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KOF Swiss Economic Institute

The KOF Education System Factbook: Denmark

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List of Abbreviations

AP	Academy Profession's Degree
AVU	General Adult Education
CVC	Curriculum Value Chain
DAU	Danish Act on Universities
DEI	Danish Evaluation Institute
GCI	Global Competitiveness Index
GII	Global Innovation Index
GDP	Gross Domestic Product
GPA	Grade Point Average
DMCEGE	Danish Ministry for Children, Education and Gender Equality
DMHES	Danish Ministry for Higher Education and Science
EGU	Basic Vocational Education and Training
ETUC	European Trade Union Confederation
EUX	Combined Vocational and General Upper Secondary Education
HF	Higher Preparatory Examination
HHX	Higher Commercial Examination
HTX	Higher Technical Examination
VET	Initial Vocational Education and Training
ISCED	International Standard Classification of Education
KOF	Swiss Economic Institute
KOT	Coordinated Enrolment System
NTC	National Trade Committee
OECD	Organisation for Economic Co-operation and Development
PET	Professional Education and Training
STX	Gymnasium
SU	State Educational Grant and Loan Scheme
SVU	State Educational Support for Adults
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
VUC	Adult Education Centres

VPET	Vocational Professional Education and Training
VPETA	Vocational and Professional Education and Training Act
WEF	World Economic Forum
YLMI	Youth Labour Market Index

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FOREWORD

The increasing competitiveness of the world economy as well as the high youth unemployment rates after the worldwide economic crises have put pressure on countries to upgrade the skills of their workforces. Consequently, vocational education and training (VET) has received growing attention in recent years, especially amongst policy-makers. For example, the European Commission defined common objectives and an action plan for the development of VET systems in European countries in the *Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training for 2011-2020* (European Commission, 2010). In addition, a growing number of US states and other industrialized, transition, and developing countries (for example Hong Kong, Singapore, Chile, Costa Rica, Benin and Nepal) are interested in either implementing VET systems or making their VET system more labor-market oriented.

The appealing outcome of the VET system is that it improves the transition of young people into the labor market by simultaneously providing work experience, remuneration and formal education degrees at the secondary education level. If the VET system is optimally designed, VET providers are in constant dialogue with the demand-side of the labor market, i.e. the companies. This close relationship guarantees that the learned skills are in demand on the labor market. Besides practical skills, VET systems also foster soft-skills such as emotional intelligence, reliability, accuracy, precision, and responsibility, which are important attributes for success in the labor market. Depending on the design and permeability of the education system, VET may also provide access to tertiary level education (according to the ISCED classification): either general education at the tertiary A level or professional education and training (PET) at the tertiary B level. PET provides occupation-specific qualifications that prepare students for highly technical and managerial positions. VET and PET systems are often referred to together as “vocational and professional education training (VPET)” systems.

Few countries have elaborate and efficient VPET systems. Among these is the Swiss VPET system, which is an example of an education system that successfully matches market supply and demand. The Swiss VPET system efficiently introduces adolescents to the labor market, as shown by Switzerland’s 2007-2017 average youth unemployment rate of 8.1 percent compared to 14.8 percent for the OECD average (OECD, 2017).

Though not many countries have VPET systems that are comparable to Switzerland’s in terms of quality, efficiency and permeability, many have education pathways that involve some kind of practical or school-based vocational education. The purpose of the KOF Education System Factbook Series is to provide information about the education systems of countries across the world, with a special focus on vocational and professional education and training.

In the KOF Education System Factbook: Denmark, we describe Denmark's vocational system and discuss the characteristics that are crucial to the functioning of the system. Essential components comprise the regulatory framework and the governance of the VPET system, the involved actors, and their competencies and duties. The Factbook also provides information regarding the financing of the system and describes the process of curriculum development and the involved actors.

The Factbook is structured as follows: First, we provide an overview of Denmark's economy, labor market, and political system. The second part is dedicated to the description of the formal education system. The third section explains Denmark's vocational education system. The last section offers a perspective on Denmark's recent education reforms and challenges to be faced in the future.

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The KOF Education System Factbooks is regarded as work in progress. The authors do not claim completeness of the enclosed information, which has been collected carefully and consciously. Any suggestions for improvement are welcome!

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1. The Danish Economy and its Political System

One of the main purposes of an education system is to provide the future workforce with the skills needed in the labor market. The particularities of a country's economy and labor market are important factors in determining the current and future demand for skills. We will briefly describe Denmark's particularities in the first part of this Factbook. In addition, this part provides an overview of Denmark's political system with an emphasis on education politics.

1.1 The Danish Economy

Denmark has a modern market economy with an extensive state welfare system, an outstanding quality of life and the lowest inequality of all the OECD countries (third lowest Gini coefficient[1] after Iceland and Norway) (OECD, 2015b). Despite having a flexible labor market and being home to prominent companies in pharmaceuticals, maritime shipping and renewable energy, the Danish economy suffers from weak competition in some industries and a generally weak productivity growth rate over the last two decades. (Central Intelligence Agency, 2013; OECD, 2014a). Denmark's annual GDP growth rate was, at 0.78 percent only half of the OECD average of 1.67 percent between 1990 and 2014 (World Bank, 2015a). With a GDP per capita of $41,567 in 2014, Denmark ranked below that of its neighbor Sweden, with $42,798, but still considerably higher than the OECD average of $36,532 (OECD, 2015c).

The comparison of value added and employment per sector in Table 1 depicts the typical characteristics of a developed country. In 2014, the primary sector had by far the smallest weight in the Danish economy: it contributed 1.3 percent to total value added and 2.6 percent to employment. Almost one fourth (24.3 percent) of the value added can be attributed to the secondary sector, which accounts for roughly one fifth (22.5 percent) of the employed. However, the lion's share rose from the tertiary sector. In 2014, 72.6 percent of total value added was about equally distributed over the three subcategories: wholesale, retail trade, information and communication; financial services and real estate; and public services and health. The significance of the tertiary sector is even more evident in terms of employment, accounting for 80 percent of all employees. In comparison to the first two sectors, the tertiary sector has a lower labor productivity, due to the lower degree of mechanization within the service industry (World Bank, 2000). Compared to the EU 28 countries, the Danish economy generated more value added in the tertiary sector and employed more people. The cause of

[1]The Gini index measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution.
A Gini index of zero represents perfect equality and 100, perfect inequality (OECD, 2017a).

this arises mainly from Denmark's public sector, accounting for over 36 percent of total employment compared to 30 percent in the EU-28 countries on average.

A main driver for this difference is Denmark's large-scale welfare state. Based on the so-called Scandinavian model, all Danish citizens have equal rights to access social services. Certain services, such as the education and health care systems, are provided free of charge. Such a comprehensive welfare system comes at a cost, and as a consequence, Denmark also has one of the highest taxation levels worldwide (Denmark, 2015).

Table 1: Value added and employment by sector, 2014

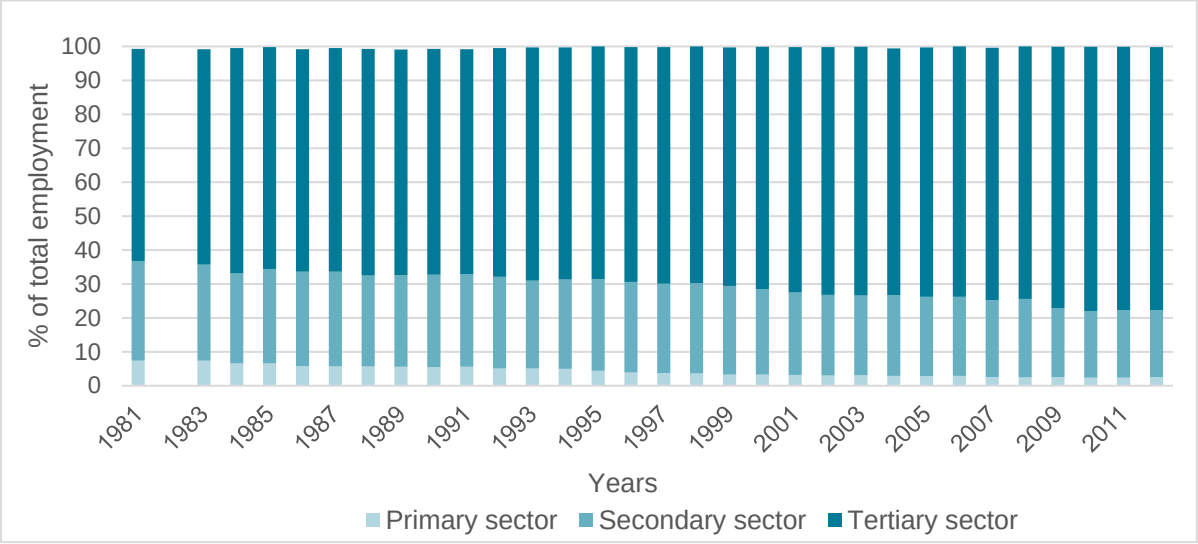
Sector	Denmark: Value added (%)	EU-28: Value added (%)	Denmark: Employment (%)	EU-28: Employment (%)
Primary sector	1.3	1.6	2.6	5.0
Agriculture, hunting and forestry, fishing	1.3	1.6	2.6	5.0
Secondary sector	22.5	24.3	17.4	22.0
Manufacturing, mining and quarrying and other industrial activities	18.1	18.9	11.3	15.6
of which: Manufacturing	13.9	15.3	10.3	14.0
Construction	4.4	5.4	6.1	6.3
Tertiary sector	76.2	74.1	80.1	73.1
Wholesale and retail trade, repairs; hotels and restaurants; transport; information and communication	23.8	23.8	29.1	27.5
Financial intermediation; real estate, renting & business activities	25.4	27.4	14.5	15.9
Public administration, defense, education, health, and other service activities	27.0	22.9	36.5	29.7

Source: (Eurostat, 2015a)

As Figure 1 illustrates, the importance of the tertiary sector increased gradually since the 1980s (from 62 percent in 1981 to 72 percent in 2014), whereas the importance of the secondary and primary sector in the same time period diminished (from almost 30 percent to 20 percent and from 8 percent to 3 percent, respectively).

