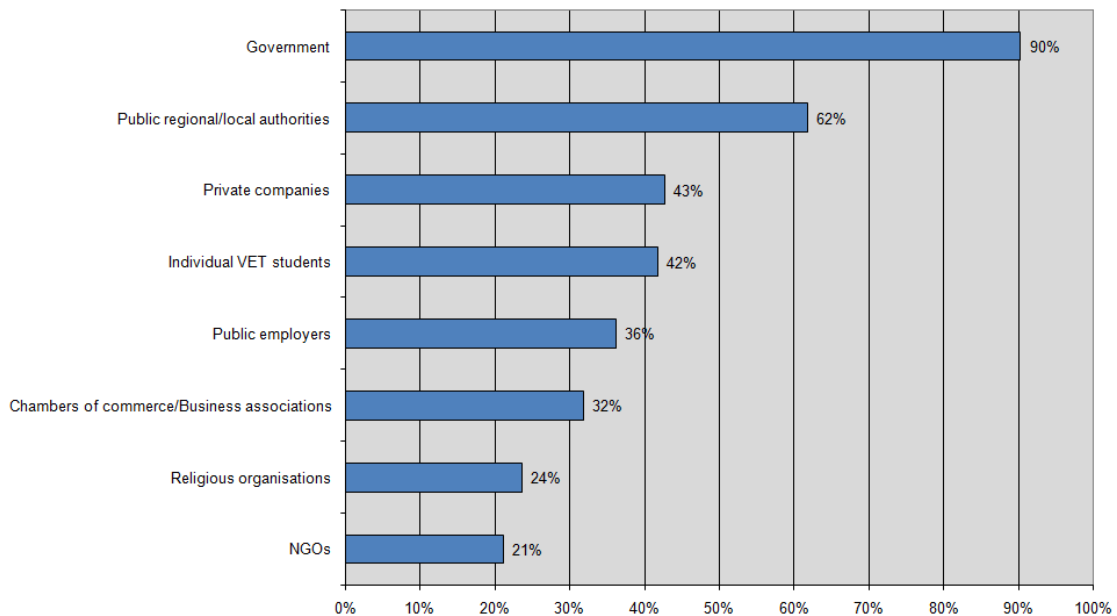
levels 3, 4, 5 are almost free, with a small fee which the company covers. Sometimes larger companies wish to have a specific course, or they want all their employees to participate; in these cases all the costs are covered by the companies. The higher professional education colleges receive taximeter grants per student, leaving them with the responsibility of detailed management, budgeting and daily administration; thereby promoting a more demand-led VET system in which the colleges compete on provision and quality. Finally, funding to higher education in the Netherlands is provided via block grants. The size of the grant is determined by the Ministry of Education and Science, corrected in line with wage and price rises, or in case of special policy decisions (Eurydice, 2008). The HBO-institutions are funded mainly on the basis of student numbers: the faster a student graduates, the larger the amount of funding the institution gets for that student. HBO-institutions also receive some income from contract activities, but about 95% of their budget comes from central government in a block grant form (ibid). The tuition fees all students have to pay increase each year and the fees cover a growing part of the institutional budgets (ibid). While there has been a decrease in public funds per tertiary level student, in 2006 only Sweden and the UK had a higher expenditure per student (OECD, 2008a).

The segmented French tertiary education system has the most complex structure in Europe. In the higher education sector, students pay fees but these are not very high and financial help is available to some students in the form of a grant (either means or academic criteria), or an interest-free loan (Cedefop, 2008b, p. 34). In principle, initial VET is free of charge. The French tertiary apprenticeship system is funded (via taxes) by private sector employers, state contributions and regions (Cedefop, 2008b, p. 31).

In Germany, VET is funded on a mixed, public and private, basis: Federal Ministry of Education and Research (BMBF), the Federal Ministry of Economics (BMW), the Federal Agency for Employment (BA), the *Land* ministries of employment, economics, education or cultural affairs, the European Union, local authorities, companies, unions, chambers of commerce, associations, private institutions and private contributions from students (Cedefop, 2007, p. 59). Public higher education institutions receive funding from the *Länder* and federal government. *Länder* provide resources to cover personnel and material costs, and also investments in land, buildings and major equipment. Over a certain amount the federal government will cover 50% of the costs. HE institution members can also get third stream funding to research (Eurydice, 2009a). *Berufsakademien* funding is divided between the *Land* and the training establishment. The theoretical study location is funded by *Land*, while the enterprise involved bears the costs of in-company training (ibid).

Irish tertiary education is strongly dependent on public funding. The state contribution to universities covers about 85% of their budgets, while for institutes of technology this figure is about 90%. The funding for teaching is on a par with international standards, but there are issues with research funding (OECD, 2006). Full-time students are state funded, though the student pays a EUR 1 500 registration fee. The state generally does not fund programmes that are taken on a part-time basis, i.e. by persons in the workforce. One initiative in 2009 was the Labour force activation scheme, aimed at unemployed persons seeking to improve their skills.

Figure 4. **Sources of funding in relation to courses at higher levels (year: 2010, number of respondents: 226)**



Online questionnaire; index values in %: very important = 100, important = 66, partly important = 33, not important = 0; Original survey question: 'How important are the following bodies for providing funding to vocational oriented education and training in the country or sector to which your answers refer.' Respondents were asked to express their own views in the questionnaire.

In UK-England, an agency of the Department for Business, Innovation and Skills, (the Skills Funding Agency), is responsible for funding and regulating adult further education and skills training. The agency is responsible for all government supported VET (except for HE), all post-compulsory public education, adult and community learning. The basic principle for funding is that resources follow the

learner. Children up to the age of 16 are entitled to free education, any following education is usually free up to the age of 19 (Cedefop, 2005). HE is funded via the Higher Education Funding Council for England (HEFCE).

The questionnaire respondents were asked to indicate the sources of funding for vocationally oriented courses at higher levels in their country. Figure 5 shows the percentage of respondents who believed each source of funding was important. The government was identified as a main source of funding in most countries. However, in countries in which funding has been decentralised, regional and local authority were also identified as important. Companies and individuals were identified as important funders by just under half of all respondents. Public employers and institutions such as chambers of commerce were identified by about one-third as being important source of funds. There appears to be an encouragement towards third stream funding, as in the case of Romania. Similar tendencies can also be identified elsewhere. In Denmark, the college sector is very interested in identifying this type of funding, since it is considered as free from tight government control. It was also emphasised that the polytechnics have an increasing share of funding from the business sector, and that the overall share of external funding is increasing.

In summary, approaches to funding vary greatly, but most funding in almost all countries is still sourced from public sources in regard of VET courses leading to qualifications at EQF levels 6 to 8.

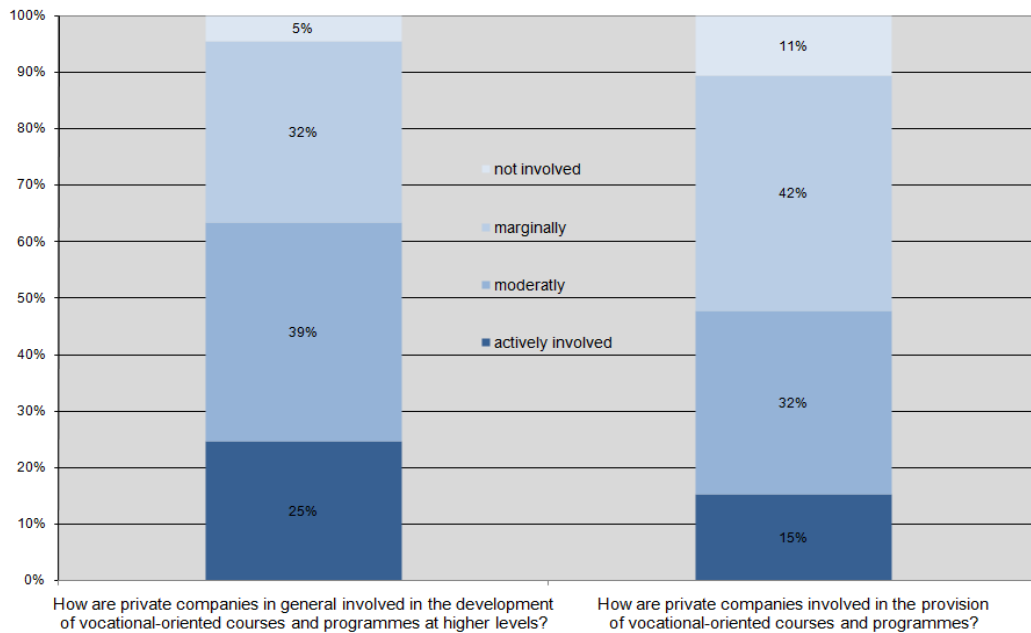
3.5. Partnerships

The goal that various stakeholders (labour market actors, social partners, etc) should be involved in VET at tertiary has widespread support. Work placements are, for example, regarded as an important model for promoting labour market cooperation in Denmark, Germany, Ireland, and the Netherlands (HBO-sector).

There are various other methods of stakeholder inclusion in education and training, for example in institutional governance, through consultancy and guest lectures and in curriculum development. Professional organisations are identified as being of particular importance.

Evidence from the questionnaire indicates that there is still some progress to be made for the inclusion of labour market organisations. Figure 6 shows that respondents believed that companies are often marginally or moderately involved in development and provision of VET courses and programmes at higher qualifications levels, but most are not actively involved.

Figure 5. **Indication of involvement of private companies (percentage of respondents, year: 2010, number of respondents: 226)**



Online questionnaire; Original survey questions: 'How are private companies in general involved in the development of vocational-oriented courses and programmes at higher levels in the country (or sector) your answers refer to?' and 'How are private companies involved in the provision of vocational-oriented courses and programmes at higher levels in the country (or sector) your answers refer to?'. Respondents were asked to express their own views in the questionnaire.

In a number of countries the regional role of VET is important and drives labour market links. This is, for example, the case in France, Germany, Norway, and Poland. In Finland, each polytechnic outside the urban areas has a specific local profile, and so is connected to the local labour market.

Social partners play a key role in Germany, though their attitudes diverge. For instance, the German trade unions fear that modularisation of vocational skills and 'de-professionalisation' will accompany NQF alignment to the EQF. This would imply an academisation of the VET and professional tertiary education programmes, leading to a weakening of the German dual VET-academic higher education system.

In Norway attention is given to labour market connections but this very uneven. A recent white paper (Ministry of Education and Research of Norway, 2009) suggests the need for a more systematic structure and stronger links between higher education and the labour market. In Romania there appears to be cooperation; for instance, the local development councils established around

2004 include a variety of stakeholders and may contribute to stronger links between the worlds of education and of work. However, not all of these councils are fully functional and their effectiveness seems to depend on their particular members.

While there is broad agreement that links to social partners and the labour market are important, and in most countries measures are being taken to include more stakeholders, the effectiveness of these practices does not appear to be even throughout the European countries. Analysis of specific examples is provided in the next chapter on the case studies.

3.6. Synthesis

In most countries in this study, the Ministry of Education has overall policy responsibility for VET at the highest educational levels. However, often other ministries also have a degree of policy responsibility for VET, while in some cases responsibility is more evenly distributed across a variety of ministries.

Throughout Europe, tertiary level VET is only weakly recognised as a separate policy area. Only Germany in the study has a deliberate dual VET-academic higher education policy (and system). In Ireland, France and UK-England national policies are aimed at stimulating an effective relationship (and parity of esteem) between VET and academic higher education, but overall the responsibilities for awarding qualifications and degrees at EQF levels 6 to 8 are still allocated to the formal higher education institutions. Therefore, these countries do not have a dual tertiary VET-academic education policy or system. In other countries there is either an active policy towards the stimulation and further development of VET throughout the whole higher education sector, e.g. Norway, or foremost in the higher professional education sector and not in the universities, e.g. Denmark, the Netherlands and Finland. In Greece, Poland and Portugal, there is a strong focus in national tertiary level policy on academic higher education, with VET being seen as part of upper secondary education. In the Czech Republic and Romania, recent developments have weakened the existing VET component in the tertiary education system.

The policy responsibility is usually concentrated at national level, but there is a certain amount of regional authority responsibility and involvement in those countries in which there is a more clearly differentiated profile for VET institutions.

In countries with an active tertiary VET policy approach there is increasing convergence between VET and academic HE policy goals, such as increased

efficiency, labour market relevance and transparency. However, there is a variety of national policy measures and instruments, as well as different institutional and sector realities, traditions and expectations. These different pathways are also linked to different national traditions and conditions. In some countries it is seen to be politically necessary to have a clear distinction between academic and professional higher education (which includes VET), for instance in Denmark and Finland. In Denmark this is related to the fact that the university sector falls under a different ministry from the higher professional education sector; in Finland this is driven by the relative young age of the polytechnic sector and resistance of the universities to further 'upgrading' of the polytechnics. In other countries, especially Ireland and Norway, there is more convergence. In Norway, there are discussions about moving away from this tendency and the introduction of new vocational Bachelor degrees is being stimulated (Ministry of Education and Research of Norway, 2009). Countries such as the Czech Republic and the Netherlands are somewhere between these two positions.

Developments do not point towards one single destination in finding ways to organise and coordinate VET at the highest educational levels. Rather, the picture that emerges includes very different methods to implement the various national policy objectives, and even commonly agreed European objectives. Given the European focus on VET including tertiary level VET, this situation can be regarded as an important policy challenge amidst the increasing diversity of tertiary level VET developments.

There appears to be agreement on the need to involve various stakeholders and labour market representatives more (directly) in the policy making processes. Nevertheless, there is variation between the countries in the level and nature of involvement of the various stakeholders. Given that one of the prime objectives of VET is to cater for the skills and competences needs of the labour market, there is a common understanding among the 13 countries that this issue needs to be addressed nationally as well as at a European level.

The influence of European level processes seems to have varied impact. Implementation of the EQF in the form of NQFs paints a diverse picture throughout Europe. Some countries have a long tradition with an NQF, e.g. Ireland, France and UK-England, while others, according to our respondents, had barely started development, e.g. Greece and Poland. Further, the national interpretation of, and policy focus on, tertiary level VET varies greatly. In some countries, e.g. Finland, all tertiary education is regarded as being vocationally oriented, while in others, e.g. Germany, there is a clear distinction between vocational and academic higher education. In some countries, tertiary level VET features prominently on the policy agenda, e.g., Germany, Ireland, Norway and

UK-England, while in others there is no policy understanding at all of tertiary level VET, e.g. Greece, Poland and Portugal. From this perspective, intensifying European level coordination efforts towards tertiary education VET can be strongly recommended.

Particularly in Central and Eastern European countries, new, mainly private, providers have entered the VET market. Most of their VET courses do not lead to qualifications at the highest levels (EQF 6 to 8), although a growing number of private institutions are offering Bachelor level courses. The number of VET Master level courses offered by these institutions is also growing though they are not involved in PhD level (EQF level 8) programmes. However, at the same time the Czech Republic and Romania have taken or are discussing measures that could lead to the elimination of explicitly tertiary level VET programmes.

In Romania, only universities can provide programmes at EQF levels 6 to 8, categorised into the three cycles. In UK-England, there is a range of institutions offering both academic and vocational higher education programmes and courses, from public universities and further education colleges to private professional institutions.

The types of programmes can largely be framed along the lines of Bachelor-Master level division. There are countries in which a separate professional Bachelor qualification exists, e.g. Denmark and France, with a focus and structure quite different from academic Bachelor programmes. However, there are systems in which professional and academic degrees and qualifications at this level (EQF level 6) are seen as equal.

The pedagogical arrangements also differ from country to country. The classical methods (classroom based teaching) still prevail in many countries. In some, methods such as work placements are highly relevant, for instance, in Denmark, Germany, Ireland, the Netherlands Finland and UK-England. The possibility for part time studies is also increasing (e.g. the Czech Republic, Ireland, Finland, UK-England) as are distance learning opportunities (e.g., Ireland, Portugal, the Netherlands, Norway, UK-England).

In a number of areas, collaboration between employers and VET institutions has been growing, for instance in the development and adaptation of training curricula. With a labour market that requires an increasing number of people with high qualifications but, at the same time, with specific vocational preparation, strengthening VET at higher levels seems to be (part of) the answer. However, the status of VET in many countries is quite low, and there are prejudices about it. If the VET sector could increase the attractiveness of its education and training activities, and prove the prejudices wrong, the acquisition of skills, competence

and knowledge within a VET programme would be expected to increase in popularity. The introduction of the NQF can have significant impact on this.

With few exceptions, VET at the highest levels (EQF 6 to 8) is provided within or in cooperation with the formal academic higher education system. Among the few exceptions identified is the Irish system of various private providers. However, this system has a relatively well established and well functioning qualifications framework, so it can be questioned whether an established qualifications framework is one of the requirements for qualifications and learning outside formal higher education institutions. Ireland also shows the influence of the larger socio-economic context in that the number of EQF levels 6 to 8 courses offered by employers has recently gone down as a consequence of the financial crisis. At this point, the process of introducing learning outcomes and qualifications frameworks continues in most of the countries examined. The analysis on the shift to learning outcomes and competence-based qualifications at this point is mostly based on estimates of the future, as there is little empirical evidence on the actual implementation and impact on VET developments at the highest levels.

The parity of esteem between tertiary VET and academic higher education can be approached from two different perspectives. First, concerning the countries in which tertiary level VET is a clear separate policy area, there are either separate tertiary level VET qualifications (e.g. Germany), or the national qualifications framework(s) that strongly stimulate the recognition of VET qualifications awarded outside the academic higher education system within academic higher education institutions (e.g. Ireland, France and UK-England). In Germany, the universities resist attempts to give tertiary VET qualifications equal educational rights with university degrees. While the outcomes of these debates are not yet clear, there is a chance that the German NQF will consist at levels 6 and 7 of two pillars that have equal status in their own, but lack the possibilities for the holders of these qualifications to progress their learning effectively in either side of the dual system. This would imply a continuous disparity of esteem between tertiary VET and academic HE. Also in Ireland, France and UK-England it is up to the academic higher education institutions to determine if, and how, VET credits and qualifications will be accepted. This also suggests in these countries a continuous lack of parity of esteem between VET and academic HE. In countries in which VET is seen as part of academic HE, the parity of esteem issue especially concerns the relationship between the universities and the institutions for professional higher education. In these countries there is evidence of a growing parity of esteem between the two sectors. This is especially visible in Norway, and to some extent in the Netherlands. In Denmark and Finland, as

well as in the Czech Republic, Greece and Portugal, the two sectors are, for various reasons, kept separate. This negatively impacts on parity of esteem. In Poland and Romania the focus is on tertiary education policy. From this perspective a stronger European level coordination effort can again be recommended.

CHAPTER 4

Tertiary level VET in selected sectors context differences

Understanding the nature of vocationally oriented education and training at tertiary levels in Europe is historically and institutionally grounded and undergoing changes. This chapter concentrates on illustrating and explaining on a sectoral/discipline basis how VET at higher qualification levels in national contexts is operating; it focuses on stakeholders and policies, education and training providers, and cooperation with labour market actors. Six explanatory case studies were elaborated each focusing on two countries and a sector/discipline: agriculture, nursing, ICT, teacher training, distance learning in the finance sector, and technology and innovation management. Conclusions are drawn in sub-chapters before a general synthesis.