In terms of competitiveness, Denmark improved its position from rank 15 in 2013-2014 to rank 13 in 2014-2015, according to the World Economic Forum's (WEF) Global Competitiveness Index (GCI) rankings. Denmark's progress can be partially attributed to rebounding financial markets, more favorable macroeconomic conditions and recovering institutions after the world economic crisis. Like its geographically surrounding countries, Denmark benefits from a well-functioning and transparent institutional framework. In combination with Denmark's first-class higher education and training system and the country's highly flexible labor market,

Figure 1: Employment by sector (as % of total employment), 1981-2012



Source: (World Bank, 2015b)

Denmark is well-positioned for a sustainable, innovation-driven growth and belongs to the world's most competitive economies (World Economic Forum WEF, 2014).

In accordance with these favorable conditions, Denmark ranked 8th in the 2014 Global Innovation Index (GII). Mainly responsible for this valuation is the country's effective government, the high share of government expenditure on education and Denmark's strong academic sector with many researchers and well-published articles. (Cornell University, INSEAD and WIPO, 2014).

1.2 The Labor Market

In the first part of this section, we will describe Denmark's labor market as a whole and narrow in on the Danish youth labor market in particular.

1.2.1 Overview of Denmark's Labor Market

The success of the Danish "flexicurity" model is seen manifested in the significantly declined unemployment rate between 1994 and 2008. The "flexicurity" model consequently serves as a role model for many other countries (OECD, 2015d). The term "flexicurity" is used to describe a blend between flexible labor market measures and a strong unemployment security system. When it comes to Denmark's particular model, a third element, active labor market policy, completes the "golden triangle of flexicurity" (Anderson & Svarer, 2007). One side of the triangle is dedicated to flexible firing and hiring policies in order to enable employers to quickly adjust their staff to changing economic circumstances. As a consequence, approximately 25 percent of private sector employees change jobs every year. Further indicators of Denmark's flexible and employer-friendly labor market are the absence of a minimum wage and the non-

existing premium for night work (World Bank Group, 2015). The second side of the triangle is represented by a guaranteed and comparatively high unemployment benefit (up to 90 percent of the last income, for low income workers.) (Denmark, 2015). The third side of the triangle is an active labor market policy with an emphasis on job search and employment (Anderson & Svarer, 2007). The term “flexicurity” to describe the present Danish model is therefore a bit misleading and dates back to before the introduction of the active labor market policy. It emerged from a century of collective bargaining between the social partners and is consequently supported by the unions, which cover about 75 percent of the workers (Denmark, 2015).

The high labor force participation and low unemployment rate of the Danish labor market, if compared to the OECD average, confirms its strong performance, as seen in Table 2 and Table 3. Across all age groups and educational levels, Denmark reaches a higher rate of labor force participation and a lower unemployment rate than the respective OECD averages. Examining these two indicators by age reveals that the biggest discrepancy between Denmark and the OECD exists in the youth labor market.

Table 2: Labor force participation rate, unemployment rate by age 2015

	Labor force participation (%)		**Unemployment rate (%)**	
	Denmark	OECD average	Denmark	OECD average
Total (15-64 years)	78.5	71.3	6.3	7.0
Youth (15-24 years)	62.1	47.1	10.8	14.0
Adults (25-64 years)	82.5	76.6	5.5	6.0

Source: (OECD, 2017b).

In 2015, Denmark’s youth labor force participation was a remarkable 15 percent above the OECD average and is based on the long-established tradition in Scandinavian countries for youth to have part-time and summer-jobs (Eurostat, 2015b). In addition, the data indicates a substantial difference between the labor force participation of adults and youth. This common pattern applies to Denmark as well as to the OECD average and is initiated by the gradual transition from education into the labor force during adolescence. Even though Denmark’s unemployment rates were still below the OECD average in 2015, they remain above the country’s pre-crisis level. The youth unemployment rate in particular almost doubled since 2008 and is still a major concern, despite a recent marginal decline (OECD, 2014b).

Nevertheless, the overall good performance of the Danish labor market continues to shine through as the labor force participation and unemployment rate are examined by educational

attainment. Across all education levels, Denmark depicted a higher labor force participation and a lower unemployment rate than the OECD average in 2014.

Table 3: Labor force participation rate, unemployment rate by educational attainment 2014 (persons aged 25-64)

	Labor force participation (%)		Unemployment rate (%)	
	Denmark	OECD average	Denmark	OECD average
Less than upper secondary education	67.2	63.6	8.2	12.8
Upper secondary level education	83.7	79.9	5.1	7.7
Tertiary education	90.3	87.7	4.4	5.1

Source: (OECD, 2017c).

The labor force participation of people with less than upper secondary education was 67.2 percent and 90.3 percent for people with tertiary education. The risk of becoming unemployed declines with rising educational attainment. In 2014, the unemployment rate of people with less than upper secondary education was 8.2 percent and 4.4 percent for people with tertiary education. These two developments can also be observed in the data for the OECD average, but on a slightly inferior level.

1.2.2 The Youth Labor Market

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare how adolescents participate in the labor market across countries (Renold et al., 2014). The foundation for this index is the critique that a single indicator, such as the unemployment rate, does not suffice to describe the youth labor market adequately nor provide enough information for a comprehensive cross-country analysis. To increase the amount of information analyzed and to foster a multi-dimensional approach, the KOF YLMI consists of twelve labor market indicators[2] that are grouped into four categories.

[2] The data for these indicators are collected from different international institutions and cover up to 178 countries for the time period between 1991 and 2012.

The first category describes the *activity state* of youth (ages 15-24 years old) in the labor market. Adolescents are classified according to whether they are employed, in education, or neither (unemployed, discouraged and neither in employment nor in education or training; see info box to the right). The category *working conditions* and the corresponding indicators reflect the type and quality of jobs the working youth have. The *education* category accounts for the share of adolescents in education and training and for the relevance of and their skills on the labor market. The fourth category, *transition smoothness*, connects the other three categories by capturing the school-to-work transition phase of the youth. Each country obtains a score of 1 to 7 on each particular indicator of the KOF YLMI. A higher score reflects a more favorable situation regarding the youth labor market and a more efficient integration of the youth into the labor market.

Dimensions of the KOF YLMI
Activity state - Unemployment rate - Relaxed unemployment rate[3] - Neither in employment nor in education or training rate (NEET rate)
Working conditions Rate of adolescents: - with a temporary contract - in involuntary part-time work - in jobs with atypical working hours - **in work at risk of poverty**[4]Vulnerable unemployment rate[5]
Education - Rate of adolescents in formal education and training - Skills mismatch rate
Transition smoothness - Relative unemployment ratio[6] - Long-term unemployment rate[7]
Source: Renold et al. (2014).

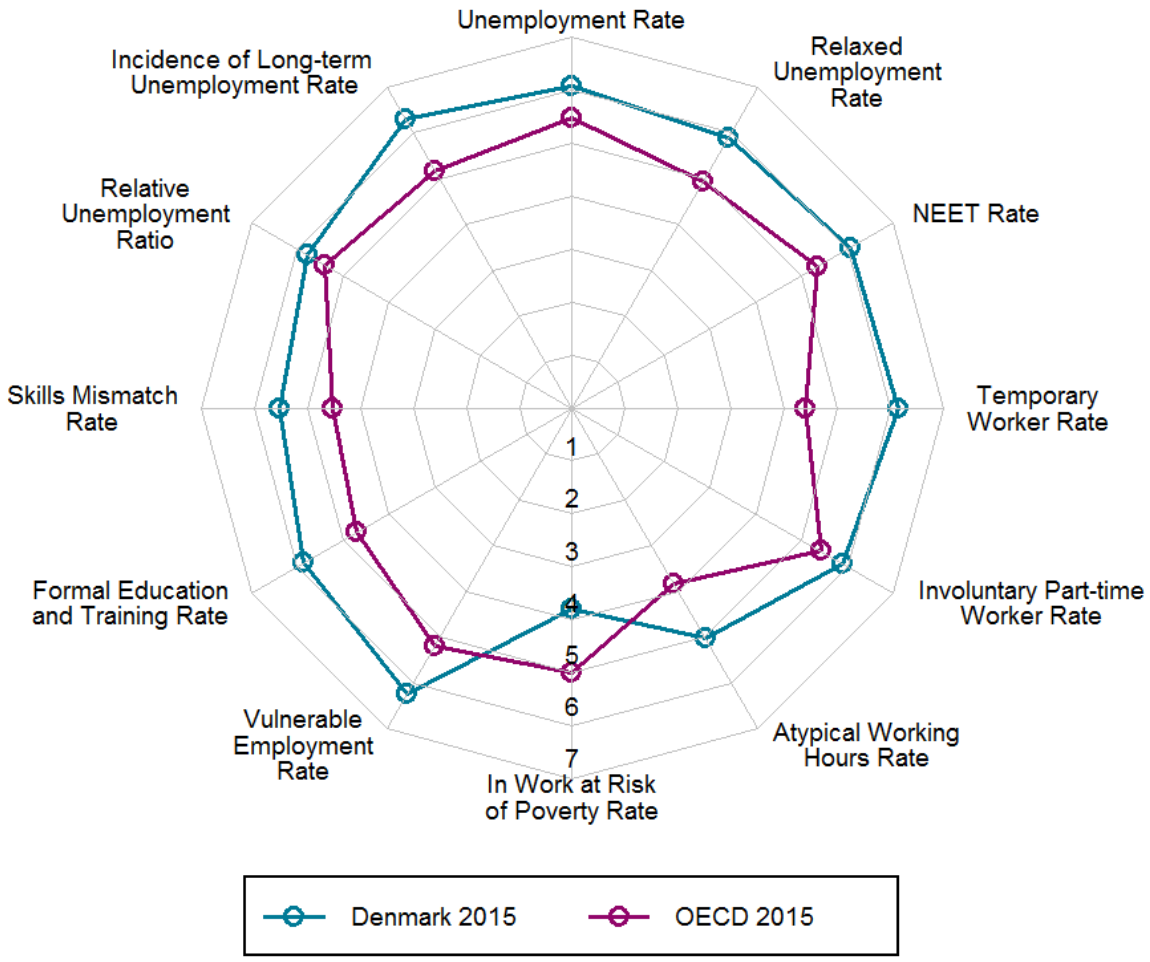
One of the major drawbacks of the KOF YLMI is data availability. When data is lacking, a category can occasionally be based on a single indicator or must be omitted entirely when not a single indicator for that category exists in a given country. A lack of indicators can make comparisons across certain countries or groups of countries problematic and sometimes even impossible.

1.2.3 The KOF Youth Labour Market Index (KOF YLMI) for Denmark

Fortunately, data availability for Denmark is excellent. Data exist for all 12 indicators in the four categories from 2005 onwards. Consequently, a comparison between Denmark and the OECD average is feasible and meaningful. In 2015, the overall KOF YLMI score of Denmark was, with 5.8, noticeably higher than the OECD average of 5 (KOF, forthcoming). The superior situation of the Danish youth labor market is also depicted in Figure 2.

[3] It is calculated as the number of unemployed and discouraged workers as a share of the entire labour force. Discouraged workers have given up the search for work (not actively seeking), although they have nor job and are currently available for work (also: "involuntary inactive").
[4] Those who cannot make a decent living out their earnings, being at risk of poverty as a percentage of the working population.
[5] Share of the employed population working on their own account or those working in their family business and thus contributing to the entire family income. Both are less likely to have formal work arrangements and are therefore less protected by labour laws and more exposed to economic risk.
[6] Is defined as the youth unemployment rate (15-24 years) as a share of the adult unemployment rate (25+). If the youth cohort is affected in the same way than the adult group with respect to unemployment, then the relative unemployment ratio will be equal to one. If the youth are relatively more affected, then the ratio will be bigger than one.
[7] Those unemployed for more than one year (52 weeks) in the total number of unemployed (according to the ILO definition).

Figure 2: YLM Scoreboard: Denmark versus the OECD average, 2015



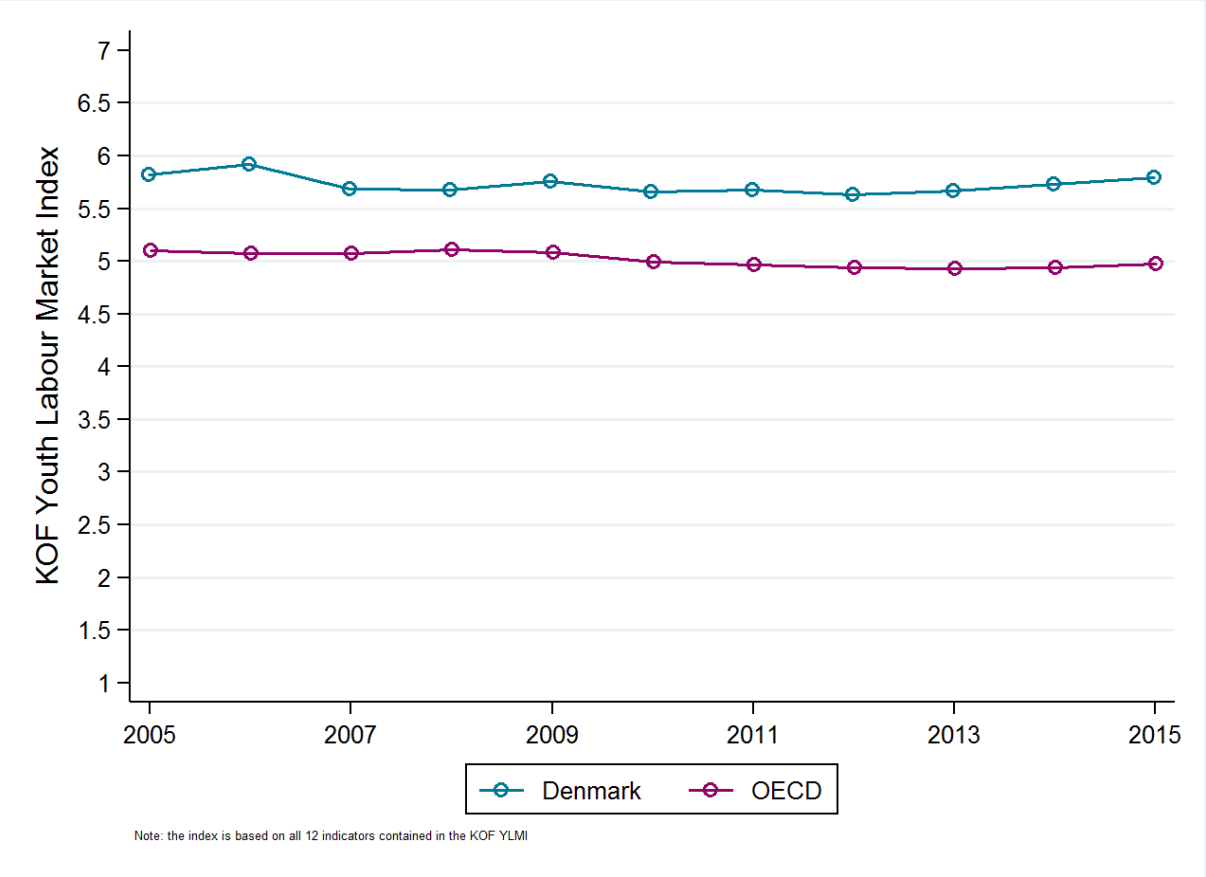
Source: (KOF, forthcoming).

Denmark reaches a higher index value than the OECD average for every indicator, except for a major shortfall in the category Work at Risk of Poverty. This category appears to be a general weak spot for the Nordic countries (Renold, Bolli, Egg, & Pusterla, 2014). Considering the entire population of Denmark (and that of other Nordic countries) the phenomenon of the working poor is a minor issue and it seems that only the youth is endangered by poverty during employment (Eurostat, 2015c). The high Work at Risk of Poverty rate could be attributed to the previously discussed phenomenon in Scandinavian countries of a high youth labor force participation rate in part-time and summer jobs. The indicators *atypical working hours rate*, *temporary worker rate* and *incidence of long-term unemployment* account for the largest differences in scores in favor of Denmark while compared to the OECD averages. The high scores in the indicators temporary worker rate and incidence of long-term unemployment are most likely due to Denmark's flexible hiring and firing policy.

Figure 3 shows the evolution of the aggregate KOF YLMI for Denmark and the OECD average over the time 2005 to 2015. Analyzing the KOF YLMI scores between 2005 and 2015 shows

that Denmark consistently outperformed the OECD score, which declined slightly in recent years. However, both Denmark's and the OECD's KOF YLMI scores remained fairly stable over the entire period.

Figure 3: YLM-Index Denmark versus OECD, 2005-2015



Source: (KOF, forthcoming)

1.3 The Political System

Understanding the basics of a country's political system and getting to know the political goals with respect to its education system are crucial steps in understanding the education system in a broader sense. In this overview, we explain Denmark's political system in a general sense. The politics and goals regarding the education system will be discussed in the second part.

1.3.1 Overview of Denmark's Political System

The Kingdom of Denmark evolved from an absolute monarchy to a constitutional monarchy, multi-party system in 1849. The monarch is the head of state, although in practice his or her representation is only symbolic and the executive powers lie in the prime minister's hands. Denmark entertains a strong tradition of coalition and minority governments – no single party has ever obtained a majority since 1909 – and is thus portrayed as a consensus-democracy.

It is a member state of the European Union and NATO, and it incorporates two overseas territories on top of mainland Denmark; Greenland and the Faroe Islands, which are de facto members of NATO, but not part of the European Union. They are granted quasi full autonomy on all ends but external affairs and defense.

The decentralized Danish government is organized around a juxtaposition of 98 municipalities, 5 regions (that excludes Greenland and the Faroe Islands) and the central government[8]. Out of the three, only municipalities and the central government can levy taxes. Regions, essentially an aggregate of municipalities, rely on the municipalities and the central government for their budget. The legislative body of the central government is a unicameral parliament, named the *Folketing*. Denmark enjoys minimal levels of corruption; in fact, it is perceived as the least corrupt of 175 nations in the Corruption Perceptions Index of 2014 (Transparency International, 2014). It also stands in fifth place in The Economist's Democracy Index of 2014 (Democracy Index, 2015), behind the other Scandinavian countries and New Zealand.

1.3.2 Politics and Goals of the Education System

In Denmark, the education system is defined by and shared among several different ministries. The most prominent, the Danish Ministry for Children, Education and Gender Equality (DMCEGE), is in charge of compulsory and post-compulsory education (among others high school and VET), while early childhood education and care lies under the banner of the Ministry of Children, Gender Equality, Integration and Social Affairs. Higher education (e.g. college and university) falls under the Danish Ministry of Higher Education and Science (DMHES), along with the Ministry of Culture for cultural-based higher education (OECD, 2013).