4.1. Agriculture in Denmark and France

4.1.1. Economic and social context

Agriculture is a core sector in both countries, supporting an important part of the respective national economy and labour market. For a small country like Denmark, export and trade with other countries are essential for society, and agriculture is one of the biggest export sectors. In 2008, 13% of the total export from Denmark was from agriculture (Eurostat, 2010a). In 2009 7.4% of the total labour force was employed in the agricultural sector and 56 000 persons worked in this sector (Eurostat, 2009b). Due to globalisation and rapid development of new technology and innovation, the agricultural sector has substantially changed. There is high investment in agriculture in Denmark – one of the highest rates in the world – both at a national level and by individual farmers. The investments are mainly focused on new technology and in attempting to solve issues such as climate change, animal welfare, food safety and food availability. Knowledge is one of the core indicators for success in Danish agriculture: to create new technologies, to identify vital aspects, and to lead agriculture into the future. Education and research is vital to preserve and continuously develop this knowledge (Landbrugsraadet, 2007). This creates high expectations for education and training in the sector. Denmark has recognised this need and new initiatives are being developed within agricultural education and training, for

instance a new Master degree in agriculture offered by a university, and the professional Bachelor in agriculture.

France has for centuries been one of the most dominant agricultural countries. The sector is still of vital importance; in 2009 4.89% of the labour force was employed in the sector, totalling 858 000 persons working in this sector (Eurostat, 2009b). France is the leading agricultural producer in the EU, with a share of 20.3% of the total EU products, and is also the largest recipient of EU direct aid and subsidies for agriculture (Nistor, 2010). Agriculture is also one of the biggest export sectors, with a share of 11% of the total export trade (Association Nationale des Industries Alimentaires – ANIA, 2010). French agriculture is highly developed, partly due, to the high level of support from the government. The focus of the government has shifted from production to supporting manufacture, processing and selling, trying to boost domestic agriculture developments. In addition, farmers are encouraged to seek new paths within agriculture called ‘reasonable development’ (aligned with environmental protection and sustainable development). Another trend within agriculture is continuous development to increase the safety and quality of food and its production. Training is an area of government focus. Farmers can seek help from local institutes and training organisations. They can choose the direction they wish to explore, for example in areas such as technologies or new types of agricultural production. It is recognised at national level that training and qualifications can enhance the quality of farmers and their output (Molinier, 2009).

With these new developments and trends, expectations and requirements have also changed for the farmer and other stakeholders of the sector. New and higher qualifications are needed. The chosen subsector is agriculture economics. Operating in this subsector requires a combination of skills and competences that create demands that education and training providers are attempting to meet.

4.1.2. Selected governance patterns

Stakeholders and policies in France

The Ministry of Education has overall responsibility for all education in France, from nursery schools to HE, including teacher training. The Ministry oversees a variety of aspects within education, such as creating national guidelines for teaching, drawing up the school curriculum and administering staff recruitment, training and management. The Ministry of Agriculture and Fisheries also has an important role within agricultural education, as does the Ministry of Labour, Employment and Vocational Training with regard to vocational training. The

section for HE within the Ministry of Education oversees and advises on specific aspects. For policy implementation, the Ministry of Education has external administrative departments that are called *académies* with jurisdiction over particular geographical areas of the country (Qualifications and Curriculum Agency, 2005). The Ministry of Agriculture decided in April 2004 to create seven centres for HE in agricultural science and research. The objectives of these centres are to concentrate the strengths of the different institutions and increase effectiveness and visibility (Montpellier SupAgro, 2010a, p. 413).

A range of policies drive the agriculture sector in France, both with regard to the sector as whole and within agricultural education and training. In 1999, a law of agricultural development direction was formulated, increasing the requirements on environment and enhancing the standards of allowance. The law states that a farmer who fulfils environment protection standards can receive an annual allowance of 50 000 French francs [former currency in France] (Ibid). Another important policy in which France is very much engaged in is the common agricultural policy of the EU. Reform of CAP is to be set out in 2020. France has outlined four objectives for the future CAP, which are food security in the EU, contribution to the world food balance, preservation of the balance of rural areas, and contribution to the fight against climate change (Poux, 2009). A new policy has also been accepted by the Ministry of Agriculture and Fisheries, known as the law of modernisation of agriculture and fisheries (*La loi de modernisation de l'agriculture et de la pêche* [LMAP]). The law was approved on the 13 July, 2010. The objective of the law is to improve general conditions for the farmers and fishermen of France; one of its strategies is to develop fixed prices (Ministry of Agriculture and Fisheries of France, 2010a).

Stakeholders and policies in Denmark

The parties in the Danish government agreed on 9 April 2010 to support the growth and competitive performance of the agricultural and food sector. The agreement will support export activities and employment in the sector, and will provide companies with better terms to compete at international level. Among other initiatives, the agreement foresees improved possibilities for the development of new business areas within the agriculture sector (Ministry of Food, Agriculture and Fisheries of Denmark, 2010). The future revision of agricultural EU policies in 2013 will also have a substantial impact on the agriculture sector. At the moment it is difficult to predict possible changes, but various stakeholders are awaiting this revision with anticipation.

Different ministries are involved in education in the Danish agriculture sector. The Ministry of Education oversees VET policy development up to EQF level 5.

All HE initiatives and policies above EQF level 5 are the responsibility of the Ministry of Science, Technology and Innovation. In 2007 the Danish government developed a strategy called the FORSK2015 initiative. This aimed to identify the core area in which Denmark should invest in research and education. Four themes were identified by an expert group. Within these themes, a further six to seven areas were chosen; some of which were environment, energy, and climate in which the agriculture sector is an important field (Ministry of Science, Technology and Innovation of Denmark, 2007). The vocational committee (Det faglige uddannelsesudvalg for jordbrugsuddannelser) functions as a quality assurance unit within vocational education and training. This committee oversees changes, modifications and evaluates new programmes within agricultural VET. The committee also acts as a social partner, and is, among others, funded by one of the biggest trade unions of Denmark.

VET has been subjected to criticism over the level of available qualifications, and it is not possible for students to progress very easily to higher qualifications. Further, the reputation of VET in Denmark often suffers from prejudice and negative assumptions. The Minister of Education introduced a new bill during spring 2010 which aims to open new paths within VET and give talented students more and better opportunities. This bill particularly suggests the introduction of a new exam at secondary level (EUX) which should open new paths to students in VET. It will be possible to combine VET with relevant subjects from high school at secondary level, which can provide equal competences to the traditional high school system (*gymnasiale uddannelser*). A student receiving a EUX qualification will be able to gain access to the HE system on equal terms with applicants from high schools. This will create a new linkage that has not been seen before between VET and HE *videregående uddannelser* in Denmark (Nedergaard, 2010).

4.1.3. VET at higher qualification levels in agriculture

In France, education and training within agriculture has experienced an increase in student enrolment. Across tertiary education covering both full and part time courses within agriculture during 2006-08 an increase in student numbers of 17.09% was experienced; the figure for 2007-08 was an increase of 10.29%. Agricultural education accounted for 1.1% of the total enrolment in tertiary education (2007). Enrolment in tertiary education in agriculture in 2007 was 22 974 and 25 338 in 2008 (UNESCO-UIS, 2010).

In Denmark, enrolment in agriculture education was 3 473 students (2007), representing an increase of 3% in the period of 2006-07. The enrolment in agricultural education in HE corresponds to 1.5% of the total enrolment in HE in

2007 (UNESCO-UIS, 2010). The relatively small increase in enrolment might be due to the fact that agricultural education is not very popular choice among the future students, and the providers have difficulty in attracting more students to agricultural education. The two university providers of agriculture economics study programmes struggle to attract students for enrolment, as the areas of agriculture and agro-food in general have decreased in popularity lasting recent decades. In 2008, the Bachelor in agricultural economics had 16 graduates and the Master had 13 graduates (Danish Ministry of Education, 2010). The university stated that the number of students in 2010 was around 11 for the Master course in agriculture economics, and the first students will graduate in 2011.

Education and training providers in France

Many different providers have been identified in France within the agro-food sector. One of the reasons for this complexity is the tradition of continually creating new institutions and programmes to meet the society's needs (International Coparative Higher Education, Finance and Accessibility Project, ICHEFAP, 2008). The providers include universities, university based professional institutes (IUP, *instituts universitaires professionnalisés*), and higher agricultural institutes under the responsibility of the Ministry of Agriculture. The higher agricultural institutes are also known as the seven HE centres of agriculture: Toulouse Agricampus (ENV Toulouse, ENFA), Agropolis International (Montpellier SupAgro), ESTIVE (VetAgroSup), AGRALE (AgroSup Dijon), FABELOR (ENGEES), Pôle de compétences Ouest (Agrocampus Ouest, ONIRIS) and STVE (ENSP, AgroParisTech, ENV Alfort. Including both public and private, there were 20 HE institutions registered offering agricultural qualifications in 2009 (Portea, 2010).

Although the majority of identified providers are public, there are a number of private providers within agriculture economics education and training. There are two types of private provider of higher qualifications within agriculture, differing in whether they have signed a contract with the state. In case of such a contract, the private institution receives some public funding, in return for the obligation to follow national guidelines and curricula and be subjected to occasional evaluation and control by the state. Those institutions that do not sign such a contract are not subject to evaluation and control but are also not entitled to public funding (Qualifications and Curricula Agency, 2005).

Qualifications and programmes in France

A variety of short and long programmes are available from the CAP (secondary level vocational qualification diploma) up to the Master level in agro-food. They

include licence (EQF level 6), professional Bachelor (EQF level 6), Master (EQF level 7), professional Master (EQF level 7), and Doctorate (EQF level 8). In addition, the Ministry of Agriculture has its own qualifications called professional agricultural skill qualifications, which link to the access to national fund grants and authorisation to farm (Fédération Nationale des Safer, 2010); these qualifications are not at EQF levels 6 to 8.

The professionally oriented programmes delivered by IUP in agriculture and agro-food end in a Master degree, requiring three years of study and internship. BTSa, which is a national diploma in agriculture, can be offered by either LEGTA or by private institutions under the authority of the Ministry of Agriculture (Campus France, 2009).

One example of the Bachelor degree is the vocational Bachelor (*licence professionnelle*) that has made progression within agricultural education more accessible. An example of such is the programme called integrated farming. The provider stated that this course was introduced in the school year of 2001-02. In 2009, 25 students successfully completed the course, of which 23 are currently doing internships in the sector. There are several other universities in the country that offer similar courses or a whole degree with the same themes. 70% of the graduates are currently on the job market, 17% decided to continue education, i.e. MSc or PhD, and the remainder are looking for jobs in France or are abroad, i.e. working or internship.

The course content includes the principles of how to minimise the negative impact of agricultural production activity on the environment, while dealing with the economic aspect of the agricultural reality. Formal access requirements are a BTSa, or a BTS, higher agricultural technician certificate in biology, agronomy, environment or geography. However, the recognition of professional experience and informal training can be considered on enrolment, with each student and situation assessed individually. Moreover, the training can be tailored to each student based on professional experience and applied to the specific field in which the company of the student is engaged. The training can be spread over three years, if desired. The provider is public and funded by the Ministry of Agriculture and Fisheries (Montpellier SupAgro, 2010b, p. 342).

Besides the professional Bachelor, a vocational or professional Master (*maîtrise professionnelle*) also exists. One example in the agriculture economics sector is the *maîtrise professionnelle* in sustainable agricultural development, provided by a public university. The Master has the duration of one year. In addition, much of the training is done abroad, through a range of partnerships. The course prepares for studies in sustainable agricultural development,

agricultural economy international, and food security of developing countries (University of South of Paris, 2010).

Examples of non-traditional courses and programmes (i.e. leading to qualifications awarded outside traditional HE) indicate that the traditional format of the universities is being transformed. One of those is a relatively recent initiative of a European Master degree in food studies set up in collaboration between European universities. The teaching is in English and includes 12 months of training in food science, technology, engineering and management, followed by an eight-month apprenticeship in the industry (AgroParisTech, 2010). One course example from a private provider is at a college of engineering in agricultural food, environment and rural development that offers an engineering diploma (*diplôme d'ingénieur* – EQF level 7) in agriculture, food and environment. This course lasts five years. It is possible to access this course through recognition of non-formal and informal learning which the school evaluates individually. There are possibilities to enter at various stages of the diploma, depending on the prior experience and qualifications (ISARA Lyon, 2010).

Cooperation with the labour market in France

A number of types of collaboration between the labour market actors and educational institutions have been identified in France within the agricultural sector. Students on many programmes interact with the labour market through apprenticeships and practical classes. The number of such apprenticeships among students is growing. For instance at level I and II, which correspond to ISCED 5A and includes degrees such as preparation for HE, Master, doctoral or a *Grandes écoles* degree, there were 16 461 students for level II and 13 690 for level I (Powell et al., 2009).

Several new degrees and study programmes such as professional Bachelor and Master have been developed with the purpose of creating progression to HE, both within agriculture and in general, and attempting to link better academic traditional education at higher levels with vocationally oriented programmes. These programmes also require collaboration between education providers and industry. Many of the programmes identified in the study work closely with the labour market in terms of internships and content design. For example, the professional Master course in sustainable agricultural development has a compulsory internship between three and six months. As the course is relatively short and the internship is almost half of the period, this Master has a more practical approach than the more traditional one (University of South of Paris, 2010).

The course in engineering for agriculture, food and environment offered by a private provider cooperates with companies: each of the five years of training includes internships in different companies and with different durations. In addition, papers and theses are developed with the support of a company. The final thesis involves a work placement in a company for six months while the thesis is elaborated. The institution cooperates with industry and acknowledges the changing needs of the labour market.

The chambers of commerce of agriculture also have a central role in linking agriculture education and training and the labour market. The chambers are professionally managed public institutions with the aim of being representatives for agriculture to public authorities and also to be available for farmers in service matters. The chambers are responsible for some training in agriculture, in cooperation with industry. This is implemented through the law regarding individuals' rights for training (Ministry of Agriculture and Fishing of France, 2010b).

Education and training providers in Denmark

All identified VET initiatives in Denmark are provided by public HE institutions. The most common provider of the programmes at these levels is the public formal HE institution, i.e. universities. Of the eight universities in Denmark, two provide qualifications in agriculture economics. Another provider type is the business academies (*erhvervsakademier*) which are providers of HE but within VET. These academies (altogether ten) were an initiative developed in January 2009 and aim to fulfil the political vision that half of all young people per year should have a qualification in HE (Ministry of Education of Denmark, 2010).

It was confirmed both through the interviews and the research that there are no private providers offering qualifications within agro-food agriculture economics at EQF levels 6 to 8. A reason for the lack of private providers within the agricultural education and training is the vision that all education should be available for everybody in Denmark. Private providers would create inequality in relation to education, although some evidence of private providers has been identified. Another aspect is the state grant that students are entitled to when turning 18. The objective of this is to finance themselves during their education but students only receive this when they are enrolled in public-funded education accredited by the government authorities. This possibility of finance leaves no desire for the student to be enrolled in private education, where they need to pay and receive no financial support.

Qualifications and programmes in Denmark

The qualifications provided by public universities are bachelors and masters in agricultural economics. The qualifications provided by business academies are at EQF level 5. The Master course in agriculture economics introduced by one of the universities in 2008 lasts two years and covers agriculture, biology, economics, social science and geography. The access requirement for the course is the completion of secondary school (*studenter eksamen*).

There is currently a new initiative being developed in agriculture education, a professional Bachelor degree at EQF level 6 in agriculture. The initiative was sent to the Ministry of Education for approval in 2010. Within agriculture education, this qualification is a completely new initiative as it has previously not been possible to study agriculture at this level unless the student applied for university enrolment. Duration of the programme is estimated at one and a half to two years including both theoretical and practical aspects of agriculture. The programme will enable students who have completed their studies in agriculture at lower levels to continue their education within VET in the agricultural area. The access requirements for the programme will be agriculture technologist qualification (EQF level 5). Prior learning such as work experience can also provide access, but this will be evaluated on an individual basis.

Demand and enrolment for agricultural education experience an increase when unemployment is visible in other fields. Many unemployed who seek to reskill themselves are adults and most likely to not have the formal qualifications requirements, so, in many cases, informal learning and practical learning are recognised.

All the courses identified have been described in terms of learning outcomes. The perceived value of the learning outcomes approach tends to differ: it was considered very useful for both the institution and the students. The students benefited greatly from knowing what was expected from them by the end of the programme. However, the proper use of the learning outcomes was not recognised by everyone positively. Generally it was believed that most use of learning outcomes was from the pure VET area. However, given that the learning outcome approach is still at a relatively new stage in Denmark, in 5 to 10 years it will be possible to evaluate the actual use of them.

Cooperation with the labour market in Denmark

Data indicates a high level of linkage between the labour market and education providers at all VET qualifications levels in the Danish agriculture sector. The social partners have a relatively important role, and are included in committees and organisations which have a direct impact on the programmes, and the design of the curricula and future needs. The umbrella organisation for agriculture and

food (*Landbrug & Fødevarer*, L&F), represents the primary sector of agriculture, such as farmers, and food processing companies. L&F has political influence on policy development and also on what is taught in the study programmes. The labour market is also represented by committees which include social partners. The most influential social partner of the agriculture and agro-food sector is probably the union for employees (Fagligt Fælles Forbund – 3F). This has a high level of influence on the agriculture sector, both with regard to the labour market and to education.

Another tendency is the link between the universities and the labour market. Universities recognise the importance of the industry's role in the design of curricula and programme development. Close connections between the study programmes and industry are emerging. All of the qualifications identified had industry involvement in the implementation process. The curricula developed by the business academies and VET committees are always in collaboration with industry, as determined by law: the type of collaboration can vary with the programme and area. The companies within agriculture also have a long tradition of accepting more apprenticeships compared to other sectors. While in other sectors it can be very difficult for students to obtain apprenticeships and most have to take time to identify opportunities, it is much easier in the agriculture sector.

4.1.4. Issues emerging from the French and Danish cases

There is a tendency towards networking between HE institution and companies, but also among companies themselves in France. Internationalisation is another key element in the discussion of French HE providers. Many providers form ventures with foreign institutions and companies, and try to attract more foreign students to France. In Denmark, it seems that agricultural education, as with much vocational education and training, experiences some prejudice, often based on assumption, and there is a lack of information and knowledge on the qualifications that exist. At university level, both universities offering agriculture education also state that it is difficult to attract new students to this field

The analysis allow for identifying some key points:

- (a) changing format of provision: a tendency seen both in Denmark and France which is the development of new vocationally oriented degrees. France has both a professional Bachelor and Master within agriculture that can provide progression within VET. In Denmark, a professional Bachelor is under development within agriculture that should create an opportunity for progression and be an alternative for students not interested in a purely academic university degree such as the formal Bachelor;

- (b) strong elements of networking: another interesting element, which forms a discussion more visible in France than Denmark, is the collaboration being formed between the HE institution and companies in the agricultural sector to provide training and education;
- (c) internationalisation: both countries are opening their study programmes and qualifications to international students by including teaching in English, course content that covers global issues, agriculture at international level, and partnerships between countries;
- (d) learning outcomes: all programmes in Denmark are described in terms of learning outcomes, although the effect of the learning outcomes is difficult to measure;
- (e) retraining in agriculture: in Denmark it was seen that people used agriculture to retrain themselves as a response to unemployment representing a shift in careers;
- (f) public providers: Denmark and France have a very strong public education sector. In Denmark there are no private providers of education within agro-food and agriculture economics. Private providers in France (a minority in education at higher levels) have the option to follow the national guidelines set out by the Ministry of Education, sign a contract with the government and be subject to external evaluation by the public authorities to receive public funding.