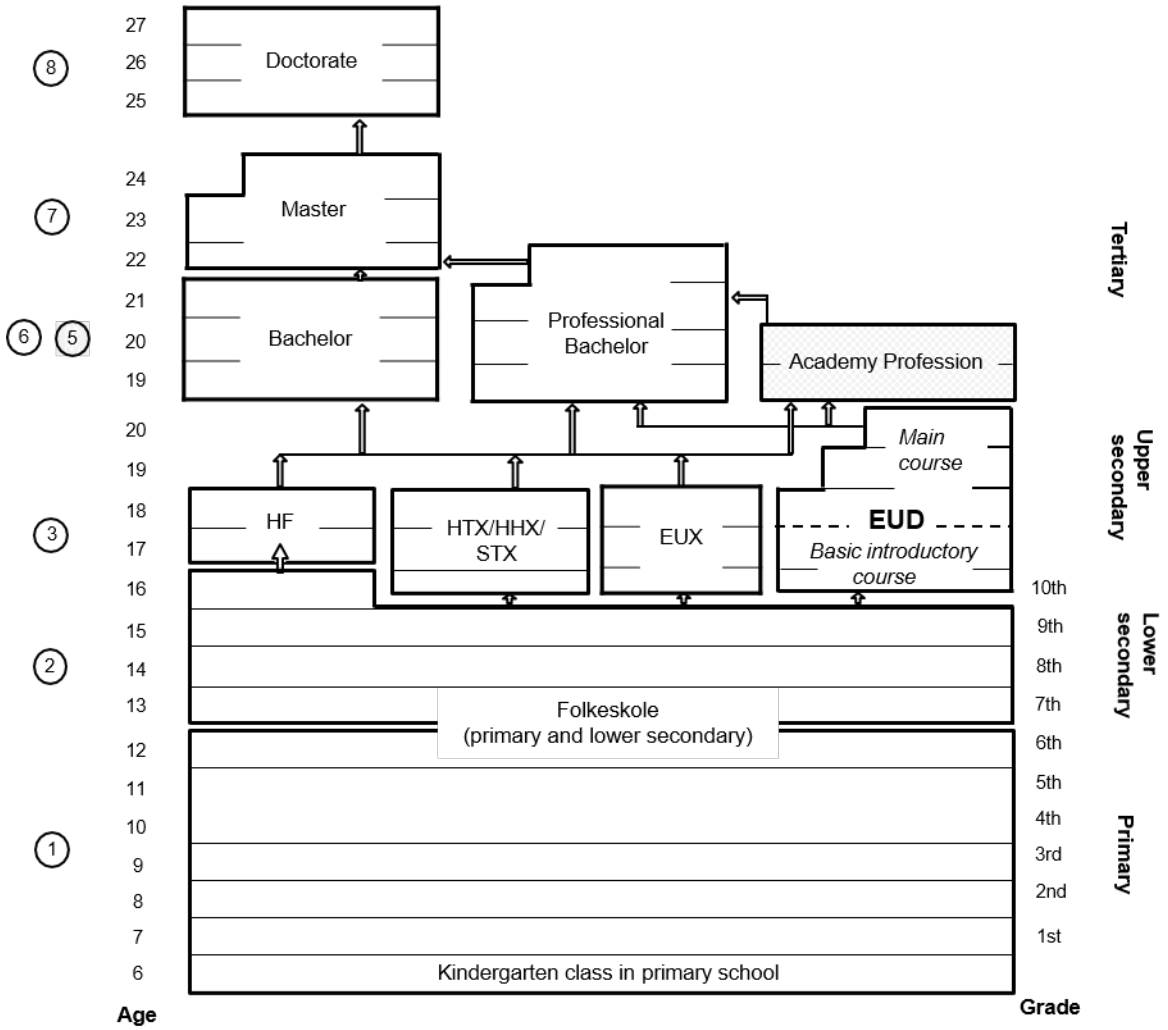
As to compulsory and post-compulsory education, Denmark pursues a decentralized, but still flexible, strategy. The 98 municipalities are responsible for reaching the nation-wide educational targets with some framework conditions (e.g. minimum hours of teaching, school-leaving examinations and teacher qualifications) set by the Ministry of Education (UNESCO-IBE, 2012). The flexibility of municipalities materializes in their freedom to design the strategy (i.e. the curriculum) to meet those targets. Some degree of competition between schools is enabled by the freedom of students to choose which schools they attend at the local level. Different independent bodies (e.g. the National Agency for Quality and Supervision) monitor the performance of schools and municipalities.

[8] The present government structure was only introduced in 2007. The major reform involved reducing the number of municipalities from 271 to 98 by merger and establishing 5 regions instead of the previous 13 counties. The aim of this reorganization was enabling the municipalities to provide the increasing scope of public services demanded **Invalid source specified.**.

2. Formal System of Education

The Danish education system can be subdivided into the three levels: Folkeskole, upper secondary- and tertiary levels. According to the Danish Ministry for Children, Education and Gender Equality, the Folkeskole represents the mandatory education in Denmark and is comprised of a yearlong pre-primary class and nine years of integrated primary and lower secondary education (2015a). An illustration of the education system and its various education pathways is provided by Figure 4.

Figure 4: Danish Education System



Source: (OECD, 2015g).

2.1 Pre-Primary Education

Children are assigned to different facilities according to their age. Six-month-olds to three-year-olds attend nurseries and three- to five-year-olds attend kindergartens or alternatively integrated institutions that cover the pre-primary period. The pre-primary education institutions are not bound to a universally binding curriculum, but they are required to refer to six main

themes: “comprehensive personal development of the child, social competencies, language, body and motion, nature and natural phenomena, cultural expressions and values” (DMCEGE, 2015a).

2.2 Primary and Lower Secondary Education

Since 2009, mandatory education in Denmark starts in the calendar year of the child’s sixth birthday and usually lasts until the age of 16/17. The municipal “Folkeskole” comprises of one year of kindergarten class in primary school and a nine-year-long single-structure primary and lower secondary education. Students who feel the need for further academic qualification after evaluating their educational prospects have the opportunity to participate in a 10th post-mandatory school year. As a public institution within the Danish welfare state the Folkeskole is free of charge. There are no admission requirements (DMCEGE, 2015b). The average class size is 20 students, and classes must not surpass 28 students (Alexander, 2009, S. 765). Class formation is based on the students’ age and not on their academic performance. Pre-school classes are designed to facilitate the children’s transition from day-care to daily school life. According to the Act on the Folkeskole, there is subject division at this level and teaching should, as much as possible, take place in the form of play and other development methods.

In general, the Folkeskole aims to provide students with the skills and knowledge that lay the foundation for further education and training and foster a holistic development of the individual student (DMCEGE, 2015b). After the first year, the curriculum is divided into three subject fields. The humanities are comprised of Danish, English, Christian Studies, History and Social Studies. Physical Education, Music, Visual Arts, Design, and Wood and Metalwork constitute the practical and creative subjects. The science subjects, being the third group, encompass Mathematics, Natural Sciences and Technology, Geography, Biology, Physics and Chemistry. Additional responsibilities of the primary level are education in Road Safety and Health and Sexual Education, as well as educational, vocational and labor market orientation (DMCEGE, 2015b).

The Folkeskole is not examination-orientated and, as a result, failure out of school is a very seldom event in Denmark. It is intended that class formation is based on the students’ age and not their performance, but in some cases, struggling students can be asked (with parental consent) to repeat a school level (DMCEGE, 2015b). Nevertheless, recurrent evaluations are an indispensable component of the educational process. The purpose of such assessments is twofold. On the one hand, assessments can be used as guidance for the further education of the student. On the other hand, they are also used as instruments to inform parents about the performance of their children (DMCEGE, 2015b). Computer-based adaptive tests at different

stages of the students' educational path are an integral part of the evaluation process and facilitate a national comparability (DMCEGE, 2015b). At the end of the students' compulsory education, during the 9th level, they are required to take the Folkeskole school-leaving examination. The voluntary 10th level aims at students who feel the need for additional qualifications in order to successfully complete their post-compulsory education.

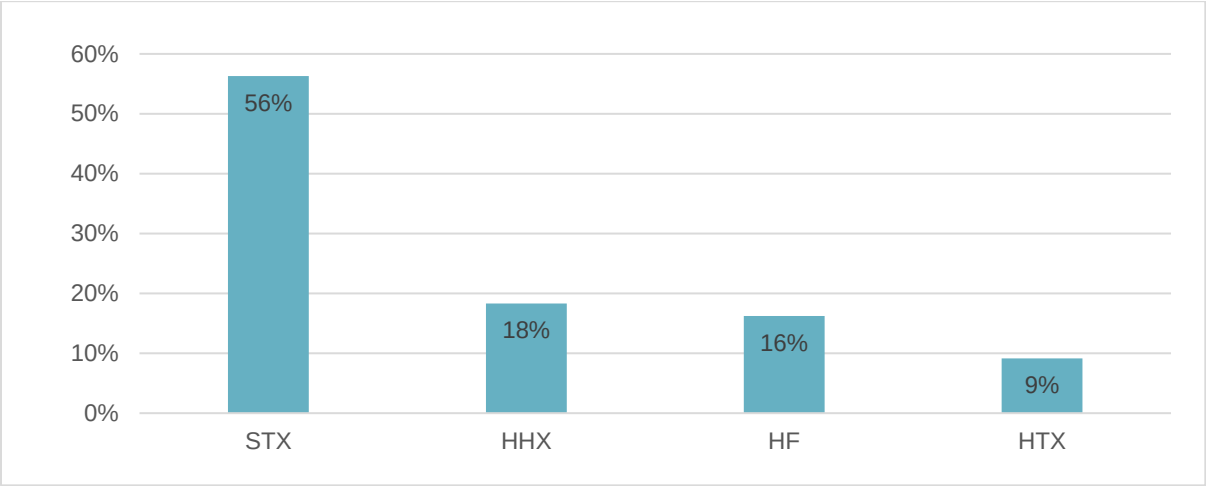
It is important to note that it is the education itself which is mandatory, not the attendance to a particular school. Private schools and home-schooling are considered to be equivalent to public schools, as long as certain standards and requirements are met. Denmark has a longstanding tradition of private schools, which have an attendance of approximately 13 percent of all students at basic school level (Kindergarten through 9/10th level). Independent of underlying ideological, religious, ethical or political motivations, private schools are nonetheless acknowledged and receive state grants (DMCEGE, 2015b).

2.3 Upper secondary Education

Danish upper secondary education is split between general education, as preparation for higher education, and vocational- and technical education, as preparation for the labor market. In 2012, 54 percent of students in the upper secondary level were enrolled in general education programs, compared to 46 percent participating in vocational programs (OECD, 2014c, p. 314). The latter is extensively discussed in Chapter 3, so the focus of this section lies primarily on the general education system.

Upper secondary general education consists of four differently oriented institutions, which enable access to higher education. The Gymnasium (STX) and the Higher Preparatory Examination (HF) are general programs and cover a wide range of subjects in the area of humanities, natural- and social sciences. The Higher Technical Examination Programme (HTX) offers a combination of general, technological and scientific disciplines, whereas the Higher Commercial Examination Programme (HHX) emphasizes business and socio-economic subjects, as well as modern language competencies (DMCEGE, 2015c). Among these programs the Gymnasium (STX) accounts for about 56 percent of the students and is by far the most popular general upper secondary program, as Figure 5 illustrates. The HTX and HHX programs are vocationally oriented to some extent and aim at engineering and other technical courses on the tertiary level (HTX) or studies at a business school (HHX) (CEDEFOP, 2014b, p. 13).