4.2. Nursing in Norway and UK-England

4.2.1. Economic and social context

This case study aims to provide an overview of the education and training initiatives at higher qualification levels in the nursing sector in Norway and UK-England. Traditionally, nursing is known to be very vocationally oriented and training focused. Currently, the demand for higher levels of competences is increasing and various models for continuing education are available. These developments can lead to the assumption that VET provision is undergoing change, and the need for higher qualifications is increasing.

In Norway nursing colleges formally became a part of HE in the 1980s. More recently, there have been signs of the need to increase the levels of competences, and various additional training programmes are now offered to nurses to provide more specialised training. In England, the first degree course in

nursing was introduced in 1960, but this was not common practice and nursing only became part of tertiary education in 1986 (Degeling et al., 2000). In England one can differentiate between registered nurses and various types of assistant nurses (non-registered and non-specialist staff). However, to assure comparability, the focus in this report is on registered nurses who have the competence to issue medicine and who would be qualified to work in hospitals and medical/public health centres.

There were 90 000 nurses in employment in Norway in 2009 (Norwegian Nurses Association, 2009), which corresponds to 3.6% of the population (Eurostat, 2009b). In England the number of employed nurses was 528 980 in 2008 (Nursing and Midwifery Council, NMC, 2008), which is about 2.5% of the total working force based on the total employment in England in 2009 (Office for National Statistics, 2009).

4.2.2. Selected governance patterns

Stakeholders and policies in Norway

Nursing in Norway has relatively strict state control through national curriculum frameworks. The Ministry of Education is the central policymaker though various other stakeholders, such as the Nursing Board, the Norwegian Registration Authority for Health Personnel (SAFH) and the Norwegian Health Directorate also play a role.

Nursing education, as part of HE in Norway, follows general HE reform trends. The most impact during the last decade came from the Quality reform introduced in 2003, although many of the changes introduced were already a natural part of nursing education, such as the close follow-up of students. Other more general trends are linked to the Bologna process. Nursing education has been especially quick in adopting new regulations, as one interviewee noted: 'Nursing with its history as a profession is used to being regulated and even within HE, they know what it is about. This is part of professionalising the education, to follow-up on the reforms and be serious about implementation'.

Norway is also legally bound to adopt EU directives for health personnel and nurses. The main effect of such policies is that nurses from the European Economic Area (EEA) and Nordic countries can have their qualifications recognised by Norwegian authorities. As nursing is now an established field within HE in Norway, concerns are raised about the relative quality of nurses from other countries who would have their qualifications recognised.

One of the criticisms of the process was that the clinical practice was not reviewed in an equally thorough way, as measuring all of the various

programmes was virtually impossible. One interviewee, however, did mention that in their hospital quality assurance measures are now also being developed for clinical practice periods.

Previously, there was recruitment and competition in nursing programmes. However, this has changed during recent years, partly due to the fact that there has been virtually no general unemployment and nursing education had to compete with other professions for students. To solve this, there have been several government initiatives to increase recruitment, including from foreign countries (Kyrkebo et al., 2002, p. 299). In 2010, a new health sector reform was introduced which will be implemented in 2012, implying that this would also increase the need for nurses.

Stakeholders and policies in England

Stakeholders such as the Nursing and Midwifery Council (NMC), Unison (public service trade union) and the Royal College of Nursing (RCN), QAA (Quality Assurance Agency) are involved in shaping policy. In 2002, the NMC took over responsibility for the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC); this regulates nursing and midwifery by setting standards, registering nurses, ensuring skills and competence updates, setting rules for practice and supervision for midwives and investigating allegations against nurses and midwives who have been accused of misconduct. Being the central registration authority, the NMC advises the government on policy and also disseminates information among nurses, sets standards and provides guidelines for practice (Nursing and Midwifery Council, NMC, 2010). The QAA, apart from quality assurance, is also responsible for developing the qualifications framework.

Some of the policies introduced more recently include benchmark statements for nursing from the QAA, regulator academic and professional standards, nursing orders, and scope of practice, which is more extensive than many European countries.

In March 2010, when the Commission on the future of nursing and midwifery presented its report, the central concern was how to increase the quality and prestige of nursing, being also emphasised that 'degree-level registration is the right way forward to secure high quality care, strong leadership, and parity with the rest of the UK, other professions and other countries. Teachers and researchers are an essential part of the picture, but this is not about 'creating a workforce of academics'. It was also emphasised that 'urgent steps must be taken to strengthen the integration of nursing and midwifery practice, education and research; develop and sustain the educational workforce; facilitate

sustainable clinical academic career pathways; and further develop nurses' and midwives' research skills' (Prime Minister's Commission on the Future of Nursing and Midwifery, 2010).

It was also argued that the EU directive requirements appear to be somewhat outdated for England, as mentioned by one of the experts: while the directive did set a minimum standard, 'there are significant concerns with respect to the minimum training requirements for general nurses and midwives as the current directive requirements are no longer fit for purpose within the context of a graduate workforce and the scope of practice of the registrants in the UK. Furthermore, the barrier of the directive means that accelerated programmes that are learning outcome based and quality assured are prevented by the rigid interpretation of the directive by Internal Market'. Additionally mentioned by an expert is the recent government White Paper (4.32) that seeks a dramatic shift in provision and structures for education; drivers are cost reduction, matching need with demand and resource, and shifts in ownership.

4.2.3. VET at higher qualification levels in nursing

In Norway the number of new nursing students has been relatively stable during recent years, with a small increase from 4 436 students in 2006 to 4 800 in 2009 (DBH-NSD, 2010). England experienced a similar situation with a small increase in the number of students enrolled from 138 705 in 2007-08 to 140 699 in 2008-09 (Higher Education Statistics Agency. HESA, 2010b).

In both countries, nursing education has built-in labour market linkages through clinical practice; in Norway half of the study period on Bachelor level is clinical practice. Cooperation with labour market stakeholders in England reaches, according to an expert, the post-qualification level: 'Via the strategic health authority post qualification provision is commissioned and developed in partnership with local health care providers'. The National Health Service purchases education from HE institution. A variety of stakeholders are included, and there are consultations with the Department of Health (DH), the Council of Deans, the professional organisations (such as RCN) and regulators (Nursing and Midwifery Council).

Nurse training might, therefore, be considered as very vocationally and practice oriented. However, in Norway, there are discussions on whether the linkage can be improved; the interviewed representatives of both nurses and the labour market noted that they would be interested in strengthening these links. In general, clinical practice is the major path for this type of linkage, but there is also increased use of dual positions for nurse educators, both in the hospital and

education institutions, as well as an interest in increasing the amount of such positions.

Education and training providers in Norway

Nursing education is a part of HE in Norway and is offered in university colleges and universities. HE includes seven universities, six specialised institutions at university level and 24 public university colleges. There are also various private institutions – for example Høgskolen Diakonova, Lovisenberg diakonale høgskole, Betanien diakonale høgskole – where nursing degrees are offered. In 2008, Bachelor degrees in nursing were offered in 31 study places, of which five were private colleges. The private colleges also follow national framework plans, but they all have a religious component of varying degree. Some of them are leading in the development of fields such as nursing ethics. The private colleges do not educate a large proportion of the students, but they are seen to be an important part of the system.

Quality assurance measures are provided through the Norwegian Agency for Quality Assurance in Education (NOKUT). The first round of accreditation of nursing education, initiated by the Quality reform in 2004, was very influential though difficult. The main issue was that many of the institutions lacked the necessary staff competences, which included that a minimum of 20% of staff should have a first level competence, either in a form of a PhD or a teaching competence of equal level. In the following years after the first round of quality assurance, many nurse educators updated their competences; there was also recruitment from abroad and, to a lesser extent, PhDs from other fields (for example biology). By 2008, all of the programmes had been accredited and approved. An interviewee argued that the process was very useful; as the requirement for having 20% of staff with first level competence had actually existed from 1995, the accreditation process had an impact. Nurses do not have to undertake national examination, but there is a requirement for authorisation, which is received upon completion of a formal nursing course (Kyrkebø et al., 2002).

Qualifications and programmes in Norway

Nursing in Norway has been through several recent developments, following the general trends in qualifications requirements by the society. With increasing demand and higher quality, nursing became a part of HE during the 1980s, but the process was time-consuming and nursing found its legitimisation as a part of HE only in the 1994 merger of the college sector. The Quality reform from 2003

finally established nursing as a part of HE in Norway, on equal grounds with other HE fields, offering same type of degrees.

A Bachelor degree is sufficient to work as a general nurse. In-depth specialisation courses are required in areas such as anaesthesia, midwifery, cancer care, psychiatrics and paediatrics. These courses are additional specialisation courses building on a Bachelor degree and do not formally offer a Master level qualification, but there is a tendency towards these courses becoming Master level. It is also possible to take the Master and PhD degrees in nursing science.

Since the Reform of 2003, Norway has followed the European model of degree programmes, also applicable to nursing, in which the most common model for study is a three year 180 European Commission Bachelor degree providing the basic qualification to work as a nurse. This study programme has a structure that includes theoretical courses and clinical practice, so the balance being about 90 European Commission each during a 180 course. Theoretical subjects include three areas: medicine natural science, social science and nursing science. Clinical practice is divided between three years, comprising basic nursing, medical surgical care and mental health care (Kyrkjebø et al., 2002; Espeland and Indrehus, 2003). The content of programmes is guided by 'superior/national frameworks' (*rammeplan*). So far, four have been released, the latest being in 2004; these plans outline objectives and aims, scope and content and have guidelines for organisations, structure and assessment. Each programme can develop their own curriculum based on these guidelines, but it has to be approved by the Nursing Board (Mathisen and Bastoe, 2008, p. 390; Kyrkjebø et al., 2002). A typical example of a nursing programme is provided by the Bodø University College. The programme and curricula follow the national framework and the goals of the Bachelor study are: 'to educate knowledgeable, independent and responsible nurses who have the ability and goal to have an awareness and reflective attitude towards nurse practice' (Handelshøgskolen i Bodø – Hhb, 2010).

Due to increasing labour market requirements and the need for specialised nursing competences, it is also possible to take various specialisations that build on the Bachelor degree. The assumption is that through a three year Bachelor degree the nurses would have a basic competence of patient care (*handlingskompetanse*) and knowledge on more specific areas, but would still lack more specific skills/experience on these areas (*Handlingsberedskap*) (Ministry of Education and Research of Norway, 2008). Some of these courses, such as midwifery, have been a part of HE for a long time. Others, such as

anaesthetic or intensive care were earlier part of the hospital portfolio due to the fact that hospitals were dependent on this labour force.

Some of the specialisation courses for nursing, such as psychiatric nursing, were moved to university colleges a long time ago. This could be somewhat problematic, since the development of the programmes was not practice-oriented, and has become non-clinical multidisciplinary studies. Both psychiatric and geriatric nursing programmes have faced these problems.

From 2001, the remaining programmes were moved into the HE sector. The various specialisations include areas such cancer care, anaesthesia, paediatric, intensive care, midwifery, neurology, and psychiatric care among others. The entry requirements for such courses vary: either a completed Bachelor degree, or a combination of a Bachelor degree and a certain number of years of work experience as a nurse. Usually these specialisation courses last between one and a half to two years. They are also governed by national framework plans.

There is also a parallel system of further education 'clinical specialist' (*klinisk specialist*), offered by NSF. The proposal for this system was put forward in 1985 at an NSF meeting for the first time, and was initiated in 1996. The basic idea is that one first takes the formal educational specialisation (for example becoming an emergency nurse) and then provides evidence of professional development activities out in the clinical nursing field. The purpose is to have systematic further and continuing education that is close to the practice field. The NSF requirements advise the participating programmes in workplaces to work closely with university colleges which can provide expertise (NSF, 2007). The NSF is working towards including this in the more formal qualifications but it is not currently included.

It is also possible to take a Master degree and a PhD in nursing science. PhDs, however, are research focused, providing competence to do research on nursing related issues. This academisation can also be observed when looking at the role of the nurse teacher: the role has changed 'from being a tutor and model in clinical practice to becoming an academic person doing scientific work of high quality' (Mathisen and Bastoe, 2008, p. 387).

Due to the HE system minimum requirements, that 20% of the staff of an HE institution must have PhD or equivalent, concerns have been voiced in the nursing sector that these qualifications requirements reduce the potential for nursing educators to keep up with the practice skills (Kyrkebo et al., 2002). Therefore, there are now options to have dual positions in both an HE institution and a linked hospital/health organisation considering the importance of such positions.

Education and training providers in England

Courses are provided by universities, colleges and distance learning through open university. Often, institutions offer a variety of degree specialisations. For example, at Thames Valley University (University Of West London), one can undertake a Bachelor degree in child health nursing, learning disabilities nursing, or adult nursing.

Qualifications and programmes in England

The first degree course in nursing was introduced in 1960, but this was not common practice. In the 1970s the need for increased nursing competence was highlighted, with clinical technologies 'eroding the established boundaries between medicine and nursing' (Crotty and Butterworth, 1992). In 1979 the UKCC was established, with the responsibility for transferring courses to degree level, but progress was extremely slow and government agreement was only reached in 1986 (ibid).

Nursing education has changed significantly during recent years. In 1992 an extended role for nurses was developed and in 2000 specialist practitioners, nurse consultants and modern matrons were introduced (Norrie et al., 2009). Project 2000 was then introduced to merge smaller institutions and create more high quality nursing education and diploma level courses. It also highlighted the idea of nurse teachers in classrooms, thus merging the theoretical and practical elements of education (Crotty and Butterworth, 1992). Additionally, it introduced the idea of supporting students in a clinical environment (Wilson-Barnett et al., 1995). However, the first set of Project 2000 graduates did not appear before the mid 1990s (Degeling et al., 2000). The qualifications provided currently in the nursing education in England include diploma and Bachelor degrees.

A new requirement that will be put into force from 2013 is that all nurses in England should have a Bachelor degree qualification, and the various diploma courses will be phased out in 2011-13 (National Health Services – NHS, 2010). It is also possible to take a post graduation qualification in nursing, ending with a postgraduate diploma qualification, providing additional specialisations in clinical nursing (e.g. oncology, gynaecology), nurse education and nursing management. Thus, there are also Master and Doctoral level qualifications that focus on nursing sciences and are more research oriented.

In England, there is a distinction between first and second level nurses (second level training is no longer provided and being phased out) and specialist nurses. The nurses currently enrolled in education are called pre-registration nurses. Courses that are offered to already practicing nurses are called post-registration courses.

The English system does not differentiate between university and the non-university HE. Nursing degrees are either three year diploma courses or four year degree courses provided in the HE sector and provide a basis for recognised nursing registration by the NMC. Prior learning, both practical and theoretical, can be used to reduce study time up to one year of the three year programme and each university evaluates prior learning individually. This can include other degree studies, or nursing practice (National Health Services – NHS, 2010). The types of courses available on EQF levels 6 to 8 include the following:

Table 4. **Types of courses available in England**

Type of course	EQF level
Nursing and Midwifery Council – qualification	7
practice teacher qualification	7
mentorship	6
specialist community public health nursing	6 and 7
prescribing for non-medical prescribers	6 and 7

Source: interview

A new initiative is the clinical academic pathways, where national and local funding has also been developed. This is an initiative to provide doctoral level training while ‘maintaining and further strengthening clinical expertise’. In addition there are post-doctoral programmes to further develop nurse consultants and academic practitioners.

All of the application processes are dealt with by the organisation responsible for managing applicants for HE centrally (Universities and Colleges Admission Service, UCAS). The universities can set their own rules over the minimum requirements (Royal College of Nurses – RCN, 2010): general certificate of secondary education, general certificate of education, ordinary level, certificate of secondary education, general national vocational qualification, national vocational qualification (a kitemarked access to HE course), preparation course for people with no formal qualifications, Business and Technology Education Council (a qualification awarded by the NNEB dating from 1985, including the diploma in post-qualifying studies). If the applicant has none of these, it is possible to apply for a nursing cadet scheme, which gives a NVQ level 3 qualification and access to nursing education at higher levels (ibid).

In contrast to Norway, the content of courses in England is not strictly controlled and a variety of various specialisations can be obtained. It is possible to specialise in four different areas: adults, children, learning disabilities and mental health. The course content provided by HE institutions includes equal

division of practical and theoretical knowledge. A recent government paper from 2006, 'modernising nurse careers', stated that the goal was to achieve 'flexible principle-based curriculum that is built around patient pathways, with a strong academic foundation and interdisciplinary learning'. It is argued that, rather than specific discipline, the move is towards 'careers built around patient pathways using competence as the currency for greater movement and flexibility' and standardisation of higher level competences (Department of Health, 2006).

The shift towards learning outcomes has been linked to the Bologna process. The 2002 framework outlined the basis for implementing learning outcomes, so the process in health started prior to the introduction of qualifications frameworks. Currently most of the institutions are in the process of implementation, though evidence from the study shows that some institutions have chosen to wait and see. The deadline for implementation is foreseen in 2012; it does not leave much time for public discussion and raises doubts on the quality of quick implementation.

4.2.4. Issues emerging from the English and Norwegian cases

In Norway there is a general tendency for nursing specialisation courses to become Master degrees. However, many university colleges lack the necessary requirements to offer a Master degree and the process is seen as time-demanding and difficult. Universities can start up Master degrees themselves; university colleges have to go through an accreditation process. Several of the university colleges are now establishing new professor positions to provide such Master degrees. At the end of May 2010, nurses in Norway went on strike to ensure that professions that have three to four year-old Bachelor programmes would receive equal salary. As of now there is a salary gap between male and female dominated professions. Additionally, it is demanded that the new shift in regulation is followed up with funding from the government. Another of the demands is for better opportunities for continuing and further education, providing an improved framework for increasing nursing competence (Borgersen, 2010).

In England the media echoes concerns that, if nursing becomes a degree education, the increased study debt would have a negative effect on retention and application rates. There was a considerable decrease in applicants to nursing in the end of 1980s and early 1990s, and in 2001 the NHS reported a shortage. The most important risk factors for retention were dissatisfaction with promotion and training opportunities, considered more critical than workload and salary. While policies at the end of 1990s focused on increasing nursing salaries, the suggestion was made that an increased focus on training might have a better effect (Shields and Ward, 2001). A study from 2009 focusing on older nurses

indicated that the most important factors for nurses to consider continue working are ‘feeling valued and being consulted when change is implemented’, thus highlighting the need for government policy to incentivise nurses to stay in the profession (Storey et al., 2009).

The analysis identified some key points:

- (a) legitimisation for being part of HE: nursing education in England and Norway does not have a very long tradition as part of HE. In both countries, nursing became or made a move towards becoming a part of HE during the 1980s. In Norway it appears that the legitimisation for nursing education as part of HE took some time. The process was also clearly time-consuming in England and nursing education as such was not clearly defined until the mid-1990s;
- (b) higher levels qualifications go along with more specialisation: another general trend seems to be a move towards higher qualifications and more specialisation in the sector. There is a general understanding that the increased requirements of the labour force require higher levels of competence and skills. This requirement is starting to be filled by education and training, either in the form of degree courses, or various further and continuing education courses;
- (c) move towards higher qualifications: England will have a degree requirement for all its nurses from 2013. This has also been seen in Norway, where the specialisation courses were first moved from hospitals to HE, and now several of the specialisation courses are evolving into Master level courses. This could be linked to the need for quality assurance, and high national interest in the education of nurses. With nursing being one of the regulated professions, it appears that HE provides a more stable and transparent framework for training;
- (d) degree of curriculum control: this is one of the main differences. In England, a much greater variety of nursing courses can be found, whereas in Norway the curriculum control and quality assurance of nurses through national frame plans is seen as the best organisation.

4.3. ICT in Germany and Poland

4.3.1. Economic and social context

This case study relates to the information and communication technology (ICT) sector. It aims to provide an overview of the education and training initiatives at

higher qualification levels in the ICT sector in Germany and Poland. The share of ICT specialists of the total labour force in Germany (3.14%) is slightly above the EU-15 average (3.06%). The share in Poland (2.77%) is below this average, but is growing (OECD, 2008b). In Germany, about 845 000 people were employed in ICT jobs in 2009 (Bundesverband Informationswirtschaft, Telekommunikation und neue Medien e.V., BITKOM, 2011) while in Poland about 250 000 were employed (Central Statistical Office of Poland, 2009). Overall, ICT is one of the fastest growing sectors worldwide.

Germany and Poland differ considerably at all education levels in terms of training in the ICT sector. In Germany, the ICT sector is the only area with a further education system with defined competences, that also fulfils the requirements of equality with university degrees with regard to these competences. The German AITTS (advanced IT training system) was mainly developed with the social partners, defined as trade unions in cooperation with the industry. Universities were not highly involved in this development (Kompetenzzentrum IT-Bildungsnetzwerke, 2010). In Europe the ICT sector developed a European reference competence framework that links national and company qualifications and related five proficiency levels for ICT practitioner and manager competences to EQF levels 3 to 8.

4.3.2. Selected governance patterns

Stakeholders and policies in Germany

The design of qualification policy in Germany is characterised by a high level of social partnership with the aim of building consensus. Business associations and trade unions, the Federal Government and the Federal States (*Länder*) all play an important role in developing ICT training (Borch et al., 2001). The main stakeholders in HE are the ministries in charge of education or sciences of the *Länder*. Enterprises and chambers of commerce play an important role, especially in relation to universities of cooperative education. Vocational training and further education policy is developed at the federal level, with the main policy-maker being the Federal Ministry of Education and Research (BMBF).

Continuous training in ICT results from different initiatives or projects since 1999. Its development relies on cooperation between the industry association (BITKOM, the Federal association for information technology, telecommunications and new media), a trade union (IG Metall), the federal government (ministry in charge of VET and further education) and the Federal institute for vocational education and training (BIBB) (Borch et al., 2001). The system for continuous vocational training encompasses three consecutive

professional qualification levels: certified specialists, operative professionals, and strategic professional. Based on these professions, further education regulations were developed which should lead to qualifications at EQF levels 6 to 8 (the implementation of EQF and the determination of qualification levels are not yet completed in Germany).

Stakeholders and policies in Poland

The Polish VET system is more academically oriented than the German one. Numerous technical schools were closed in the early 1990s in Poland. This resulted in a shortfall of specialists, for example at the level of technicians, although there are now political efforts to bring the schools back to life. The strong academic orientation of the Polish education system did not occur because of the needs of the economy but was a political decision. The Ministry of Science and Higher Education is responsible for academic education.

One of the first legal frameworks for HE after the revolution of 1989 was the law on HE in 1990, updated in 2005. The conditions that are relevant for the ICT sector include:

- (a) the opportunity to create non-public tertiary educational institutions (TEIs) which can work on a non-profit basis. This has led to rapid growth in training capacity in the ICT sector, an example being the Polish-Japanese-University in Warsaw;
- (b) the opportunity for public institutions to generate their own revenue. Full-time students are not charged a fee, but others such as part time students – for example people employed and studying at the weekend or students in evening classes – can be charged tuition fees. These additional courses led to an increase in participants in ICT training.

Public technical universities were dominant in the area of training and education by 2005. Since then around 50 private schools have been founded which also offer Bachelor and Master HE qualifications in the ICT sector. These developments are seen by some in Polish education as being somewhat negative, because many private HE institutions were founded by private investors who are pursuing primarily commercial interests, without having quality of training as primary goal. These schools often used lecturers and teachers from public universities on a part-time basis to be able to offer training courses, although the Polish Ministry of Education has recently banned such part-time teaching from professors and lecturers of public universities. It is currently uncertain what impact this development will have on the training of specialists above EQF level 5.

In Poland a clear distinction is made between higher/academic education and VET at levels 6 to 8 of the EQF. One aspect that shows the differentiation between academic (university) and vocational (non-university) HE is the right to carry out doctoral studies in at least one area: the TEI which do not have this right are considered professional TEI (Fulton et al., 2007). Professional TEI exist in the ICT sector only in very limited numbers. Many of them were closed when the communist era ended and the transition into a market economy took place. For this reason the further education system in the ICT sector below EQF level 6 was not developed.

4.3.3. VET at higher qualification levels in ICT

In Germany the number of informatics students at universities and universities of cooperative education was about 122 000 in 2007 (Statistisches Bundesamt Deutschland, 2009). In Poland, in 2008, around 87 800 students were enrolled in informatics courses, of which about 42% were in private HE institutions. Nearly half of the students in informatics are enrolled in part-time courses, and most of these (around 29 500 students) are studying in private HE institutions (Central Statistical Office of Poland, 2008).

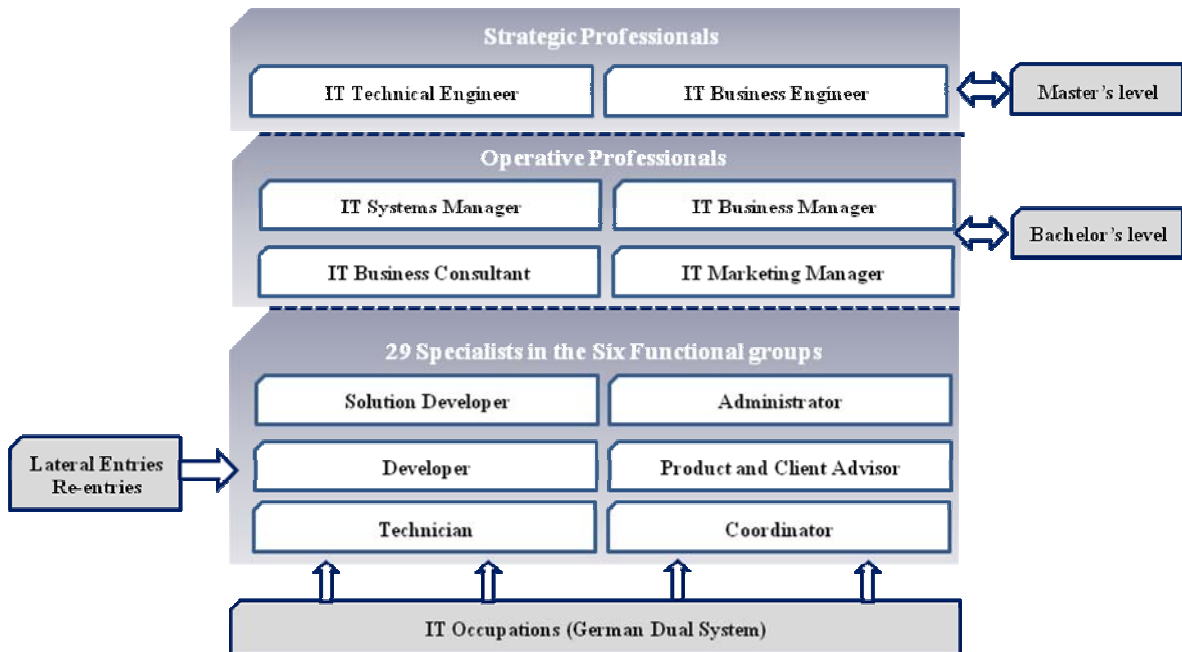
Education and training providers in Germany

In Germany a well-developed HE and continuing vocational training system exists at EQF levels 6 to 8 in the ICT sector. A total of 239 universities and universities of applied sciences offer ICT programmes; 39 universities of cooperative education offer programmes in informatics. In total, 14 of those providers run distance education and training offers. Non-HE institution programmes in the ICT sector are provided by approximately 15 non-HE VET providers (educational and vocational organisations) in the ICT sector and two HE VET providers.

Qualifications and programmes in Germany

The advanced IT training system (AITTS) in German is provided within companies (work based). It aligns a system of career profiles associated to three levels of proficiency with a (see the figure below) with a training concept for workflow-embedded qualifications.

Figure 6. The Advanced IT Training System in Germany



Source: Kompetenzzentrum IT-Bildungsnetzwerke, 2010.

AITTS was developed as an alternative to a HE with no reference to the EQF, which was nascent at that time. The goal of the equivalence of professional qualifications with Bachelor and Master Degrees was not explicitly part of the concept. Degrees from the IT further education system have been discussed as being in the range of EQF levels 5 to 8, but there is no consensus as yet. This system follows a learning outcomes approach along levels of increased proficiency. The substantial competition between public degrees and certifications delivered from the private ICT industry led to AITTS being revised: the profiles of the specialists of the AITTS were made more marketable and have been reduced from 29 to 14. Learning takes place within the workflow and projects; learners are supported by a facilitator, technical experts, colleagues, trainers from the companies and external training providers. The professional training is very often a combination of self-education and support of trainers during the process of work within the company.

Advanced IT training for strategic and operative professionals is regulated by national law. Strategic and operative professionals are examined by public agencies, especially chambers of commerce and industry, under federal regulations in accordance with the regulation on Advanced IT training in the field of information and telecommunications technology, enacted in May, 2002. The

qualification of operative professionals can be awarded on the basis of ICT vocational training certification, at least two years employment plus an IT-specialist certificate. Alternatively, a non-ICT training certification plus at least three years employment plus an IT-specialist certification, or just six years employment in the ICT sector plus an ICT specialist certification, are required. For strategic professionals, a qualification as an operative professional or a university ICT-degree is required as well as at least an additional two years employment and English language skills. Advanced IT training for specialists is carried out within the framework of a comprehensive certification procedure determined in accordance with European norms.

In terms of the impact of the EQF on the ICT sector in Germany, the interviews suggest that the EQF has led to greater transparency; it supported an overarching international perspective and helped overcome and clarify, to some extent, the context of educational structures, educational programmes and degrees. The referencing of the professional qualification degrees in the ICT sector at EQF levels 6 to 8 does not only depend on the acceptance of these EQF levels, but also whether the existing structures in Germany, which could create barriers to the equivalence of training and education, can be overcome. In practice the AITTS, as a vocational qualification, has the same recognition as a university degree. However, only universities can provide appropriate degrees such as Bachelor or Master. Attempts by the organisation of chambers of commerce to overcome these structural barriers with a 'professional Bachelor' have failed so far. Examples of such professional Bachelors could be the corresponding *Meister* in crafts or alumni from *Fachakademien*, but formal recognition had not been yet achieved for legal reasons.

Cooperation with the labour market in Germany

ICT education has various connections to the labour market, but the intensity depends on the type of education and training. A dual education system automatically ensures a practical reference to the economy, as it primarily takes place in enterprises. Study courses at universities of applied sciences connect to the labour market, since practical internships are compulsory. This is not the case for study courses at universities. However, it is now widespread that students complete internships in companies or work while studying to improve their potential in the labour market.

In continuous vocational training in the ICT sector a so-called workflow-embedded qualification concept exists. Participants use the work environment to realise and embrace learning opportunities. Training implementation is promoted

by a combination of self-education and support of trainers during work within the company.

Education and training providers in Poland

The ICT sector at EQF levels 6 to 8 in Poland is characterised by an academic education system. Currently in Poland there are 22 public technical universities; 17 offer study courses at higher levels in the ICT sector. There are about 50 private TEIs in the ICT-Sector, resulting in a strong private share. Although the number of private institutions is much higher than in the public sector, nearly 60% of the students are studying at the public institutions. Some of the private TEI are run by large foreign ICT companies, which are based in Poland, such as Microsoft or Intel.

There are three main institutions in Poland aiming at quality assurance in the public HE sector: the State Accreditation Committee (SAC), the General Council for Higher Education and the Conference of Rectors of the Academic Higher Education Schools (KRASP) (Ibid).

There is a great variety of private institutions and the level and intensity of quality assurance varies significantly. In some institutions there is almost no quality assurance, while established quality assurance systems are used in others.

Qualifications and programmes in Poland

The Polish education system is strongly academically oriented; this is also the case for vocational education and training. For this reason there are various degrees on the Bachelor or Master level (e.g. telecommunication, programming, engineering, software development). However, special degrees for the ICT-sector below EQF level 6 are very rare.

There is only a small number of HE institutions specialised in further education for IT specialists. Numerous university further education programmes require, however, that the specialists have a Bachelor degree. Overall, there is a range of possible further education opportunities for ICT specialists that have a qualification of above EQF level 5. In contrast, for specialists without an academic degree, there are few training offers which enable them to move from EQF levels 4 or 5 onto higher levels.

In Poland, stakeholders from the technical universities noted that there is no uniform classification of skills and competences for existing education and training programmes: general education, VET and HE. This contributes to VET being only partially accepted. The introduction of the NQF could lead to an increase in the attractiveness of vocational further education in Poland. Currently,

there is no classification and systematic approach with regard to ICT sector qualifications achieved in further training or a profession. This will be necessary for the development of career prospects and more movement to higher NQF or EQF levels.

Cooperation with the labour market in Poland

Recently there has been a move towards stronger labour market orientation in education and training in Poland. However, since there are no regulations, such an orientation depends on the commitment of each educational institution and corresponding industry and sector. Many public universities have a long-standing cooperation with ICT-companies. However, this is not the case at private universities or training institutions. Graduates from private universities often do not meet the needs of the economy and need to acquire additional certifications. Such certifications are mostly provided by private enterprises, e.g. Oracle (database software) or SAP (business management software).

Poland is making efforts to link the education system with the labour market:

- (a) partnerships between the TEI and potential employers have been established, which allow industry professionals to contribute to the development of educational programmes;
- (b) the National Network of Career Offices offers students and graduates guidance and advice on how to make their way onto the labour market and employment (National strategic reference framework 2007-13);
- (c) vocational education is being diversified, e.g. through the expansion of vocational education and TEI in rural areas.

There is substantially more cooperation in the ICT sector between the employer organisations and vocational education than other sectors. This is driven by several factors:

- (a) the ICT sector is quite a young sector, so stakeholders thus tend to be more open to new developments;
- (b) the profiles of people employed in ICT change faster than in other economic sectors. Adequate education and training of skilled specialists is only possible if regular exchange of information between the educational institutions and the economy takes place;
- (c) ICT companies in Poland have high demand for (highly) qualified ICT specialists. Therefore, they have an interest in ensuring that there are sufficient well-trained specialists.

These trends are reinforced by the fact that universities are increasingly dependent on external funding. Due to the shortage of specialists in the Polish

ICT sector, companies have a higher interest in helping to fund courses which provide such well-trained specialists.

Internships for students are not mandatory in many educational institutions, so for many students, especially in private universities, there are few opportunities to gain practical experience in a company. Even in public universities there are no uniform regulations in this regard, though there are exceptions. ICT students at the Technical University of Warsaw have to complete an internship lasting at least one month each year. The internships are organised by the university, through its contracts with companies. The ICT sector is expected to significantly expand its the number of internships in companies in the next years.

4.3.4. Issues arising from the German and Polish cases

The development of the AITTS further education system can be considered as part of changes in education and training in Germany. It coincides with initiatives to improve recognition, dual study programmes and to introduce alternatives to formal recognition. Within the federal initiative for recognition of professional competences for HE programmes (ANKOM – Anrechnung beruflicher Kompetenzen auf Hochschulstudiengänge), which was implemented at two academies with IT courses, elements of the AITTS degrees were tested to see if they could be accepted for university courses. Following a 2003 decision of the Conference of German cultural ministers of the federal states on recognition of knowledge and skills for HE, professional knowledge and skills can compensate up to 50% of studies and content, with a level that should be equivalent to the chosen studies for which the prior learning is to be recognised. This has first to be examined by a special accreditation institute. The access requirements for university also have to be fulfilled (anrechnung beruflicher Kompetenzen auf Hochschulstudiengänge – ANKOM, 2010). Alternatives to formal recognition also exist and could expand. These include degrees from foreign universities, acceptance of continuing training degrees in recently developed and new study programmes, a shift into the area of private universities (e.g. the recognition of parts of the profiles of specialists of the ICT further training at the Steinbeis-universities) (SMI Business School, 2010) and start-ups of (private) further education colleges.

The Polish ICT sector is one of the fastest growing in Europe. Outsourcing of IT services and the movement of companies from other European countries into Poland drive this trend; Polish SMEs have made a significant contribution to this development. The employment outlook for HE graduates is good in Poland, with unemployment rates substantially lower than for graduates of secondary levels.

The popularity of ICT training has significantly increased in recent years. Despite this, low openness of scientific and academic circles, low mobility between sectors, and the unwillingness to face new challenges can explain the weak link between science and high-tech industries, including ICT (National Strategic Reference Framework 2007-13).

The analysis identified some key points:

- (a) role of private providers: Poland has many private HE institutions, which has led to expansion in capacity of vocational training in the ICT sector. Private providers of HE courses pursue primarily commercial objectives and labour market orientation can be low. In Germany, the providers are universities of cooperative education, providers of distance learning, non-HE VET providers, and HE VET providers;
- (b) role of sector qualifications framework: the sectoral qualifications framework for ICT in Germany is the most advanced of all industries, aided by the huge demand for ICT professionals since the late 1990s. For this reason new VET training and further education courses and degrees had to be created. A consistent qualifications framework was developed to classify the new qualifications. The ICT sector is the only sector in Germany that has its own further education system, which claims to be equivalent to academic degrees and is promoted through social partnerships. In Germany a very detailed and wide-ranging Advanced IT training system (AITTS) exists, which conveys qualifications on the EQF levels 4 to 8. It is exactly determined to which levels of qualification the further education courses relate;
- (c) CVET and the possibility for part-time study: in Germany, in contrast to Poland, ICT companies are actively involved in developing courses on all EQF levels and provide their own courses, especially in continuing training. There are other important differences between Germany and Poland. While German private education providers are active in continuing vocational training, and only seldom in university education, in Poland they play an increasingly important role throughout education and training. Germany has a well-elaborated system of CVET at EQF levels 6 to 8. Both in Germany and Poland it is possible for students be enrolled in a part-time mode.