Figure 5: Distribution of enrolment within general education on upper-secondary level in 2014



Source: (Statistics Denmark, 2015a), own calculation.

Besides the two-year HF track, it takes three years to complete any of the other upper secondary general education programs (STX, HTX, HHX). After completing nine years of basic school and passing the respective compulsory final examinations in primary and lower secondary school, students qualify for these programs. To be admitted to HF, ten years of basic school and examinations in Danish, English, mathematics, physics/chemistry and a second foreign language are required. If a student does not meet these criteria an additional admission test can be requested (DMCEGE, 2015c).

Students who did not embark on a general upper secondary track after compulsory education, e.g. joined the army or completed a vocational education, have the possibility to enroll in a two-year preparation course for tertiary education. The academic content corresponds to the three-year STX program and grants access to higher education. However, due to the shortened duration, creative subjects are not included in the mandatory curriculum and students have a significantly higher workload (Studenterkursus, 2015; AKADEMISK Studenterkursus, 2015).

All subjects are offered on A-, B- or C-level, according to their academic level. For example, Maths on level C is less demanding than Maths on level A. This classification determines how much time is allocated to each subject. It also allows for the compilation of different study profiles and specializations. Grades are distributed on a 7-point scale, ranging from -3 to 12, and the students undergo written, oral or project-based examinations. The grade point average is weighted in relation to the respective levels and plays a central role in the student's future academic career. A student who completes more A-levels than requested by the education program has a higher GPA than one who does not (DMCEGE, 2015c).

In Denmark, teaching at the upper secondary level is free of charge, and while students have to provide some learning material of their own, it is limited to total costs of DKK 2,500. Active Danish students no older than 18 years are eligible for Danish Education Support (SU), entitling them to a monthly state grant and a supplementary state loan if needed. Under certain circumstances, foreigners can also qualify for SU (DMCEGE, 2015c).

2.4 Postsecondary /Higher Education

The share of people in Denmark that attained tertiary education in 2012 was 35 percent. This is slightly above the OECD average of 33 percent. However, due to Denmark's currently higher entry rates, this figure is expected to increase in the future (OECD, 2014d). The Danish higher education system is divided into two sectors: the university sector is covered in this section and the professionally-oriented higher education sector is discussed in chapter 3. Of all tertiary level graduates, 46 percent attended a university in 2011 (Univiersities Denmark, 2013).

The universities are self-governing institutions under the public sector administration and are overseen by the Minister for Science, Innovation and Higher Education (Act on Universites, 2003). Their main purpose is to perform research and offer research-based education. The universities offer long-cycle educational programs, structured in accordance with the Bologna System in Bachelor's degree programs (180 ECTS), Master's degree programs (120 ECTS) and PhD degree programs (180 ECTS).

Students in Denmark can choose between eight universities. Besides the traditional and technical universities, some institutions specialize in a particular educational field such as IT or business (Danish Ministry of Higher Education and Science (DMHES), 2015a). In addition to the eight universities, 14 artistic higher education institutions offer research-oriented long-cycle programs in the fields of architecture, design, film, fine arts, music and performing arts and conservation (DMHES, 2015b).

Admission requirements to the universities differ by program. An upper secondary degree is the basic requirement. In correspondence with the skills needed in a specific program, the Ministry of Science, Innovation and Higher Education defines additional admission requirements. The conditions can be based a student's GPA in certain subjects in the upper secondary level and/or a practical test, stipulated by the university itself. (European Education Directory, 2015).

To be admitted to a graduate program, students must meet the following three criteria. A completed Bachelor's degree (or Professional Bachelor's degree) represents the general entry requirement (University of Southern Denmark, 2015). Depending on the program, a certain

language level (Danish/English) is required. Finally, program-specific entry criteria demand a certain number of completed ECTS credit points in specific areas of study. (Copenhagen Business School (CBS), 2015a; CBS, 2015b).

Higher education in Denmark is free of charge for students from the EU/EEA and Switzerland. Moreover, Danish citizens are eligible for public support, independent of their social standing. In the form of the State Educational Grant and Loan Scheme (SU), students receive aid to cover their costs of living during their studies[9], which amounts to about 60 percent of the income of a typical industrial worker (Danish Agency for Higher Education, 2015).

2.5 Continuing Education (Adult Education)

Denmark regards learning as a lifelong occupation, which often extends beyond compulsory education. The adult education system can be divided roughly into three areas. Besides the non-formal adult education, briefly touched afterwards, the General Adult Education Programme represents the most important part of continuing education (DMCEGE, 2015d).

General Adult Education (AVU) aims at adults of all ages who did not complete their education in the lower secondary level, as well as those who strive for a better basic education in order to enhance their professional and educational prospects. Approximately 90,000 students enroll in the program annually, which is regulated by the Act on General Education and is overseen by the Ministry of Education, Children and Gender Equality. Teaching takes place in one of the 29 adult education centers (VUC) or in one of its regional satellite departments. Prior to admission, all students are required to meet with a counsellor to assess their qualifications and evaluate the best possible entrance to the program (DMCEGE, 2015d).

It is possible to complete AVU with a General Preparatory Examination, which qualifies for admission to continued education on the upper secondary level (equal, but not identical, to the Folkeskole's school leaving certificate).

The AVU is predominately covered by the state and is free of charge. Students do have to pay a marginal participation fee, which is DKK 110 for the core subjects (Danish, Danish as a foreign language, English and Mathematics) and DKK 300-900 for all other subjects. Additionally, there are several ways for students to receive financial support. One possibility is to apply for the Danish State Educational Support for Adults (SVU), which is aid designed for adults with very little educational background. Students can alternatively ask for a loan or grant

[9] For a detailed overview of the Danish State Educational Grant and Loan Scheme (SU) refer to: http://www.su.dk/English/Sider/agency.aspx

from the State Education Support (SU). Lastly, students who are also unemployed can continue to receive their unemployment benefits, as long as they are active job seekers (DMCEGE, 2015d).

2.6 Teacher Education

In Denmark, two different types of pathways for teacher education exist. One is directed at those interested in becoming primary- and lower secondary level teachers (Folkeskole) and the other at the upper-secondary level.

Teaching at a primary- and lower secondary school requires a Professional Bachelor's degree in Education[10]. The four-year program corresponds to 240 ETCS and is offered at one of the university colleges. The program is composed of the following four elements:

- The teacher's foundational competences (60 ETCS)
- Main subjects (140 ECTS)
- Teaching practice (30 ETCS)
- Final project (10 ECTS)

An alternative pathway to obtaining teacher qualification is the merit-teacher program, which addresses students with prior vocational work experience or a higher education degree. This allows students to transfer credits from relevant (vocational) experience to the teacher education. As a result, the program is comparatively short and only lasts for two and a half years, or 150 ECTS (Danish Agency for Higher Education, 2015b).

Teaching at upper secondary level requires a master's degree in the respective main subject and an additional yearlong pedagogical education. This program is incorporated into the first year of employment and is divided into two parts. The theoretical part (20 ECTS) is concerned with pedagogical methods and competencies, whereas the practical part gives students the chance to gain teaching experience under the guidance of certified teachers. Students are expected to secure a training position shadowing a teacher before this year of pedagogical education begins. Participants are afterwards qualified to teach at STX, HF, HTX and HHX. However, in order to teach vocational subjects at HTX or HHX a minimum of three and a half years of relevant professional experience are required (DMHES, 2015d).

[10] For more information about the professional bachelor and university colleges please refer to chapter 3.2.2.

3. The System of Vocational and Professional Education and Training

In this section of the Factbook, the vocational education and training system at the upper secondary level, the professional education and training system at the tertiary level, as well as other important characteristics of the education system will be described.

3.1 Vocational Education and Training (VET; Upper Secondary Education Level)

Vocational Education and Training plays a key role in the Danish education system on the upper secondary level and serves the purpose of facilitating a smooth transition to the labor market (CEDEFOP, 2014a). In 2012, about 46 percent of the students at the upper secondary level were enrolled in a vocational program, which is just above the OECD average (44 percent) and slightly below the EU average (50 percent) (OECD, 2014c, p. 314). Despite this seemingly good performance, the Danish VET system has to grapple with an alarmingly high drop-out rate of almost 50 percent. This is partially caused by the lack of attractiveness of the VET path and partially due to a lack of apprenticeship positions. The actual rate might be lower, students who simply change to another VET program are also included in this statistic (European Commission, 2015, S. 16).

Subsequently, three main aspects of the upper-secondary VET system are analyzed in more detail. In the first section, the Vocational Education and Training (VET) system and its equivalents are introduced. Different transitional- and supporting programs are highlighted in the following section, and finally, the adult VET becomes the center of attention.

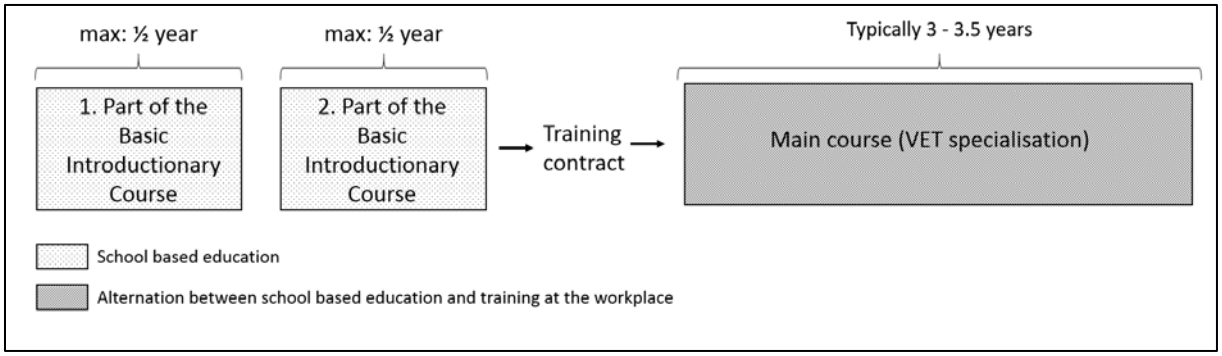
3.1.1 Vocational Education and Training (VET/EUD)

Among the three different ways to obtain a qualifying vocational education, the Vocational Education and Training system (VET or EUD in Danish) is by far the most popular track and accounts for approximately 97 percent of new students entering a vocational education program at the upper secondary level (DMCEGE, 2015e).

A reform of the Danish VET upper secondary system came into effect on the 1st of August 2015. Any moderate changes only apply to students who started their VET after this cut-off date, so presently the majority of current students are not affected (DMCEGE, 2014, p. 3).If you wish to gain a more comprehensive overview of the reform, please refer to chapter 4.

As illustrated in Figure 6, the VET (EUD) program is divided in an entirely school-based basic program and a specialized main program. During the latter, studying at a vocational college alternates with practical training at a company.

Figure 6: Schematic structure of the VET (EUD)



Source: Own figure, adapted from (DMCEGE, 2015f)

The first part of the basic course equips students with the skills that continue to support and guide them in further decisions about their education. After a period of at most half a year, students choose one of the twelve basic programs displayed in Table 5. The second part of the basic program conveys the essential skills and knowledge in the respective field and qualifies the student to begin one of the associated specific main courses (DMCEGE, 2015f).

Table 4: VET basic courses and number of associated main programs (applies for students who started their education prior to 1 August 2015)

Basic courses	Main programs	Specializations and steps
1. Motor vehicle, aircraft and other means of transportation	6	22
2. Building and construction	15	38
3. Construction and user service	3	6
4. Animals, plants and nature	9	31
5. Body and style	3	4
6. Human food	11	29
7. Media production	7	10
8. Business	8	25
9. Production and development	30	71
10. Electricity, management and IT	7	27
11. Health, care and pedagogy	4	7
12. Transport and logistics	7	31
Total	**110**	**301**

Source: Own table, adapted from (DMCEGE, 2014, p. 7).

With the aim to simplify the students' selection process at an early stage of their educational career in VET, the 2015 reform reduces the 12 basic programs to four new main subject areas (DMCEGE, 2014, p. 10):

- Care, health and pedagogy
- Office, trade and business service

- Food, agriculture and experiences
- Technology, construction and transportation

Participation in a main course requires students to sign a training contract with a company, as 50 – 70 percent of the dual education takes place in the form of practical training. Unlike the Swiss dual system, there is no alternation between school based education and practical training in the course of a week. Rather, the education is split in blocks varying from five to ten weeks. Students who successfully complete a basic course are guaranteed the opportunity to finish one of the main programs within the corresponding cluster. If a student is not able to obtain a training contract with a company, a school-based practical training conducted by a college is provided for them (DMCEGE, 2015f).

Admission to the basic programs is generally free of charge to everyone who completed the mandatory Folkeskole (or equivalent) with a grade of at least 2 in the subjects Danish and Maths in the final examination or has a valid training contract with a company. Students under the age of 18 need to possess a training contract or be assessed as "study-ready" (CEDEFOP, 2014a, p. 20). Students who do not meet these admission criteria after level 9 of Folkeskole have the possibility of entering a new vocationally oriented track, due to the 2015 reform. This new one year program, called "EUD10," is allocated at level 10 and intended to provide students with the necessary skills for VET (DMCEGE, 2014, p. 15).

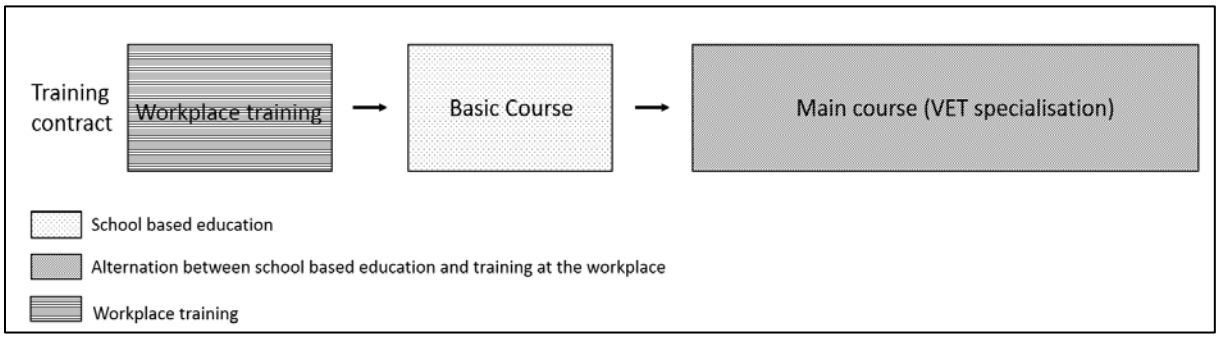
On average, the first and second parts of the basic course take 20 weeks each. Before the 2015 legislation was passed, reductions and extensions of the program were possible, depending on the students' prior qualifications and future ambitions (DMCEGE, 2015f). From August 2015 onwards, the duration of the basic course can no longer be changed. This can lead in many cases to a lengthy overall duration of the VET, which is based on the duration of the main program and can vary, depending on the program, from one to five years. (DMCEGE, 2014, p. 10).

Many of the programs are subdivided into several steps and specializations, each tailored for a specific position in the labor market. In total, this currently amounts up to 110 main programs with 301 steps and specializations (DMCEGE, 2014, p. 7). Due to the subdivision into steps, students can suspend their training at certain predefined stages and enter the labor market with a partial qualification, all without losing the possibility to resume their vocational education later on (CEDEFOP, 2014a, pp. 18-19). In the following, the main program "veterinary nurse", which in turn contains the two specialization "veterinary nurse, small animals" and "veterinary nurse, horses", will be used as an example to describe this principle. Both specializations last for three years and two months. However, after one year and 10 months, students reach the step "veterinary nursing aide," which qualifies them for a corresponding position in the labor

market (CEDEFOP, 2014a, p. 19). Such a qualification is awarded after having successfully completed a step-test, typically conducted by the school and an external examiner. The final exam consists of a practical and/or theoretical part and is designed to assess whether the students meet the ultimate aims stated by the program (DMCEGE, 2015g).

In 2006, despite the predominance of the traditional VET program, the Danish government introduced alternative pathways for obtaining a vocational qualification in order to improve the completion rates in the vocational sector. With the launch of the New Apprenticeship in 2006, students have the possibility to commence their vocational education with a yearlong work placement in a company. By completion, the total length of the education is identical to the conventional VET program, but the learning process is organized differently (DMCEGE, 2015h). The program especially targets students who might have difficulties with an initial school-based education, versus gaining practical experience first. Nevertheless, the students have to meet the same final goals as in a conventional VET program (CEDEFOP, 2014a, p. 31).

Figure 7: Schematic structure of the New Apprenticeship



Source: Own figure, adapted from (DMCEGE, 2014, p. 6)

The student, company and school have to agree on an individual training contract that fixes specific learning goals and covers the entire New Apprenticeship before the initial working placement is complete. The workplace training ends with a practical project, which is part of the overall evaluation of the students' skills and performance. If the transitional requirements are met, students are allowed to continue in the conventional dual system (DMCEGE, 2015h).

Since 2010, a combination of both vocational and general upper secondary education (EUX) is in place that offers students the possibility to obtain a qualification that simultaneously provides access to higher education and the labor market (CEDEFOP, 2014a, p. 35). Theoretically, the program can be implemented for all commercial and technical vocational education programs. The 2015 reform aims at increasing the number of EUX programs significantly, as only 17 were previously available. Overall, the EUX program structure is very similar to the previously discussed VET program, but differs with regard to the length. It starts

with the same basic program and is followed by a main program in which school based education alternates with practical training. In order to ensure the students' ability to study, the program contains extended school based blocks and recurring examinations, which together lead to a prolonged program duration compared to the conventional VET program (DMCEGE, 2015i).

3.1.2 Transitional Programs

Young people who are unable to enter or complete another form of education, or need further clarification with regard to their future educational path, have the opportunity to enroll in one of the three existing transitional programs.

The first transitional program, so-called *production schools,* are aimed at young people under the age of 25 who have either dropped out or not begun their education, some of which are not yet qualified to start one. . The aim of production school is to equip students with the skills and knowledge that are necessary to complete an educational program at the upper secondary level. The around 80 production schools across the country are independent, meaning they are free to organize their curriculum according to their own wishes and local needs. Teaching is typically divided into practical work (in school-based workshops), education in general subjects and practical training. Up to one third of the time at a production school can be spent on instruction in numerous general subjects such as mathematics, languages, social sciences, and computer-science. The number of workshops offered depends on the size of the school. Subjects range from metals, wood and textiles to cuisine, organic gardening and farming to IT, video and multimedia. Most of the products created during the workshop are designated for sale. It is also possible to gain work experience through shorter work placements in private or public companies (Education Ministry, 2015).

Students can start attending a production school at any time, given that there is a vacancy. The duration of the participation is limited to one year (DMCEGE, 2015j). It is important to note that a student can only be admitted to a production school if the participant has a state grant and was identified through the Youth Guidance Centre as a suitable candidate. Although there are no exams in production schools, students receive a certificate of competence, which can be used as proof for further education (Education Ministry, 2015).

Basic Vocational Education and Training (EGU) is the second vocational transitional program at the upper secondary level. It is an individualized program aimed at young people under 30 years who are neither in education or training (also not in production school), nor employed, nor eligible for education on upper secondary level Consequently, the objective of the EGU is to convey the necessary skills for pursuing another training program or entering the labor

market. The program typically prepares the students for an assistant function within a particular industry (CEDEFOP, 2014a, p. 32).