4.4. Finance in the Netherlands and Portugal

4.4.1. Economic and social context

This case study aims to provide an overview of education and training initiatives at higher qualification levels provided through distance learning in the finance sector in Portugal and the Netherlands. Distance learning is a methodology adopted by different types of training providers and addresses the working population, completing the range of issues considered in this study. Recent developments in ICT have made it possible to deliver training and education adapted to the needs and requirements of the student. Distance learning incorporates techniques and methodologies from various areas, to provide a complete learning experience. Through the use of simulations, interactive games, web-conferencing and different interaction mechanisms, employees can attend training online and prepare for specific tasks within their profession.

Financial services include three main sub-sectors (Kaisergruber et al., 2009):

- (a) banking industry with retail banking and wholesale banking acting on the global financial market;
- (b) insurance industry (life insurance, non-life products and re-insurance);
- (c) insurance and financial intermediaries.

Recently, the skills and qualifications required to work in this sector have evolved: 'the knowledge foundation of the sector has changed significantly during the past decade. New competences have been developed for new jobs. Requirements for a high-level of education have been raised for many functions' (ibid, p. 20).

Portugal has migrants spread on all continents, especially in countries like the USA, Brazil, Canada, Venezuela and many European countries; it also maintains strong relations with many of its former colonies, such as Angola, Mozambique and Cape Verde. Many Portuguese banks are represented in different countries and need to train their staff regularly. Distance learning is one of the main solutions to provide training within these institutions. In Portugal in 2009 around 1.8% of the total labour force was occupied within the finance and insurance area (Eurostat, 2009b).

In the Netherlands the institutions and professionals connected to the financial area make substantial use of distance learning. Banks, for instance, use state-of-the-art technologies due to their need to provide training for their representatives across the world in a short period of time (e.g. to prepare the employees to present new services to clients). Distance learning is also often

used for professionals in accountancy and insurance. In 2009 a total of 3% of the total labour force was engaged in the finance and insurance sector (ibid).

4.4.2. Selected governance patterns

Stakeholders and policies in Portugal

The development of specific policies for distance learning in the finance sector is not attributed to a specific body. The Ministry of Science, Technology and HE is responsible for HE policy, and the Ministry of Labour and Social Welfare is responsible for VET, namely through the Secretary of State for Employment and VET. Relevant bodies in terms of VET are the National Qualification Agency (NQA), Institute for Employment and Vocational Training (IEFP, Instituto do Emprego e Formação Profissional) and the General Directorate of Employment and Labour Relations (DGERT, Direcção Geral do Emprego e das Relações de Trabalho). However, these institutions only deal with initiatives up to EQF level 5.

Policies that influence the development of vocationally oriented training in higher levels in the finance sector vary depending on the characteristics of the training initiative, the type of learning provider (for instance HE institution or private training provider) and the specific subsector. In the case of courses provided by an HE institution, the regulations applicable to the whole HE system, in accordance with the Bologna system, must be followed. When training is provided by a training organisation (private or public), the provider must be accredited by DGERT (Direcção Geral do Emprego e das Relações de Trabalho).

In specific subsectors within the financial area there are regulations on the characteristics of the training initiatives. The Portuguese Institute of Insurance sets the characteristics that training initiatives (including distance learning) should have, so that the training is acknowledged as valid: for example, in order to become insurance mediators, professionals must frequent a course that is acknowledged according to a specific norm and approved by ISP (Instituto de Seguros de Portugal), which is a technical commission.

There are no specific regulations about the characteristics of the training provided by banks. However, the finance sector in general is ruled by national and international regulations (at a national level, the Bank of Portugal has this responsibility) and this has a direct influence on the content and characteristics of many training initiatives, as they need to follow strict rules to ensure that the training will provide the required competences.

Specific policies regarding distance learning and the provision and quality of distance learning courses do not exist in Portugal. Global governmental initiatives

such as Plano Tecnológico (a strategy developed after the Lisbon Strategy, focusing on innovation, qualification and scientific and technological development) includes recommendations on the importance of the use of ICT and distance learning, but more detailed action plans still need to be developed in this area.

Stakeholders and policies in the Netherlands

There is no single ministry responsible for the development of policies influencing directly the area of distance learning in the finance sector. However, there are courses provided by organisations, which are subjected to policies and legislations from the Ministry of Education, Culture and Science.

There are no policies that drive the specific distance learning (including the finance area) in the Netherlands that have been identified. Distance learning is normally included under another topic, and the policies for these areas are applicable for distance learning. For instance, much attention has been dedicated to distance learning in regard of policies for lifelong learning. Other policies that influence this specific distance learning area are the Higher Education and Research Act (WHW) from 1993, amended in 2002, and the Adult and Vocational Education Act (WEB) from 1996 (Ministry of Education, Culture and Science of the Netherlands, 2010).

4.4.3. VET at higher qualification levels in the finance sector

In both countries, offers of distance learning courses in the finance sector are mainly designed for working students employed in this sector. Consequently, as in the Netherlands, the average age for these students tends to be higher than in other cases.

The use of training methodologies at distance is particularly suitable for this public, giving the possibility of conciliating work with training. This is a target group with constant training needs (e.g. to learn about new regulations or new products), including in the workplace. Customising offers implies that the contents are usually asynchronous, to allow students to use them anytime. They are case-based, so that students can relate to practical situations that occur in their day-to-day work, and the contents are organised to allow quick search of information during working hours. Another characteristic of the students who attend these courses, according to one interviewee, is their mobility (within the same institution but also across different locations or across institutions). Therefore, it is important that the training allows a significant flexibility, not only in terms of time, but also in terms of context and even language (e.g. courses available in different languages).

Education and training providers in Portugal

A total of 12 main VET providers have been identified, which can be grouped in the following categories:

- (a) private companies who develop tailored courses and contents especially for banks and insurance companies (e.g. ISQ, CEGOC);
- (b) HE institutions or departments oriented to the training of professionals in the finance sector (e.g. the Catholic University, Higher Institute of Bank Management (Instituto Superior de Gestão Bancária, ISGB));
- (c) VET providers oriented for the training of professionals of the finance sector (e.g. IFB, Portuguese Academy of Insurances, – Academia Portuguesa de Seguradoras);
- (d) other VET providers with a larger training and education offer, with specialised courses in finance (e.g. INA – Instituto Nacional de Administração; Global Estratégias).

Qualifications and programmes in Portugal

The qualifications awarded depend on the providing institutions. HE institutions can award degrees such as Bachelor, Master or other types of certification, such as post-graduate certificate (EQF level 6). Each training provider can award a certificate in the end of the course, as long as they are an HE institution or a certified training provider (certified by DGERT). Except for Bachelor and Master and post-graduate certificates, the certification awarded is usually only internally recognised, e.g. if a bank does training about a new legislation, this has mostly an internal value for career progression. However, in some cases the certification is valid across institutions, for example in the case of the certifications awarded by the Portuguese Institute of Insurance.

Distance learning has been used in the finance sector for many years, with continuous development of the methodologies and tools a characteristic. The use of distance learning and similar methodologies appeared as a natural need, due to the characteristics of the sector and the target group: it became necessary to develop and implement methodologies and training solutions compatible with the specific characteristics of these target groups (SINFIC, 2006). As the same time, one of the concerns of training providers is to ensure that the courses made at distance have the same credibility for users and the labour market as face-to-face courses. In this context, the methodology used to assess students is relevant and should guarantee that the tests or tasks that compose the evaluation system are actually done by the trainers and reflect work and knowledge about each subject.

Previously the main methodology used in Portugal for distance learning courses involved a computer-based conference system which allowed file exchange, but which had no self-study contents. However, even before the appearance of distance learning and ICT-based training, other distance learning methodologies were used in this sector, such as paper-based content for self-study. Currently, at least three of the providers identified do not provide entirely distance based courses, but instead use a blended learning methodology: this is so for the courses provided by the Institute of Training for Banks (Instituto de Formação Bancária, IFB), the Higher Institute of Bank Management (Instituto Superior de Gestão Bancária, ISGB) and also the Catholic University (a private HE institution). According to IFB and ISGB, distance learning represents 11% of their whole training (including continuous VET, HE and post-HE). However, when it comes to continuous VET, distance learning represents more than 30% of their offer.

Two VET initiatives in this sector in Portugal use distance learning and address the higher qualifications levels:

- (a) Bachelor degree in bank management provided by ISGB: this degree is not always entirely provided at distance, but uses distance learning as a complement to the study. However, for student-workers, the degree can be done almost all at distance. This course benefits from a strong connection to the labour market, for example through partnerships with financial institutions and the frequency of internships. The degree is developed according to the Bologna process and has three year duration. For access, students must have, at a minimum, finished upper secondary school or, they can do entrance exams if they are older than 23 years. This degree is acknowledged by the Chamber of Accountants as adequate for profession of accountancy, revealing another important linkage to the labour market;
- (b) courses developed and customised specifically for banks: these courses are developed by highly specialised private companies, with specific teams dedicated to distance learning content development and course elaboration. The teams work closely with representatives from each bank to develop courses that answer specifically to the needs of each moment. Training providers in the sector claim that the requirements for enrolment are professional experience of the participants or the fact that they work in a certain bank or in a certain department. One general aspect of this type of vocationally oriented training is the short duration of the courses: distance learning courses used by banks usually last 6 to 12 hours, as confirmed by a representative of a Portuguese bank and also by a private company which develops specific distance learning contents and courses for this sector.

However, solutions are being investigated to allow students to attend several short courses and obtain an integrated qualification. A system is being elaborated to allow the integration of these short courses into a curriculum, to include not only VET but also informal learning and other aspects.

There are other examples of courses provided at distance by private training providers but these do not fall into the category of VET defined for this study, since they are of short duration and are oriented to the general public (not exclusively for finance professionals and not exclusively at levels 6 to 8), with the objective of developing specific competences in the financial area. Some examples of themes are: analysis of financial products, accounting, and fiscal consultants.

Cooperation with the labour market in Portugal

The labour market connection is relatively strong in many of the initiatives identified, although they are weaker for the courses provided by HE institutions, especially public universities. There is cooperation occurs with HE institutions but this is more accidental or a consequence of specific circumstances.

One example of linkage to the labour market is the creation and activity of IFB, one of the main training providers in this sector in Portugal. This institute was created by the Portuguese Association of Banks (Associação Portuguesa de Bancos) and is oriented mainly towards the continuous training of professionals and candidates of the banking sector (IFB, 2010). The IFB also incorporates the Higher Institute of Bank Management (ISGB), which is a HE institution integrated in the polytechnic system, able to provide qualifications such as Bachelor and Master degrees. The creation of the IFB emerged directly from the needs of the Portuguese Association of Banks which provides training for professionals in the sector. The IFB has cooperation with similar providers in other countries such as European and African bank institutes and with national and international universities.

Another example of strong connection to the labour market is the cooperation between training providers and the Portuguese Institute of Insurance (Instituto de Seguros de Portugal). According to a specific regulation (Norma Regulamentar N°17/2006-R), in order to be an insurance mediator, each candidate has to be approved in a certified training course. These courses can be held at distance, as long as they comply with a number of requirements and the final evaluation examination is done face-to-face. The institute has a list of training providers who are accredited to provide training in this field.

Cooperation is common in the development of the curricula of the courses, in the development of the contents and in the testing of the distance learning courses.

Education and training providers in the Netherlands

Distance learning for the finance sector is offered by various types of providers:

- (a) Open university: Open Universiteit Nederland (OU) is a public VET provider that offers pure or mixed distance learning courses. During an interview with the provider, it was explained that they have courses at higher levels and the lowest award is offered at EQF level 6. As the university is an open university, it has no specific requirements for students admission. However, for the longer programmes a previous understanding of the material is strongly advisable.
- (b) Netherlands training institute for the banking, insurance and investment business. Netherlands Institut voor het Bank-, Verzekerings- en Effectenbedrijf (NIBE-SVV) is a private VET provider and is the knowledge institute and publisher for Dutch banking, insurance and investment. Additional to the courses the institution offers, which are at HE levels, the organisation also provides various exams such as Wft (*Wet op het financieel toezicht*), publications and conferences for the finance sector. As NIBE-SVV is owned by the main parties of the national financial services industry, they collaborate closely with the main financial institutions in the Netherlands, which provides connections to industry and also continuously updated knowledge of market demand.
- (c) Leiden educational services: Leidse Onderwijsinstelling (LOI) offers more than 500 programmes and is a well-known distance learning VET provider in the Netherlands. LOI is one the first HE institutions to base a significant part of its didactical system on distance learning. As this provider is a private organisation they receive little government financial support and depend on their own revenues.

In the Netherlands, quality control of the VET providers that offer finance related programmes is carried out by the College Deskundigheid Financiële Dienstverlening (CDFD). The CDFD is part of Ministry of Finance and therefore financed by the government; their policy is based on the Financial Supervision Act (*Wet Financiële Toezicht -WFT*). Depending on the outcome of the first audit, a VET provider will be audited again after five years, in the case of private VET providers, and after ten years for public VET providers. Public VET providers can be either training centres or HE institutions. Examination for officially recognised

finance degrees such as the Administrative Accountant (AA) or Registered Accountant (RA) have to be carried out by official institutions such as the Dutch Order of Accountants Administration Consultant (NOVAA) or Royal Dutch Institution of registered Accountants (NIVRA). The Accreditation Organisation of The Netherlands and Flanders (Vlaamse Accreditatieorganisatie, NVAO) is responsible for the quality of all HE, including financial education.

Qualifications and programmes in the Netherlands

In the Netherlands the following qualifications are identified within distance learning in the finance sector: Bachelor (EQF level 6), Master (EQF level 7), short courses around 100 hours that provide a certificate (EQF level 6), long-term courses between one to two years (EQF level 6). Courses at EQF level 8 have not been identified.

The three identified providers offer a range of courses in distance learning in the finance sector. The Open University has a course, named Controlling, lasting two years, and another course, Financial decision making, which lasts one year. After completion of these courses, the student obtains an official degree, e.g. in controlling that is registered at the Official Financial Controlling Register.

The programmes offered by NIBE-SVV are distance-learning and class courses. An interviewee of this organisation stated that they offer several distance learning courses, such as credit insurance, and several mixed programmes that are partly conducted via distance learning, e.g. risk management. The duration of the courses ranges from two to three months up to one and a half years for the longer programmes (around 150 contact hours).

The LOI offers distance learning courses ranging from a variety of EQF levels up to level 8. One interviewee explained that the LOI's finance related courses at EQF levels 6 to 8 include business administration, financial services management, fiscal economics, payroll management, up to accountancy and credit management. Students are working professionals, their courses are provided as distance education (95%) or part-time (5%), and have an average duration of three to six years. The requirements for admission to these courses are equal to admission to regular courses in the Netherlands at the higher professional education level HBO (*Hoger beroepsonderwijs middelbaar beroepsonderwijs*). It is also possible to obtain an official finance title, upon approval in an examination within the specific external exam.

Cooperation with the labour market in the Netherlands

Cooperation between VET providers and labour market stakeholders is driven by constant developments in the finance sector and its related regulations, changes

in requirements for specific professions. The tradition of close collaboration with the main finance institutions enables VET providers to manage the specific needs from the institutions while detecting new needs that require new programmes or additional training. A similar contact exists between VET providers and government institutions to detect new needs and requirements that could justify the development or adjustment of specific VET courses. Private VET providers in particular seek to maximise their revenue by constantly identifying new market opportunities. These providers scan their local markets to identify new niches in which they can offer new or improved programmes with distinctive characteristics. A further link is the specific requests from the major players in the financial sector to providers: larger institutions sometimes contract specific companies to provide them with tailored distance learning solutions. The providers for these large companies tend to be smaller and more IT focused. VET providers collaborate on internships and seminars. For instance, with accountant degrees, the VET provider gives the theoretical input and students have a period of internship afterwards. Then students take an exam at the specific certified institution. VET providers also tend to interact with companies to organise seminars by industry representatives to offer insight into specific matters.

4.4.4. Issues arising from the Portuguese and Dutch cases

In Portugal and the Netherlands a current trend in distance learning is the offer of continuing training by companies to their employees for their required permanent education (PE), which implies, for example, examination of registered accountants every 18 months. In Portugal this links to sectoral regulations requiring certification for specific banking and accountancy activities (e.g. insurance mediator).

In Portugal the adoption of the learning outcomes based approach is being increasingly used by training providers, allowing a more concrete perspective of the content of each course and a more realistic approach to the needs of the labour market. New approaches are being developed to integrate various short training initiatives and recognition of informal competences. However, the process still needs further development and interaction with relevant Portuguese stakeholders in the financial area to validate the elaboration of this model. A methodology is being created to allow, for each short course, a number of credits to be obtained that can accumulate to give equivalence to a post-graduation (EQF level 6), after the approval of a commission designated to evaluate this process.

The following key points were identified through the development of this case study:

- (a) role of regulations: VET initiatives at higher levels both in Portugal and the Netherlands in the finance sector that use distance learning are primarily oriented through the various general policies that apply to the HE system, the VET system and by sectoral policies and regulations of the financial sector. There are no policies that are specifically targeted at distance learning in the finance sector, although some policies and programmes exist, especially in the Netherlands, which target distance learning in general.
- (b) more private providers than public: the Netherlands has a small number of VET providers that are specialised in distance learning courses for the financial sector. However, several public and private institutions offer finance courses, as part of their portfolio. Further, as several large institutions require tailor-made solutions they source much of their distance training material from specific technology and training focused companies. The market is more decentralised in Portugal, and more VET providers offer distance learning courses targeting the finance sector. Almost half of these providers are private companies accredited to provide VET which have specific focus on ICT and development of distance learning contents. In both countries, there is a higher number of private than public training providers, especially for tailor-made solutions for banks.
- (c) profile of the participants: in both countries the student profile seems slightly older than average, as they are very often people that are already working which choose to enrol in further education and training through distance learning. The majority of students study in a part time mode.

4.5. Special educational needs (SEN) in Finland and UK-England

4.5.1. Economic and social context

This case study aims to provide an overview of the special needs teacher training in Finland and UK-England.

There has been growing attention given in England to the needs of certain special needs groups. Also, the perspective of the role of the teachers/educators/trainers has changed, increasingly demanding that teachers are able to meet all the different needs of the public. Special educational need (SEN) teachers in England are specifically employed to work with people who

have SEN. For example, these teachers may work with individuals who are physically disabled, sensory impaired (i.e. deaf/blind), have speech and language difficulties such as dyslexia, have a mental disability such as autism, are emotionally vulnerable, have behavioural difficulties, or a combination of these disabilities (Prospect, 2009).

Anyone entering special needs teaching must be a fully qualified teacher and have several years of work experience. They must take further training besides the specific training that each teacher receives. All those seeking qualified teacher status, by whatever route, must have basic knowledge and skills in SEN and be familiar with the respective code of practice for England. Newly qualified teachers are subject to statutory induction standards when they begin teaching; these include the requirement to plan effectively to meet the needs of pupils with SEN (European Agency for the Development in Special Needs Education, 2010).

England has shown increasing interest in and dedication to the preparation of teaching staff to teach people with special needs, and to provide progression paths to teachers in terms of post degrees and other training offers.

The number of people admitted or transferred into special education entities is increasing in Finland. Currently, over 6% of the total student population in Finland are in special schools and special classes, regarded as possibly the highest percentage in the world (Saloviita, 2009). Finland has as an objective within education to offer qualified special education for people with difficulties. This objective is apparent at the highest levels of government, which emphasises that special needs education has a high priority in the country.