Like the VET program, EGU is organized according to the dual principle, in which school-based education alternates with practical training in a private or public company. The duration of the program varies from one and a half up to three years. School-based education amounts up to one third of the program (20 to 40 weeks) and practical training represents the remaining two thirds (DMCEGE, 2015k). Students and EGU supervisors agree on a study plan that takes the student's current competencies and wishes into account and defines the specific teaching and learning content. With regard to the school-based education, EGU takes advantage of a large number of already existing vocational programs. This means students can compile their curriculum with elements from the VET main programs or production schools. If they enroll in another educational program later on, the relevant credits can be transferred. Unfortunately, while the companies that offering training places for EGU students need to be sufficiently qualified, most cannot be approved for the VET program (DMCEGE, 2015k).

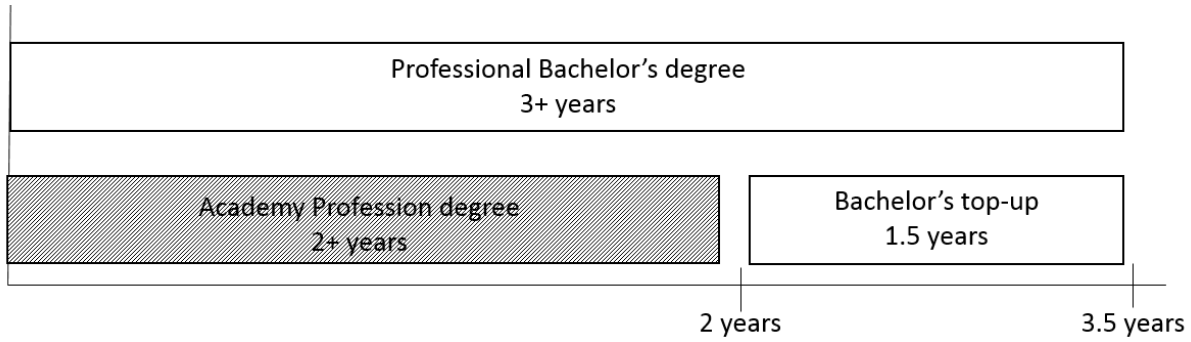
One noteworthy feature of the EGU program is the so-called positive interruption. If a student obtained the necessary skills and demonstrated the will to continue with another education or training program, or successfully entered the labor market, a discontinuation of the EGU program is considered suitable (DMCEGE, 2015k).

The first transitional program, so-called The *New Combined Post-Compulsory Education,* is a program established in the course of the 2015 reform, exhibiting, to some extent, similar characteristics to the EGU program. It aims at students between 15 and 24 years who do not have the necessary skills to complete a vocational or upper secondary education. The program's capacity is limited to 2500 entrants per year and qualifies for an assistant position in one of about 10 centrally defined occupational fields. The two year program will be terminated by 2021 if not decided otherwise.

3.2 Professional Education and Training (PET; Post-Secondary Level)

The Danish Professional Education and Training System is characterized by two qualifying degrees and composed of three different elements, as illustrated in Figure 8. Students can either obtain a Professional Bachelor's degree in three years or opt for the short-cycle Academy Profession's degree (AP). After the two-year AP program, students can upgrade their degree with a 1.5 year long Bachelor's top-up program. This combination is equivalent to a full Professional Bachelor's degree (Study Start, 2015a).

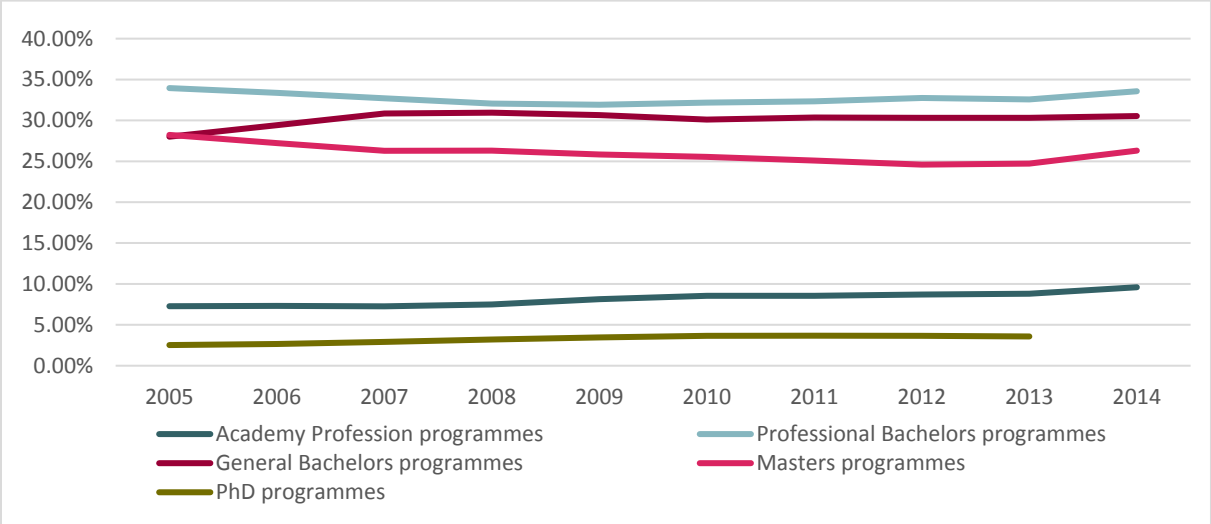
Figure 8: Overview over the Danish Professional Education and Training System



Source: Own figure, adapted from (Study Start, 2015a)

As indicated in Figure 9, the share of students enrolled in the AP programs within higher education increased continuously from 7.3 percent in 2005 to 9.6 percent in 2014. Compared to the general higher education programs, the AP program only accounts for a small part of higher education. In contrast, over the last nine years, the Professional Bachelor program was constantly the largest program. Overall, in 2014, 57 percent of all students in higher education were enrolled in a general program and 43 percent in a vocational program (Statistics Denmark, 2015b).

Figure 9: Distribution of students enrolled in higher education by program and year



Source: (Statistics Denmark, 2015b), own calculations

3.2.1 Academy Profession's Degree

Most Academy Profession's degrees (ISCED 5B) are awarded after two years. In order to be granted such a degree, students have to earn 120 ETCS credits. The program consists of a compulsory and an elective part, as well as a work placement lasting for at least three months and a final project. During the mandatory part, students gain the key knowledge and skills to independently solve and analyze real-world problems. Theory is always oriented towards

practical application in the respective industry. During one day, emphases on teamwork, theoretical lessons and practical training can be seen. To secure the practical relevance of the teaching content, the project assignments are often based on authentic case-studies from real companies.

There are 29 different AP programs in the following fields: Business and Economics, Technology, Information Technology, Laboratory Technology, Social Sciences, Design and Healthcare. The individual programs are strongly practice-oriented and geared towards particular professions, such as Logistics Management, Multimedia Design and Communication, Automation Engineering or Agro Business and Landscape Management (DMCEGE, 2015l). Some of the programs offer specializations, such as Automotive Technology, in which students can specialize in racing cars or in road cars. In the specialization 'road cars,' Students learn how to use advanced electronic and mechanical automotive systems to discover errors and fine tune the car and its engine. In addition, the program covers relevant economic conditions and factors affecting a garage or car importer. One can see how teaching combines courses in advanced car technology with business elements such as marketing, sales and management skills (Study Start, 2015b).

To be admitted to an Academy Profession program, one must have completed a general upper secondary or a relevant vocational education. Additional subject related requirements might apply in some cases, i.e. a certain level of English or math (DMCEGE, 2015l). The AP programs are offered at nine independent Academies of Professional Higher Education across Denmark. They are intended to play a key role in the government's effort to increase the share of graduates of higher education to 60 percent by 2020. The Academies shall also act as the driving force behind the development of new technical and commercial programs (DMHES, 2015c).

An Academy Profession's degree not only qualifies one enter the labor market but also opens the door to further education, as it is considered equivalent to the first two years of a Professional Bachelor's degree. Students can directly continue their education with a top-up Bachelor's program, leading to a full Professional Bachelor's degree (ISCED 5A). A top-up program takes 1-1.5 years (90 ETCS) and provides students with a high degree of flexibility on their educational pathway. Currently, there are 20 top-up degrees, in subjects such as E-concept Development, Design Fashion and Software Development. Admission requires a completed AP in a relevant field and an English certificate for some programs (Study Start, 2015c).

3.2.2 Professional Bachelor's Degree

A Professional Bachelor degree (ISCED 5A) is a labor-market-oriented program, combining theoretical knowledge with practical application. The duration of the program varies between three and four years and accounts for 180 – 240 ECTS, depending on the subject. Similar to the AP program, the Professional Bachelor's degree is directed towards specific professions, e.g. schoolteacher, nurse, journalist, social-worker or engineer (CEDEFOP, 2014a, p. 27). Students can choose from 47 programs in the areas Education (7), Healthcare (10), Social services (2), Technology (6); Media and Communication (13) and Commerce (9) (University Colleges Denmark, 2014, pp. 13 - 15).

Teaching aims at providing a solid theoretical foundation together with an understanding of how to apply that theory to a professional setting. The programs include a mandatory work-placement for six months and a bachelor thesis in the final semester (UCN, 2015). The design of the curriculum varies and is highly dependent on the respective profession's requirements.

The program "IT and Electronics Engineering" is used to exemplify the content and structure of a Professional Bachelor program. Graduates with this degree typically work in the areas of Software Engineering, Information Technology and Data Communication. Consequently, students focus on two main fields: System Development and Programming, with narrower subject areas, such as Digital Signal Processing and Mathematics, Databases or Computer Networks. After the basic courses, students choose between five different specializations, e.g. Digital Design, Mobile and Wireless Communication or Object Oriented Programming (Study Start, 2015c).

Just as for the AP program, admission to a Professional Bachelor's program requires a degree in a relevant vocational education and training program or a general upper secondary education degree. Additional subject-related conditions, e.g. mathematics or English, might apply (CEDEFOP, 2014a, p. 26). Traditionally, the vast majority of graduates of Professional Bachelor programs are employed in the public sector, for example as teachers, nurses or social workers. In contrast, many of the newer programs are geared towards the private sector (OECD, 2012).