The definition of special needs education is important, as it includes a variety of characteristics, and ranges from severe difficulties to others that can be more easily handled. This challenges teachers and other professionals in the field, and influences the education and training that they require. Aspects of special needs are included in the basic education to become a teacher; however, this is often too general to support teachers when dealing with individuals with special needs. It is thus necessary for teachers to complete further training and education to be specialised within the field.

Education is generally a high priority in Finland, and the country always performs very well in the Programme for International Student Assessment (PISA) survey. Finland can be considered at the forefront of activities and initiatives with regard to education, including special education. All teachers are required to be highly qualified and, with the number of special needs students growing, special needs education programmes are identified within the EQF at levels 6 to 8.

4.5.2. Selected governance patterns

Stakeholders and policies in England

The main bodies responsible for implementing policies related to special needs education are the Department for Children, Schools and Families, and the Department for Education. There is no accepted national definitions for any category of special needs, as the legislation has a relative position and defines students as having SEN if their needs 'are significantly greater' than those of their fellow students (Brown, 2008).

An important and relevant policy that drives SEN is the National SEN specialist standards (December, 1999) ⁽⁹⁾. These act as guidelines for teachers and head teachers to identify training and development needs for teaching pupils with SEN. Another important document is Removing barriers to achievement (February, 2004) ⁽¹⁰⁾, created by the Department for Education and Skills. This states that all teachers should expect to teach children with SEN and all schools should play their part in educating children from their local community, whatever their background or ability. Training for teachers, appropriate funding for schools and improvements in the way their achievements are judged are vital aspects of this document.

Further, the green paper, Every child matters, ⁽¹¹⁾ is a key government policy which includes proposals to provide education, health, and social care for the needs of the child rather than the needs of professionals. It also provided a review of the current and future supply of teachers trained to meet the needs of pupils with severe learning difficulties.

The Education (Teachers) Regulations 1993 require that all teachers of hearing- and visually-impaired classes must obtain a relevant (additional) approved qualification within three years of appointment. The statutory instrument 2008 No 2945, called the Education (Special Educational Needs Coordinators) (England) Regulations 2008, also has a significant impact on the sector: 'A special educational needs coordinator (SENCO) is a teacher who is responsible for SEN within schools. All schools have a SENCO and they work with other teachers and with parents to ensure that the needs of pupils, who are identified as having SEN, are met within the school' (Surrey County Council, 2010).

⁽⁹⁾ <http://www.tda.gov.uk/upload/resources/pdf/n/nat-stand.pdf> [cited 4.5.2010]

⁽¹⁰⁾ <http://publications.education.gov.uk/eOrderingDownload/DfES%20118%20200MIG1996.pdf> [cited 5.5.2010]

⁽¹¹⁾ http://www.sportacrossstaffordshire.co.uk/live/images/cme_resources/Public/Documents/Every-Child-Matters.pdf [cited 24.5.2010]

Stakeholders and policies in Finland

The body that develops and governs the policies on special needs education is the Finnish Ministry of Education and Culture. The Finnish National Board of Education Opetushallitus (FNBE) is a guidance and expert body appointed by the Ministry. The FNBE has a variety of tasks related to the development of education from pre-primary to adult, including VET. The Finnish Ministry of Education and Culture includes a substantial range of bodies such as committees, evaluation councils, and quality assurance and advisory bodies.

Finland has an overall objective to ensure that education should be for all, regardless of any issues including special needs. This objective drives special needs education as resources are needed to develop and maintain programmes and courses for adults and children.

A paper that influences this field is the Development plan (2007-12) of education and research published by the Ministry of Education. This states the objectives and priorities in all education and research matters. In regard to SEN, the plan sets out the priority to enhance the quality of basic and HE to reinforce remedial teaching and special needs education. 'The wellbeing of children and young people will be promoted as part of quality enhancement' (Ministry of Education of Finland, 2008).

Another priority is to ensure that the finance for special needs education and education for disabled children is protected in the future. The Plan states 'Strategic special needs education work by the Ministry of Education in the field of pre-primary and basic education will be used to prepare the necessary legislative amendments to develop administrative procedures for special needs education and to enhance teachers' basic and continuing education' (Ministry of Education of Finland, 2008). The Vocational Education Act (Laki ammatillisesta koulutuksesta 630/1998) states that teachers need to have a higher qualification in SEN to teach students with special needs ⁽¹²⁾.

4.5.3. VET at higher qualification levels in the SEN sector

In 2008-09 there were 99 990 students enrolled in HE teacher training in England. This represented an increase from 97 165 in 2007-08 (Higher Education Statistics Agency, HESA, 2010a). In Finland there were 15 961 students in tertiary teacher training in 2007. A small increase was seen in 2008 with 15 982 students enrolled in that year (Eurostat, 2010db). In 2008, 322 students were enrolled in a Bachelor in education – special education teacher,

⁽¹²⁾ <http://www.edilex.fi/saadokset/smur/19980630> [cited 19.5.2010]

and 53 students enrolled in a Master in education – special education teacher (Statistics Finland, 2010).

Education and training providers in England

The training programmes for special needs teachers in England are provided by public HE institutions (universities and colleges). There are a variety of other continuing professional development (CPD) courses in special education for teachers provided by a range of organisations, including local authorities (LA), independent consultants, HE institution and voluntary agencies such as the Training and Development Agency for Schools (TDA). These are short duration courses (from one day to some weeks), ending with a certificate, and therefore they were not considered in detail for this analysis.

CPD includes all the methods by which teachers and practitioners continue to learn after initial teacher training, to ensure them the ability to support or identify the need for more specialist support within schools and to possess and demonstrate an appropriate level of informed awareness of SEN pupils.

Qualifications and programmes in England

The existing education programmes offered in areas related to training for SEN teachers provide qualifications at EQF level 6 (ordinary Bachelor degree and foundation degree), and at EQF level 7 (graduate and postgraduate diplomas, postgraduate certificate, Master of Science, Master of Education and Master of Teaching).

All education programmes are delivered in a part-time, distance or full-time learning mode. In some cases there is certain flexibility for students with lower qualification levels and/or with insufficient professional experience to engage in these programmes.

In England, there are only certain aspects within SEN for which it is mandatory for teachers to qualify if they would like to work with special needs children and students. However, providers are able to offer whichever courses they like within SEN, which is a complex area, due to the provision freedom and the various areas which falls under the definition of SEN.

The programmes listed in the table demonstrate the great variety and complexity in qualifications offered at higher levels. However, the schemes of funding and provider types are identical.

Table 5. Selection of SEN programmes in England

Name	The Children's Special Educational Needs Foundation Degree	Special Needs and Inclusive Education	Special and Inclusive Education	Special Educational Needs	Specific Learning Difficulties (Dyslexia)
Qualification	Foundation degree (FdA)	Honours Bachelor	Graduate Diploma	Master (MA)	Master (MSc).
Duration	Two years; full time	Two years; full time – available in part time mode	one year; full-time	Two to six years; part-time	one year; full-time
Access requirements	National vocational qualifications (NVQ) level 3, employment in an early years setting or primary school, and a minimum of two years experience.	Usually a minimum of two A2 subjects, and five GCSEs at Grade C. Minimum grade C in General Certificate of Secondary Education (GCSE) English, or equivalent.	Must already have qualified teacher status (QTS)	Based on learning in the workplace, and the knowledge necessary to undertake study at Master's level through the context of their work	The special entry requirements are a first degree, a teaching qualification and a minimum of two years' teaching experience.
Funding Provider	Students must pay fee University				

Qualified teacher status (QTS) is required to become a SEN teacher in England and can be achieved by completing a postgraduate certificate of education (PGCE), a school-centred initial teacher training (SCITT), a Bachelor of Education (BEd) or BA or BSc with QTS. SEN teachers should also be registered with the General Teaching Council (GTC). There is a SEN element in all initial teacher training courses. Access is not possible with a Higher National Diploma ⁽¹³⁾ (HND) only. In England, candidates who have successfully completed two years of HE – someone with an HND would qualify – may opt to take a shortened two-year degree with QTS.

Mature entry into SEN teaching is common as teachers generally have several years' experience before entering the profession of special education. Training takes approximately a year to complete and special education need coordinators (SENCO) will have up to three years from when they are designated as lead SENCO to achieve the qualification. A number of training providers have been approved to offer the national award (Teacher Development Agency, 2009).

The nationally approved SENCO qualification should be validated at Master level, and provide 60 ECTS credits. To achieve the National award for SEN

⁽¹³⁾ This qualification can be used to gain entry into universities, and is considered equivalent to the first two years of a university course.

coordination by the Department for Children Schools and Families (DCSF) teachers should meet all the learning outcomes:

- (a) contributing to strategic development of SEN provision;
- (b) overseeing the operation of the school's SEN policy;
- (c) coordinating provision for pupils with SEN;
- (d) liaising with and advising other teachers;
- (e) managing teaching assistants;
- (f) overseeing the keeping of records for pupils with SEN;
- (g) liaising with parents and careers;
- (h) contributing to the professional development of staff;
- (i) liaising with external agencies (National Standards for Special Educational Needs Coordinators).

In England, one year of professional training is required before specialist training can be performed. Specific training is mandatory for specialist teachers of the deaf and those specialising in working with visually impaired pupils. All other professional development within special needs is not compulsory, but many will still attend accredited courses at degree and diploma level. Almost all special needs teachers will be enrolled in short non-accredited courses and training, offered by, for instance, local authorities (European Agency for the Development in Special Needs Education, 2010).

Education and training providers in Finland

In Finland, the special needs education courses as identified for this study were offered by public HE institutions: there are no private providers identified in Finland. Two different paths can be chosen within the subsector of teaching training in SEN: polytechnics (also referred to as universities of applied science) and universities. This is reflected in the overall HE system consisting of two complementary sectors. SEN courses are offered by five universities of applied science and two universities.

Qualifications and programmes in Finland

The qualification in special needs education in Finland from the universities of applied science is a post graduate course at EQF level 7. However, special needs education is taught both in the Bachelor and Master qualifications at universities as courses and subjects within the teacher qualification.

The main difference between a qualification from the universities of applied science/polytechnics and the universities concerns the age of the SEN students that the teachers can teach after completion of their qualification:

- (a) at the polytechnics, individuals can be enrolled in a qualification of special needs education. This award is only for teachers working in vocational education and training schools and institutions from the age of 16 to adults. The courses last approximately one and a half years and is only offered as part-time, as the students continue to work while they study. The course content varies depending on each university of applied sciences, and the student has the opportunity to create their own study plan. As SEN can cover many areas of needs, the student can focus on more specific topics through this study plan;
- (b) the universities provide the qualification for teacher education concerning pre-school education and comprehensive school between ages 7 to 16, and also specific subject teacher education. Some special education and training is included in basic training, however it is mostly at Master level (EQF 7) that the second stage of teacher training begins within special needs education. The teacher learns how to manage learning difficulties within various subjects such as social psychology studies, field studies in real classrooms, and a practice period under guidance. Also, a research programme that is considered a main part of the teacher preparation can be focused on SEN or other learning difficulties. A class teacher taking a Master degree would be involved in special needs education from several perspectives (Tuovinen, 2008). Some universities also offer distance learning within special needs education, in which the students only need to be at campus a few times per semester. This qualification is at Master level (EQF level 7) as a post degree award.

At the universities of applied science a shift has occurred during recent years away from a medical model of disability towards a more social model. Curriculum and provision of SEN courses are now less influenced by the medical categorisation but more oriented towards social principles (learning environment, individual learner needs, professional growth of teacher trainees, etc.). Modules in SEN teacher education have a more specific focus on the individual needs of students (e.g. autism, psychological problems, dyslexia, and concentration issues) and then the pedagogical support suitable for these students with these needs. Other modules focus more on special needs education planning, administration and consultation. Flexibility is provided through the process that every teacher enrolled in a SEN course should develop and implement a development project in the vocational college or school in which they are employed. The mandatory course in SEN for all teacher trainers offered by universities is included in the basic teacher training qualification.

In regard to access, many of the applicants have a Bachelor level qualification, although some also have a Master. After completing general teacher education (which is also offered by the universities of applied science) and having at least three years of work experience as vocational teachers, students have the ability to apply for the continuing education programme, in which one possible course is SEN. These requirements are related to the universities of applied science.

All universities of applied science have courses described in terms of learning outcomes. The learning outcomes approach has had a positive impact on the education system. It has proven useful for the students and also for the providers, as the assessment and evaluation of the student is more consistent with demands from the labour market. Although it takes a lot of work to describe the programmes in terms of learning outcomes, its positive impact on programmes and beneficiaries makes this work worthwhile.

Cooperation with the labour market

Education providers and employers (typically schools) collaborate a good deal; this is mostly public schools and other public institutions such as hospitals, local authorities, and other SEN initiatives. Students are already working when they apply for the course and they continue to work while being enrolled. The programme has a mandatory part but the general idea is that it should be focused on the area that the students work or intend to work in. There are groups of networks between the students and employers and all reports, theses and papers are developed with regard to the current workplace or employer. Through this process, the universities of applied science ensure that the linkage and content of the courses are as relevant as possible, and meet the need of labour market and students with SEN.

At the time when the SEN course of the universities of applied science was developed and launched in 1997, it was designed in consultation with various stakeholders, including representatives from schools, vocational schools, universities of applied science and other associations. At that time a growing number of schools were beginning to focus on specific areas of special needs. The social partners in teacher training are quite influential, including teacher unions, with particular impact at the level of local municipalities and local political processes (Ministry of Education of Finland, 2008).

4.5.4. Issues emerging from the English and Finnish cases

Both countries start SEN teaching from different premises which might explain the current trends. In England SEN teaching is increasingly formalised as part of

teachers' career development and no longer solely responds to individuals' interest. Many teachers do not feel they have the knowledge and qualifications required to handle and teach SEN children. Currently, the TDA and government authorities in England state that teaching should be a Master level qualification: TDA has introduced Teaching and Learning Master (piloted in 2010). In Finland, SEN teacher training is being internationalised and diversified (increase in the range of subjects within SEN teacher training). Internationalisation means developing strategies to attract foreign students and to increase the competitiveness of the education offer. It has also been reported that is not sufficient to have a subject that covers SEN in general; it should include the possibility to specialise to a higher extent than now.

The following key points are identified from the case study:

- (a) demand for qualifications: the professionals themselves (teachers) seem to be demanding higher qualifications of VET, rather than authorities or the public. This is particularly the case in England, where only some of SEN is regulated by authorities, and other areas are optional. It was also noted that a possible future tendency in Finland would be to provide more courses in the SEN area, as there is a continuing increase in children and adults with special needs;
- (b) need to allow recognition for professional progression: with the new initiative in England to formalise the vocational progression for teachers, it will be easier for teachers working in special needs to obtain better and higher qualifications, that are officially recognised;
- (c) high level of diversity of qualifications and providers: this specifically concerns England, potentially because in England the providers are free to offer the course they want to within SEN. Special needs education is, in both countries, seen as qualification on top of a previous qualification (typically a basic teacher qualification). The only exception to this are the foundation degrees in England, although these are also meant to be continuing training and education within SEN;
- (d) continuing professional development: in England, CPD is important for progression and continuing learning at higher levels. It is offered in many areas other than SEN and local authorities influence CPD, both as providers and the developer of courses. Universities offer some, although relatively few, CPD courses.

4.6. Technology and innovation management in Germany and Ireland

4.6.1. Economic and social context

This case study aims to provide an overview of the education and training initiatives at higher qualification levels in technology and innovation management in Germany and Ireland. Technology and innovation management courses are designed to enable current or future managers to run businesses or departments to respond to the demands of the market for improved products and services. These training programmes also help technical specialists to promote innovation as well as to manage the launch of new products and services. They help individuals with technical background to develop or upgrade their business knowledge and management competence.

Such programmes are very important in Ireland, especially in the light of the recently released strategy of the Irish government according to which 'by 2020 Ireland will be an Innovation Hub with a significant number of large, world leading, innovation-intensive companies' (Cliath et al., 2010). The appointment of a Minister for Science, Technology, and Innovation at the Department of Enterprise, Trade and Employment and the Department of Education and Science in 2008 also shows the determination of Ireland to become a leader in innovation. Education and training in technology and innovation management have key relevance in this context and contribute to a better innovation performance of businesses based in the country (Department of Enterprise, Trade & Employment, 2008).

Germany is a leading country in innovation in Europe, spending 2.6% of its GDP on R&D (Federal Ministry of Economics and Technology–BMW, 2010), higher than average for industrialised nations. It has a clear strategy to boost technological development and innovation nationwide, with plans to channel further funding for education, research and innovation. One of the main objectives of the Federal Ministry of Economics and Technology is to improve the innovation capacity of small and medium-sized companies and to bring research organisations closer to enterprises. It is also recognised that highly-skilled professionals are indispensable in successful innovation policy. Efforts are being made, therefore, to involve more young people in further training or studies in specific fields, including technology (Federal Ministry of Education and Research–BMBWF, 2009).

4.6.2. Selected governance patterns

Stakeholders and policies in Germany

In Germany, higher level innovation and technology management education is provided within the framework of HE and overseen by the federal states (*Länder*), most specifically by the responsible ministries of each state (Eurydice, 2009a).

While no innovation and technology management programmes delivered by non-HE organisations were identified at EQF levels 6 to 8, such organisations offer higher level courses in business and management areas. These include the professional or vocational academies or universities of cooperative education (*Berufsakademie*) that exist in some federal states and that are also governed at a state level. Historically, the professional academies offered an alternative to HE studies but with more vocational nature. Professional academies implement the dual apprenticeship system.

Innovation policies in Germany are defined by both the central government and the governments of the federal states. The central government defines the main strategic orientations and policies, which are then applied by each federal state, according to local and regional needs and territorial realities.

The German Federal report on research and innovation 2010, elaborated by the Ministry of Education and Research and the Ministry for the Economy and Technology, includes the main recommendations and orientations related to innovation and R&D activities. It covers all main sectors of society including education, with the aim of improving the German economy and boosting the competitiveness of German companies. A number of innovation and education initiatives have been implemented by the central government in recent years, including the following:

- (a) the Excellence initiative: deepening cooperation between research institutions and companies;
- (b) the Higher education pact: running until 2020 and aiming to restructure the German HE system by providing more than 275 000 new university entrants the opportunity to develop studies;
- (c) the Joint initiative for research and education: increasing funding to research (Federal Ministry of Education and Research–BMBF, 2010a).

Although there is a clear strategy and a number of initiatives, no specific policies were identified that directly contribute to training and education programmes. However, previously elaborated studies by a number of economic research organisations, for example the Ifo Institute for Economic Research and the CESifo GmbH in Munich, stress the need to focus on innovation management. Also, the Bavarian State Ministry of Sciences, Research and the

Arts has a technology strategy that influences the provision of Master programmes in the region, including the Intercultural business and technology management master course of the Amberg-Weiden University of Applied Sciences.

Stakeholders and policies in Ireland

HE institutions provide technology and innovation management programmes at higher qualification levels. The major bodies responsible for policy making in HE include the Higher Education Authority (HEA), which provides HE statutory planning and policy development activities (Higher Education Authority – HEA, 2010a), and the Department of Education and Skills, responsible for policy development and implementation (Department of Education and Skills, 2010). In the second half of the 1990s and early 2000s, much attention was paid in Ireland to the need to increase the business and technological capacities of Irish firms. Based on the 1996 White Paper on Science, Technology and Innovation and the findings of the Technology Foresights of the Irish Council for Science, Technology and Innovation, funds were channelled for research and the education of research-trained people with higher degrees.

Programmes include the Operational programme for industry in the 1990s, which had a science and technology (S&T) subprogramme, or the Irish innovation management initiative during the 2000s focused on improving the R&D infrastructure and capacity in Ireland. This latter programme aimed to increase the number of companies with R&D activities and to improve innovation and R&D performance. A number of training courses were implemented in the R&D area under this initiative, including training programmes in innovation and technology management. Also, through this initiative a selection of new technology and innovation courses were launched and supported at higher qualification levels. All manufacturing and internationally traded services companies in Ireland were eligible to receive 50% of the course fees funded through this programme (Lyes, 2002). The Strategic innovation fund (SIF) was established for the period of 2006-13 with a budget of EUR 510 million. This fund supports innovation in HE institutions. 'Projects approved to date under SIF are aimed at enhancing collaboration between HE institution, improving teaching and learning, supporting institutional reform, promoting access and lifelong learning and supporting the development of fourth level education' (Higher Education Authority – HEA, 2010b).

One of the major current policies that drives innovation and technology management education and training in Ireland is the Strategy for science, technology and innovation 2006-13 published by the Department of Enterprise,

Trade and Innovation (Department of Enterprise, Trade and Innovation, 2006). This document defines the roadmap to developing a knowledge based society in Ireland, including the concrete steps to take to establish a world class research system. It also clearly states that the competence and experience of the company staff members in the technological area is critical to developing a research and development strategy. Technology management courses are available to train skilled employees for this purpose.

Skillnets is another relevant initiative in this context. It is an enterprise-led support body established in 1999 and funded by the Department of Enterprise, Trade and Employment from the resources of the National training fund. It aims to support companies of all sectors to become involved in training (Skillnets, 2010). Skillnets is composed of a group of enterprises that collaborate to develop and implement industry training programmes. The cooperation of the companies of ICT Ireland Skillnet (one of the learning networks of Skillnets) has resulted in a higher qualification level education programme in technology and innovation management through the collaboration with the Dublin Institute of Technology (DIT).

4.6.3. VET at higher qualification levels in the sector

In Germany, students of innovation and technology management programmes are often graduates in engineering, natural sciences, computing or economic sciences. Frequently, especially in the Master courses, some professional experience is required, which can include internships.

In Ireland the majority of part-time and distance learning students are already active in the labour market. Often they are between 30 and 35 years old with some technological or business backgrounds. They work as mid-managers or area managers, technical specialists, engineers or those responsible for managing technologies; or they are active in areas of innovation, manufacturing or service systems, marketing and others engaged in the design and commercialisation of new products, processes or intellectual property. Through their studies in technology and innovation management, they expect to gain knowledge and skills to take up on new, higher position roles in their companies.

Education and training providers in Germany

As in Ireland, innovation and technology management education at higher levels is delivered by HE providers. Non-HE organisations (training academies of the chambers of Commerce and Industry, private companies) also offer innovation management training programmes which were not considered in the case study due to being short programmes and generally not requiring any previous

qualifications. No continuing training courses were found to be delivered by HE organisations in the areas studied.

The higher level programmes in this area are delivered by 24 organisations, of which 19 are universities or technical universities (three of which are private universities), 13 are universities of applied sciences, one is a branch of a foreign university providing access to a distance learning Master course in Technology Management and one is a private non-profit institute established by a German technical university. One of the three private universities is a purely industry initiative.

Qualifications and programmes in Germany

The programmes offered in innovation and technology management (some are joint courses between institutions) lead to Bachelor and Master degrees. Around 75% of all programmes award a Master qualification, out of which there are MBA courses and also a joint European Master programme. Bachelor degrees include Bachelor of Science and Engineering qualifications. Two of the programmes analysed are not strictly within innovation and technology management areas but are management courses with some technology focus and were chosen to be included in the case study for their corporate nature (provided on the initiative of companies).

Programmes are delivered both full-time and part-time. A modular approach is common to these education programmes. Access requirements frequently include the preceding level of qualification (for Bachelor courses the HE entrance qualification, or those that do not have this qualification can perform an entrance examination), aptitude tests and sometimes work experience. A general framework for access requirements is determined at federal level and specific requirements at *Länder* level. New Bavarian government legislation permits the universities to admit students to Bachelor programmes without the correct former qualification if the student has completed an apprenticeship of at least two years and afterwards worked for a minimum of three years. The area of apprenticeship and job has to be similar to the study area. There is no specific teaching staff qualification requirement and lecturing by employer organisation representatives is very common. State or state-recognised Bachelor and Master study programmes provided by HE institutions are accredited by independent agencies that are themselves accredited by the German Accreditation Council. The accreditation of the study programmes has to be renewed regularly.

Cooperation with the labour market in Germany

Industry in Germany has a major role in the delivery of innovation and technology management programmes. The providers of such programmes regularly collaborate with local enterprises and maintain permanent industry networks. Therefore, it can be said that there is a strong interaction between HE and industry at a local/regional level. Typical industry-academic collaboration includes the development of project work for companies, which are real cases and bring benefits for these entities, or theses in cooperation with companies. Lecturers are also frequently taken from industry and, in some cases, students do traineeships at the partner companies.

Collaborations are started at the initiative of both academia and industry. It is not uncommon for enterprises to approach education and training providers with possible project works to be carried out by students. Some companies provide scholarships covering tuition, fees and accommodation for students and, in some cases, they also provide inputs into the programme curriculum, allowing adaptation to local industry needs. In one case, German industry leaders (including Deutsche Bank, Siemens, Daimler Chrysler, Allianz, and Lufthansa) recognised the need to promote technology as a source of competitive advantage, and established a business school in Germany with European focus, called the European School of Management and Technology (European School of Management and Technology – ESMT, 2010). This is a fully private sector initiative offering MBA and executive education programmes focusing on technology and management fields. The founding firms and other associated companies have a significant influence on the content of the courses. Further, the skills that students acquire during the courses are regularly reviewed by representatives of the companies, as these are most likely to be the potential employers of the graduates. The courses have a strong practical nature, including company-based project assignments, company mentoring and lecturers from management. A similar institute, the Stuttgart Institute of Management and Technology (SIMT), which offers postgraduate programmes, was also established on the initiative of firms with headquarters in the same geographical area, although the management of the school is under the umbrella of the Steinbeis University of Berlin (Stuttgart Institute of Management and Technology – SIMT, 2010).

Education and training providers in Ireland

Technology and innovation management training in Ireland is provided by HE institutions (universities, institutes of technology and a college). Two of the 12 education providers are private. It is also possible for a private or public non-HE provider to deliver educational courses at EQF levels 6 to 8 by obtaining

accreditation from the Higher Education and Training Awards Council (HETAC). The research found no non-HE organisations in Ireland that deliver innovation and technology management programmes at higher qualification levels.

Qualifications and programmes in Ireland

Existing education programmes offered in areas related to innovation and technology management lead to qualifications at EQF level 6 (ordinary Bachelor degree, honours Bachelor degree) and EQF level 7 (Postgraduate diploma, Master of Science, Master of Business Administration, Postgraduate certificate).

With one exception, education programmes are delivered in a part-time, distance or blended learning regime, or offer this option as an alternative for working students. There is a tendency to break down programmes into smaller sections. In many cases a Master programme would have a postgraduate diploma or certificate level alternative with a shorter duration for those that do not wish to take a longer course.

Modules are expressed in learning outcomes, identifying the skills, competences and knowledge each student acquires. The learning outcomes approach is particularly beneficial, as it helps students realise that education programmes are not just about 'information but they help make knowledge real in the world of work' (interviews). Employers are also very interested in competences and they prefer to know what their future employees 'can do and not what they know' (interviews). While the learning outcomes approach also allows comparison between programmes and enables employers to 'assess how these contribute to their organisations', it was also critically questioned.

Usually the access requirement for programmes is the preceding qualification level. In part-time or distance learning programmes, industry experience of one to five years is also often required. In most of the cases there is certain flexibility for students with lower qualification levels and/or insufficient professional experience to engage in these programmes. The options include initiating the specific study without the required qualification and obtaining the final qualification of that course with good performance; in case of lower performance that student would finish the study earlier and obtain a minor award at the same qualification level. Another solution is that students, who do not meet the qualification criterion to get on an EQF level 7 programme, take on a shorter programme that provides them with an EQF 6 qualification. This allows them to continue on EQF level 7. Frequently, professional experience is a decisive factor at the admission phase. Extensive industry experience would be taken into consideration in many cases when the entry requirement is not met, allowing

recognition of prior learning through work to be considered at the admission phase.

Cooperation with the labour market in Ireland

Technology and innovation management education programmes are often policy driven, or at least national policies play an important role in their initiation. Forfás plays a significant part: this is the national advisory body for enterprise and science, contributing to education and training strategies (Forfás, 2010). As an agency of the Department of Enterprise, Trade and Employment, Forfás publishes technology foresights and reviews that influence government actions and education and training providers in addressing labour market skill needs.

At end of the 1990s and early 2000s, Irish innovation strategies emphasised increasing innovation capacity and R&D performance in Irish enterprises. This contributed significantly to the launch of new education initiatives in innovation and technological management areas. Developing new education and training programmes usually starts with consultation on programme structure and content to ensure that the curricula of these initiatives are adjusted to local industry needs. This generally involves setting up a consultation body or committee of enterprises or through implementing a survey, questionnaires or discussions with industry representatives. In one case, the Master of Science in Technology and Innovation Management of the Dublin Institute of Technology, the programme was initiated solely by a group of ICT companies belonging to ICT Ireland Skillnets. These companies also had direct input into programme content and on other aspects such as the evaluation system and assignments to be carried out by students. In some cases companies also have a role in the regular reviews of these programmes.

In the majority of the cases analysed, especially in part-time or distance learning courses, students are in employment and carry out assignments throughout the programmes that bring a measurable benefit to their companies. These assignments can be work-based projects or a final dissertation done in companies. Often, company representatives actively participate in delivering the courses, particularly through giving specific modules.

4.6.4. Issues arising from the German and Irish cases

In Germany, universities frequently cooperate in offering Master courses, and the number of private providers is growing. There is also an increasingly vocational orientation in the system, aiming to combine theoretical studies with vocational/on-the-job training, as well as an increase of part-time programmes that allow students to be in employment during their studies. The changes also

concern progression within the education system and initiatives for modularisation (especially in continuing education) such as the initiative for Accreditation of prior (certified) learning from VET for HE (ANKOM) or the expected support to establish the criteria for modularisation, structuring, accreditation and certification of academic continuing education programmes (Federal Ministry of Education and Research–BMBF, 2010b). In Ireland, the recent focus on technology management and new product design has partly moved to other educational areas, probably due to the recession. These new areas are related to streamlining and efficiency in companies.

The following key points have been identified:

- (a) accreditation: in Germany the state or state-recognised Bachelor and Master study programmes provided by HE institutions are accredited by independent agencies that are certified by the German Accreditation Council. Accreditation of the study programmes must be regularly renewed. In Ireland, the education programmes provided at EQF levels 6 to 8 are accredited by HETAC.
- (b) importance of policy: especially in Ireland, the initiation of technology and innovation management education programmes has been strongly influenced by national policies. In Germany this influence was noted at regional level, as observed in the case of the Bavarian state.

strong element of cooperation with economic actors: both in Germany and Ireland there is significant collaboration between enterprises and education providers through the education programmes at EQF levels 6 to 8 in innovation and technology management. This is seen in the development of project work for companies by students, industry lecturers, traineeships in companies, and industry input into the content of the education programmes.

CHAPTER 5

Conclusions

This research paper aims at improving the understanding of vocationally oriented education and training, describing the rationales, characteristics and future development of vocational education and training at higher qualifications levels. The understanding of VET at higher qualifications levels differs among policy-makers and sector stakeholders in education and training systems and in the labour market; it also differs within and between countries.

Framework to VET at higher qualification levels

The definition in use did not contribute to greater clarity since terms such as vocation, occupation or profession are sometimes used as synonyms. Given the diverse national education and policy contexts, and the diversity in recent national tertiary level VET developments, it is not possible to formulate a full definition that satisfactorily covers all elements of tertiary level VET practice in Europe. This led to analysis of VET at higher qualifications levels by considering different dimensions such as policy-making and practices, providers and qualifications and the involvement of labour market stakeholders.

A variety of policymaking organisations were identified for VET provision at higher qualification levels. The major policymaker in almost all countries studied is the Ministry of Education (e.g. the Ministry of Education and Culture in Finland, the Ministry of Science and Higher Education in Poland, Ministry of Education in Norway). In some countries, policymaking roles are shared between institutions (e.g. in France the Ministry of Education is responsible for HE and the Ministry of Labour, Employment and Vocational Training is responsible for vocational training; in Denmark the Ministry of Science, Technology and Innovation is in charge of all HE initiatives and policies above EQF level 5 but the Ministry of Agriculture and Fisheries also has an important role within agriculture education). Non-ministerial bodies also play an important role in formulating policies. These include sectoral organisations (e.g. the Nursing Board in Norway or the Nursing and Midwifery Council in UK-England), as well as industry associations (e.g. BITKOM in Germany), chambers of commerce and trade unions (e.g. IG Metall in Germany).

There is substantial variety and diversity of VET policies and practices at tertiary/higher education levels in Europe. The national traditions, contexts and trends determine how VET at higher levels is defined, and if it is recognised as a separate policy issue at all. Unlike the situation at the (upper) secondary education level, the countries involved in this study, with the exception of Germany, do not have a dual system consisting of VET and general/academic education at tertiary education levels. The main underlying reason for this is that while general academic education programmes at the (upper) secondary education level do not prepare students for a vocation or profession (but instead prepare them for entrance in tertiary education programmes), in academic/general higher education a large number of programmes prepare their students for a specific profession: law, medicine, engineering, and business administration are examples.

The policy understanding of VET at tertiary levels can be characterised as follows in the 13 involved countries:

- (a) dual system: Germany;
- (b) integrated system of certification and recognition: Ireland, France, UK-England;
- (c) tertiary VET part of higher education policies:
 - (i) higher professional education and university education increasingly integrated: Norway;
 - (ii) higher professional education and university education kept separate: Czech Republic, Denmark, , the Netherlands, Finland;
- (d) policy emphasis on academic tertiary education: Greece, Poland;
- (e) no explicit focus on VET at tertiary education levels: Portugal, Romania.

In policy practices it is difficult to distinguish between higher professional education programmes (including professional programmes offered by universities) and tertiary level VET programmes and courses, since there is no rational ground for arguing that, for example, university engineering programmes are not regarded as VET, while tertiary ICT programmes either offered by public higher professional education institutions or private providers, are regarded as VET.

The main providers of VET programmes at higher qualifications levels in the countries and segments analysed are public HE institutions. In addition to universities, these include business academies in Denmark in agriculture education, public colleges in Norway in nursing, universities of applied sciences and universities of cooperative education in Germany, polytechnics in Finland, and university based professional institutes in France. There is also considerable private HE (e.g. in Poland in the ICT sector or private colleges in Norway with

religious components) or emerging private HE (e.g. Germany and France) in some countries. Other providers include private companies (e.g. in the ICT sector in Germany, finance sector in the Netherlands and Portugal), chambers of commerce and crafts (e.g. Germany) and other non-sector or sector specific non-HE institution providers (e.g. the Netherlands and Portugal in the finance sector).

The involvement of labour market stakeholders in education and training provision at higher levels was found to be common in almost all countries. The exceptions were Poland, in which the links between academic and employers are generally weak, although the picture was better in the ICT sector, and Portugal in the case of public HE institutions. Diverse types of interaction between providers of education and training and employers were found:

- (a) employer consultation in the curriculum development phase. Examples include L&F and 3F in Denmark (representing employers and employees) and industry committees and consultation bodies in Ireland;
- (b) work-based assignments and company based thesis works. Examples are found in Germany and Ireland in innovation and technology management, and in Finland and UK-England in SEN study programmes;
- (c) apprenticeships, which are a growing tendency in HE in France, the Netherlands in the framework of the accountant degrees. As for Norway and UK-England in the nursing sector clinical practice is a traditional pattern;
- (d) private corporate education and training initiatives which include examples in Germany and Ireland in innovation and technology management, and in Portugal in the finance sector;
- (e) courses tailored to company needs, for instance in the Netherlands in the finance sector and Ireland in innovation and technology management;
- (f) fully work-based learning in the German IT further education system.

There are a number of countries in which there is resistance towards opening up more extensive interaction with labour market players (e.g. the case of universities in Poland, in Romania it mostly exists in theory) or where interaction hardly exists such as in the Czech Republic and Portugal.

Qualifications, degrees and study programmes tend to be delivered at EQF levels 6 and 7 in the form of classical Bachelor and Master qualifications, although in Norway there are also EQF level 8 PhD degrees in nursing science. There is also an increase in other degrees (e.g. professional Bachelor degrees in Denmark and France, professional Master courses in France). There are also different types of HE degrees. For instance, the diploma courses, foundation courses and postgraduate certificates in UK-England. Further, there are specific non-HE certificates (e.g. a certificate at EQF level 6 in the finance sector in Portugal, and strategic and operative professional qualifications in the IT sector in

Germany). The discussion on academically and vocationally oriented degrees in education and training systems is still vivid in Europe, with some strong divisions between the two. For instance, in Denmark professional Bachelor degrees are not equal to the traditional Bachelor degrees, and therefore do not provide progression to formal Master courses. There have been efforts to improve this situation with the new EUX exam to bridge the gap between vocational and academic worlds. Also, in Germany, steps have been taken to reduce the divide between VET and academically oriented HE by recognising parts of ICT further training in university ICT studies. There is a tendency towards a vocationalisation of HE as in development of the vocational Bachelor qualifications in France, and combining theoretical studies with vocational/on-the-job training in Germany. The opposite tendency, academisation, can be detected in other countries, e.g. in Norway nursing education is becoming part of HE and there is an expected evolution of specialisation courses into Master programmes, and in UK-England there will be a degree requirement for all nurses from 2013. The emergence of private sector providers at higher levels can also be identified in some countries, including Germany, Ireland and France.

Quality assurance is provided in different forms in the various countries. There are independent sectoral quality assurance bodies that approve study programmes (e.g. CTI in France for engineering courses) and agencies for the quality assurance in HE (e.g. NOKUT in Norway, HETAC in Ireland for non-university organisations, State Accreditation Committee in Poland, Quality Assurance Agency for Higher Education in UK-England, etc.). Other types semi-public entities also participate in this process by reviewing existing and approving new programmes (e.g. vocational committee in Denmark), as well as other professional bodies (e.g. the Nursing and Midwifery Council in that also does the registration of nurses, or the Royal Dutch Institution of Registered Accountants staging examinations in the Netherlands in the case of the officially recognised finance degrees). Other organisations include chambers of commerce and industry through student examinations (e.g. in Germany in case of some further education programmes), independent accreditation agencies (in the case of state-recognised Bachelor and Master programmes in Germany) and universities that have self-accreditation power (e.g. in Ireland).

A new approach to parity of esteem

The first set of dimensions had to be contrasted with existing definitions and deeper analysis of characteristics of qualifications offered at higher levels. The

research paper suggests a new approach to parity of esteem between VET at higher qualification levels and traditional HE which is much inspired by the learning outcomes approach to qualifications, the value of professional experience in degree awards and the criteria of employability of graduates. Important to parity of esteem between VET and HE are the national legal frameworks and regulations, and the level of autonomy of universities in determining the entrance requirements for their degree programmes. If all countries are committed to realising parity of esteem between VET and HE qualifications, one of the conditions required to be fulfilled is the updating of national or regional laws to determine entrance requirements for university programmes.

Professional experience is highly valued and required in VET at higher levels in some countries. These include Norway, in which some continuous specialisation courses require professional experience in addition to a Bachelor degree, or in Portugal, for finance sector courses in the private sector provided by private companies. In Ireland, most public HE institutions in innovation and technology management programmes require some years of work experience, which in specific cases can be considered to replace other qualifications if the candidate does not match all the admission requirements. In nursing in UK-England, prior learning, both practical and theoretical, can be used to reduce study time by as much as one of the three years of the programme and each university evaluates prior learning individually. In two out of the three education programmes analysed for France, professional experience is considered and evaluated individually at the enrolment stage. This is so in one of the study programmes in Denmark.

The introduction of qualifications frameworks represents a shift to learning outcomes, including at the highest levels, in the sense that the skills, competences and knowledge levels of graduates are made explicit in each programme's description and organisation. In this way students will understand the expected learning outcomes. Further, society at large, including potential employers of the students, can obtain an insight into their expected capabilities. The analysis shows that there is a generally positive attitude towards the shift to learning outcomes. In practice, however, the process is still in an early stage and not all stakeholders had the same positive expectations towards the alignment to the EQF and the use of learning outcomes; examples are the Danish agriculture education case study and trade union opinions of deprofessionalisation in Germany.

The use of the learning outcomes approach is still in its early stages in most countries. Stakeholders have generally positive expectations, although this is not

always the case (e.g. in the Danish agro-food case study the expectations were not positive). In Germany and UK-England the need for public discussion on implementing the learning outcomes approach and the involvement of a variety of educational institutions and social actors was considered important. There are a number of different trends with regard to education providers' implementation of the required reforms. Many involve deeper institutional reforms and take this as an opportunity to improve their systems and activities, while some have addressed the changes in a more superficial way. In some cases, the reforms are reduced to 'mere cosmetic surgery' (Reichert, 2010). It is early to say whether the new approach will bring the desired benefits. The next 5 to 10 years will determine whether learning outcomes will actually be used in a meaningful way in educational practices as well as by employers. It can thus be recommended to set up a European monitoring database to follow and assess further developments with respect to the use of learning outcomes in VET activities at EQF levels 6 to 8.

The issue of parity of esteem between VET at EQF levels 6 to 8 and traditional HE is complex and to some extent controversial. In the German case, EQF implementation led initially to a system in which the VET qualifications were positioned lower than the HE qualifications. Under pressure from private sector representatives in the latest proposal, some VET qualifications were then upgraded to the level of HE qualifications. However, at the same time, education pillars were introduced in the German QF system, implying that, a Meister level qualification (which is at the same level of a Bachelor qualification) does not give access to a university Master programme.

In Denmark or Finland, VET (and even higher professional education) Bachelor degrees do not give direct access to university Master programmes. If this tendency of educational pillars in NQFs is implemented in more countries, then the notion of parity of esteem between VET and HE would be mostly an illusion. However, there are also positive experiences. In the Irish system, in which there is an NQF developed, some convergence between VET at EQF levels 6 to 8 and traditional HE can be observed due to the use of a learning outcomes approach. The shift, however, seems to be more in the vocational direction responding to the increasing need to demonstrate practical skills.

While scepticism prevails over whether the shift to learning outcomes would positively impact the parity of esteem between vocationally oriented and academically oriented study programmes at higher qualification levels, there is some conviction that the shift to learning outcomes will actually increase the value of vocationally oriented programmes in comparison with academically oriented ones. As most countries are still in the implementation phase of this

approach, there is little evidence on its actual impact on VET developments at EQF levels 6 to 8, including the question of parity of esteem.

Taking the issue forward

Vocational education and training, and professional higher education, are very dynamic in Europe. New VET programme providers at EQF levels 6 to 8, and traditional HE institutions providing higher professional education programmes, are central to the European efforts on employability and economic growth. The last five to ten years have shown important developments in both types of programme. The impression is that traditional HE is not adapting rapidly enough to the (changing) needs of the labour market (e.g. the Czech Republic, Poland, Portugal, and Romania), and especially the needs of the private sector. VET can fill part of the gap left by traditional HE institutions. However, this requires rapid development of new fields, including ICT. The situation in more traditional vocational/professional fields such as nursing, teaching, and agriculture is more balanced in the sense that the relationship between VET /professional higher education providers and the labour market is more stable, and based on common understandings and agreements between employers and providers.

The analysis undertaken led to four main proposals for research and policy initiatives:

- (a) to set up European level coordination of VET policies and practices for tertiary education. The coordination should be both vertical and horizontal and relate to current development of joint activities between the Bologna and Copenhagen processes;
- (b) to develop a widely accepted understanding of VET at EQF levels 6 to 8; it is important to create more transparency of qualifications, which itself calls for a need to clarify the specific nature of VET at tertiary education levels. The questions to be answered for this include:
 - (i) how and where is VET at higher levels different from the established higher professional education programmes?
 - (ii) how do the targeted skills, competences and knowledge levels of VET of higher level graduates differ from the targeted skills, competences and knowledge levels of traditional higher education graduates?
 - (iii) if there are important differences in the targeted skills, competences and knowledge in traditional academic higher education and tertiary level VET, what do these mean for the possibilities to achieve parity of esteem of qualifications and learning outcomes?

- (iv) if the differences are considered to be limited, or of limited relevance from the perspective of the development of effective knowledge policies that include tertiary level VET, what is the rationale for treating tertiary level VET as a separate policy area?
- (c) to develop regulatory and funding frameworks for VET at higher levels and professional higher education that relate to the dynamics of education and training. Further, such frameworks should stimulate sector transparency, so that the equal treatment of all vocational and professional fields is prevented. More mature fields such as nursing and agriculture need different frameworks from rapidly developing fields such as ICT;
- (d) to share successful examples and practices for VET and labour market interaction in Europe. These practices should be shared between countries and their potentials examined for adoption and adaptation to other national education environments where such mechanisms are scarce or non-existent, or even to those where cooperation models already exist.

Working definitions

Term	Working Definition	Source
Competences	The ability to apply learning outcomes adequately in defined context (education, work, personal, or professional development)	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
Continuing education/Further education	Education and training after initial education and training or after entry into working life aimed at helping individuals to: <ul style="list-style-type: none"> - improve or update their knowledge and or skills - acquire new skills for a career move or retraining - continue their personal or professional development. 	Cedefop – Terminology of European education and training policy – A selection of 100 key terms’ (2008a)
Corporate universities	A Corporate university (also known as an academy, institute, learning centre or college) is an organisational entity dedicated to turning business-led learning into action. It is designed, driven and intricately linked to the company’s business strategy with the aim of achieving corporate excellence through improved staff performance and a company-wide culture in which innovation can thrive.	An overview of corporate universities, European Commission UANET (The European corporate Universities and Academies Network year), 2006
Curriculum	The inventory of activities implemented to design, organise, and plan an education or training action, including the definition of learning objectives, contents, methods (including assessment), and materials, as well as training teachers and trainers.	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
EQF levels 6 to 8	EQF levels 6 to 8 correspond to the highest levels of education on the European Qualifications Framework (6 – Bachelors, 7 – Master and 8 – doctorate) as defined within the European Higher Education Area, or to highly specialised professional qualifications.	Working definition elaborated for this study
Formal learning	Learning that occurs in an organised and structured environment (e.g. in an education or training institution or on the job) and is explicitly designated as learning (in terms of objectives, time or resources). Formal learning is intentional from the learner’s point of view. It typically leads to validation and certification.	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
Higher Education	Education beyond the secondary level, especially education provided by a college or university	Merriam-Webster dictionary
Informal learning	Learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support.	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
Learning outcomes	Statements of what a learner knows, understands and is able to do on completion of a learning process defined in terms of knowledge, skills and competence.	EQF Recommendation

Term	Working Definition	Source
Lifelong learning	All learning activity undertaken throughout life, which results in improving knowledge, know-how, skills, competences and or qualifications for personal, social and professional reasons.	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
National qualifications framework	An instrument for the development and classification of qualifications (e.g. at national or sectoral level) according to a set of criteria (e.g. using descriptors) applicable to specific levels of learning outcomes.	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
Non-university higher education	Institutions that are considered part of higher education but are not universities	Working definition elaborated for this study
Non-HE vocationally oriented education and training	Organisations that are not considered part of higher education and offer course and study programmes that are vocational-oriented. Definition of vocationally oriented or vocational-oriented education and training, please see working definitions below.	Working definition elaborated for this study
Post-secondary non-tertiary level	Post-secondary non-tertiary education straddles the boundary between upper secondary and post-secondary education from an international point of view, even though it might clearly be considered upper secondary or post-secondary in a national context. Although their content may not be significantly more advanced than upper secondary programmes, they serve to broaden the knowledge of participants who have already gained an upper secondary qualification. The students tend to be older than those enrolled at the upper secondary level.	Education at a Glance, OECD, Paris, 2002, Glossary
Professional education	Preparation for a profession that requires specialised knowledge within a profession or vocation. Very often leads directly to an exact profession or work.	Working definition elaborated for this study
Qualification	Educational qualifications are the degrees, diplomas, certificates, professional titles and so forth that an individual has acquired whether by full-time study, part-time study or private study, whether conferred in the home country or abroad, and whether conferred by educational authorities, special examining bodies or professional bodies.	European Commission and Principles and recommendations for Population and Housing Censuses, Revision 1, United Nations, New York, 1998, para. 2.164.
Recognised qualification	Recognised qualification, i.e. a qualification that is formally accepted to provide access to a specific vocation/profession.	Working definition elaborated for this study
Recognition of prior learning	Accreditation of learning (informal/formal) which the individual has obtained in the past.	Working definition elaborated for this study
Short programmes	Short programmes refer to study programmes which have a reduced duration. Generally these courses do not lead to a recognised qualification.	Working definition elaborated for this study
Social partners	Employers’ associations and trade unions forming the two sides of a social dialogue.	Cedefop – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)

Term	Working Definition	Source
Tertiary level	Tertiary-type A programmes (ISCED 5A) are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Tertiary-type B programmes (ISCED 5B) are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes.	Education at a Glance, OECD, Paris, 2002, Glossary
Upper secondary level	Upper secondary education (ISCED 3) corresponds to the final stage of secondary education in most European Commission countries.	Education at a Glance, OECD, Paris, 2002, Glossary
Vocational education and training	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 – Terminology of European education and training policy – ‘A selection of 100 key terms’ (2008a)
Vocationally oriented or vocational-oriented education and training	Education and training that contains aspects of both academic and vocational areas. Typically with the majority of vocational aspects.	Working definition elaborated for this study

List of abbreviations

AA	Administrative Accountant
ACVETS	Advanced standing, credit, and recognition of prior learning
ACPART	National Agency for Qualifications in Higher Education
AD	Associate degree
AITTS	Advanced IT training system
AMK	ammattikorkeakoulu – Finnish universities of applied sciences
ANKOM	<i>Anrechnung beruflicher Kompetenzen auf Hochschulstudiengänge</i> – Accreditation of Prior (Certified) Learning from VET for HE
APO	APO – <i>Arbeitsprozessorientierte Weiterbildung in der IT-Branche</i> – Project called work process training in the IT sector
BA	Bachelor of Arts
BA	Bundesagentur für Arbeit – Federal Agency for Employment
BEEd	Bachelor of Education
BIBB	Bundesinstitut für Berufsbildung – The Federal Institute for Vocational Education and Training
BIS	Department for Business, Innovation and Skills
BITKOM	Bundesverband Informationswirtschaft, Telekommunikation und neue Medien – Federal Association for Information Technology, Telecommunications and New Media
BMBF	Bundesministerium für Bildung und Forschung – Federal Ministry of Education and Research of Germany
BMW	Bundesministerium für Wirtschaft, Familie und Jugend – Federal Ministry of Economics
BSc	Bachelor of Science
BTSA	Brevet de Technicien Supérieur Agricole – Higher Technician Certificate in Agriculture
CAP	Certificat d’Aptitude Professionnelle – secondary level vocational qualification diploma
CDFD	College Deskundigheid Financiële Dienstverlening – College of Financial Services Expertise

CE	Continuing education
Cedefop	European Centre for the Development of Vocational Training
CESifo	IFO institute for economic research at the university of Munich
CHEPS	Center for Higher Education Policy Studies
CNCP	Commission Nationale Certification Professionnelle – National committee on professional certificates
CNRS	Centre National de la Recherche Scientifique
CPD	Continuing professional development
CTI	Commission des Titres d'Ingénieur – Commission for securities of engineering
CVET	Continuing vocational education and training
DCSF	Department for Children Schools and Families of England
DGs	Directorate Generals
DGERT	Direcção-Geral do Emprego e das Relações de Trabalho – General Directorate for Employment and Labour Relations
DIT	Dublin Institute of Technology
DUT	Diplôme Universitaire de Technologie – Tertiary technical diploma
European CommissionTS	European Credit Transfer and Accumulation System
European CommissionVET	European credit system for vocational education and training
EEA	European Economic Area
EES	European employment strategy
EFTA	European Free Trade Association
e.g.	exempli gratia
EHEA	European higher education area
EQF	European qualifications framework
ET	Education and training
etc	Et cetera
EU	European Union
EUX	Exam at secondary level
FdA	Foundation degree
FE	Further education

FETAC	Further Education and Training Award Council
FNBE	Opetushallitus – Finnish National Board of Education
Forfás	Agency of the Department of Enterprise, Trade and Employment
FRSE	Fundacja Rozwoju Systemu Edukacji – Foundation for the Development of the Education System
GCSE	General certificate of secondary education
GDP	Gross Domestic Product
GNVQs	General national vocational qualifications
GTC	General Teaching Council
HBO	Hoger Beroeps Onderwijs – Higher learning and professional training
HE	Higher education
HEFCE	Higher Education Funding Council for England
HE institution	Higher education institutions
HETAC	Higher Education and Training Awards Council
HND	Higher national diploma
HIS GmbH	The higher education information system
HPS	vyšší odborné školy – VOŠ – higher professional schools
ICT	Information and communications technologies
i.e.	id est
IFB	Instituto de Formação Bancária – The Institute of Training for Banks
Ifo	Institute for Economic Research
INA	Instituto Nacional de Administração – National Institute of Administration
IoT	Institutes of Technology
ISCED	International Standard Classification of Education
ISGB	Instituto Superior de Gestão Bancária – Higher Institute of Bank Management
ISP	Instituto de Seguros de Portugal – The institute of insurance
ISST	Fraunhofer dem Institut für Software- und Systemtechnik – Institute for Software and Systems Engineering
IT	Information technologies
IUP	Instituts universitaires professionnalisés – university based

	professional institutes
IVET	Initial vocational education and training
KMK	Sekretariat der Ständigen Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland – The Conference of German cultural ministers of the federal states
KRASP	Konferencja Rektorów Akademickich Szkół Polskich – The Conference of Rectors of the Academic Higher Education Schools
LA	Local authorities
LEA	Local education authorities
LEGTA	Schools of general and technical agricultural education
L&F	Landbrug & Fødevarer – Umbrella organisation for agriculture and food
Licence Pro	Licence Professionnelle – Tertiary vocational degree
LLL	Lifelong learning
LMD	Licence/Master/Doctorat
MA	Master of Art
MSc	Master of Science
MBA	Master of Business Administration
MBO	Middelbaar Beroepsonderwijs
NGO	Non-governmental organisation
NHS	National Health Service
NIBE-SVV	Netherlands Instituut voor het Bank-, Verzekerings- en Effectenbedrijf – Netherlands Institute of Banking, Insurance and Investment Company
NIVRA	Koninklijk Nederlands Instituut van Registeraccountants – Royal Dutch Institution of registered Accountants
NNEB	Diploma in nursery nursing (full time 2-year course) England
NOKUT	Nasjonalt organ for kvalitet i utdanningen – Norwegian Agency for Quality Assurance in Education
NOVAA	De Nederlandse Orde van Accountants-Administratieconsulenten – Dutch Order of Accountants Administration Consultant
NMC	Nursing and Midwifery Council
NQF	National qualifications framework
NQF-EHEA	National qualifications framework – European higher education area

NVAO	Nederlands-Vlaamse Accreditatieorganisatie – The Accreditation Organisation of The Netherlands and Flanders
NVQ	National vocational qualification
European Commission	Organisation for Economic and Cooperation and Development
OU	Open Universiteit – Open University of the Netherlands
PE	Permanent education
PGCE	Postgraduate certificate of education
PhD	Doctoral degree
PISA	Programme for International Student Assessment
POPH	Programa Operacional do Potencial Humano – Human Potential Operational Programme
PREP	Post-registration education and practice
QAA	Quality Assurance Agency for Higher Education
QCF	Qualifications and credit framework
QF-EHEA	Qualification framework – European higher education area
QTS	Qualified teacher status
RA	Registered Accountant
RCN	Royal College of Nursing
R&D	Research and development
RNCP	Répertoire national des certifications professionnelles – National Vocational Certification Register
SAC	State Accreditation Committee
SAFH	Statens Autorisasjonskontoret for Helsepersonell – Norwegian Registration Authority for Health Personnel
SCITT	School-centred initial teacher training
SENCO	Special educational needs coordinator
SEN	Special educational needs
SIF	Strategic innovation fund
SME	Small and medium enterprise
SIMT	Stuttgart Institute of Management and Technology
S&T	Science and technology
TDA	Training and Development Agency for Schools
TEI	Tertiary education institutions

UKCC	United Kingdom Central Council for Nursing, Midwifery and Health Visiting
VAE	Validation des Acquis de l'Expérience – Validation of acquired experience
VET	Vocational education and training
WEB	The Adult and Vocational Education Act of Netherlands
WFT	Act on Financial Supervision of the Netherlands
WHW	Higher Education and Research Act of the Netherlands
ZVEI	Zentralverband Elektrotechnik- und Elektronikindustrie – Electrical and Electronics Industry
3F	Fagligt Fælles Forbund – United Federation (union)

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Vocational education and training at higher qualification levels

The European policy agenda within the Copenhagen and the Bologna processes calls for an increase in qualification levels of the working population. The European qualifications framework and the European credit system for vocational education and training operate at all qualifications levels. What are the characteristics of vocational training offers for higher qualifications? What is the nature of those qualifications? Which governance patterns are in place?

This research paper seeks to identify offers across boundaries of well-established education and training sectors (VET and HE) and for overcoming the institutional divide. It deals with scientific discussions on academisation and vocationalism, reviews definitions in use and discusses current developments and understanding in policy and practice. Deliberate choice was made to analyse VET at higher qualification levels in 13 European countries and six case studies in different fields. This illustrates diversity and sustainability in provision of qualifications. The evidence gathered is a starting point for defining further steps in policy, practice and research. .

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