Professional Bachelor programs are offered at seven independent university colleges across Denmark. After completing a Professional Bachelor's degree, it is possible to apply for a graduate program at a research university according to the conditions outlined in section 2.4.

3.3 Regulatory Framework and Governance of the VPET System

This section summarizes the governance and legal aspects of the vocational education and training sector. It clarifies how the powers and duties are distributed and who has a say in which aspect of the system. In the following, the term vocational and professional education and training (VPET) refers to both the vocational education and training (VET) at the upper secondary level and the professional education and training (PET) sector at the tertiary level.

3.3.1 Regulatory Framework

The Danish Parliament ("Folketing"), in its capacity as legislator, enacts the relevant provisions of statutory law ensuring a well-functioning and high-quality system of vocational education and training. This legal framework is supplemented by subordinate ministerial orders dealing with more technical details, such as the specific regulation of each vocational program offered on the upper-secondary and post-secondary level[11]. Various stakeholders, such as the social partners, representatives of the educational institutions, regional interest groups and local authorities are strongly involved by advising the ministries in charge and negotiating the specific content of the education and training programs with regard to the needs of economy and of the different actors involved.

In addition to the above mentioned top down regulation and adjustment approach, vocational teachers in the vocational education and training system at the upper-secondary education level are legally obliged to establish a personal education plan for each student in close consultation with the apprenticeship company. Thereby, tailor-made programs can be offered, taking into account the capacity and needs both of students and companies.

On the post-secondary education level, based on stakeholder consultation, the ministry in charge legally determines a nation-wide standard content for all the programs available, leaving the possibility for the various educational institutions to stand out by offering a broader version of the programs.

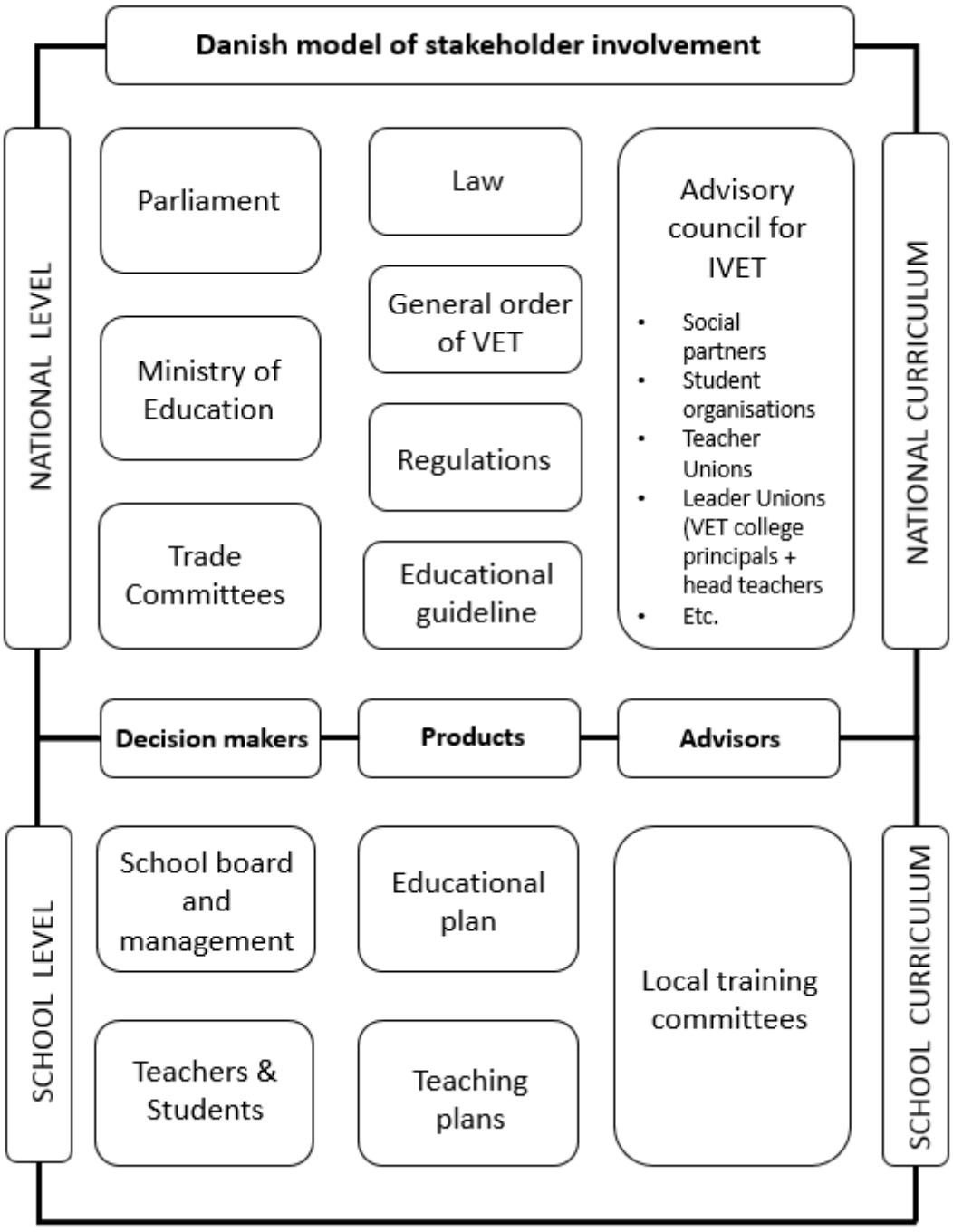
3.3.2 Governance

The Danish VET system is devised by a high level of stakeholder involvement. It is centralized with regard to the establishment of recognized qualifications on a national level, but contrastingly has the decentralized quality of being able to adapt to local needs. Its dual nature requires a close and institutionalized cooperation between public authorities and the social partners to ensure that vocational education meets the labor markets' quality demands[12].

[11] For a more detailed overview of the Danish regulatory framework please refer to Appendix 2.
[12] According to the European Trade Union Confederation (ETUC) social partners are „the bodies representing the two sides of industry: the employers and the employees" **Invalid source specified.**.

Thereby, it is a key point that social partners are incorporated in the governance of the VET system through a number of committees and councils at the national, sectoral and even at the local level. A result of this model of stakeholder involvement, which is based on consensus and shared responsibilities within clearly defined boundaries, is illustrated in Figure 10 (DMCEGE, 2008b, p. 15).

Figure 10: Danish model of stakeholder involvement in the VET system



Source: Own figure, adapted from (DMCEGE, 2008b)

Governance of the VET system

i. Public authorities

As mentioned in the previous section, the Danish parliament enacts the relevant legal framework and outlines the overall structure of the VPET system. No less important is the Danish Ministry for Education, Children and Gender Equality, which bears the responsibility for general education policies and assuring their congruency with existing VET programs. In addition, the Ministry defines the general aims of the VET system and establishes the framework within which other stakeholders adjust and implement the curriculum. Based on the Advisory Council for VET's recommendations, the ministry is responsible for approving new VET qualifications. Its remit also includes inspection and quality assurance, both of which are considered to be of growing importance (DMCEGE, 2008b, p. 16).

ii. Advisory council for VET

An important actor at the national level is the Advisory Council for VET. The Council consists of 25 representatives who are social partners, school leaders, teachers and the Danish Ministry for Children, Education and Gender Equality (DMCGE) (DMCEGE, 2008b, p. 17). Its main duty is to monitor labor market trends. Based on the resulting recommendations, the DMCEGE creates new VET qualifications or abandons programs no longer demanded on the labor market. Other concerns of the Council are supervising existing programs, improving their coordination and initiating program mergers as necessary.

i. National Trade Committees

The approximately 50 National Trade Committees (NTC) are primarily responsible for the 110 VET programs and are therefore considered to be the heart of the VET system. Employer and employee organizations evenly constitute the members of the committees, with a total of 10 to 14 members per committee. It is their responsibility to continuously adjust and develop the VET programs according to the labor market's needs. They have a key role in defining learning goals and examination standards, as they know best what key competences are currently in demand. In line with the provisions of the legal framework, they set the regulatory boundaries for the individual programs. This means trade committees are in charge of defining the programs' characteristics such as duration, ratio between school based education and practical training in a company, and which trade offers a certain program. They define the content, the assessment and hold the actual examination, thereby functioning as gatekeepers to the trade. In addition, trade committees are responsible for the approval of training companies. The trade committees arbitrate potential conflicts between enterprises and

apprentices and issue certificates of apprenticeship. Finally, trade committees keep up contact with stakeholders (CEDEFOP, 2014a, p. 49).

ii. Local Training Committees

Local training committees are associated with individual colleges. Their role is to facilitate a close relationship between the local community and the vocational committees by providing sufficient local training placements. Consisting of representatives from firms (employers and employees) and colleges (teachers and trainees), the training committees function mainly as general advisors concerning the VET programs. In joint cooperation, they decide on the specific curriculum, including available optional subjects at each college. They also assist the National Trade Committees by providing recommendations which local enterprises to approve as training establishments (CEDEFOP, 2014a, p. 49).

iii. School board and Management (of the colleges)

The School board and management is responsible for the general daily operation of the colleges as well as the development of the local education plan. A list of the elements that must be included in an education plan is stated in the Act on Vocational Education and Training. Such a plan is dedicated to the methodological and didactical principles employed in training and how the apprenticeships are integrated into the feedback and teaching development process. It also contains specifications of technical equipment, and descriptions of teacher qualifications and the personal education plan, etc. (DMCEGE, 2008b, p. 20).

Governance of the PET system

The situation of governance presents itself differently at the post-secondary level. The nine academies of professional higher education and the seven university colleges are independent institutions under the Act on Academies of Professional Higher Education and the Act on University Colleges of Higher Education respectively. Within these legislative frameworks, each of them is governed by their own board of directors, which is responsible for the general and strategic development of the education (DMHES, 2015b; DMHES, 2015f).

The board of directors at an academy consists of 9-13 members. In the majority of cases, the board is comprised of external members who represent regional and local interests as well as the social partners. Besides the above mentioned general tasks, the board is also responsible for educational activities and the general operational management (DMHES, 2015f; Act on professional higher education, 2013)

The university colleges are governed by boards of 10-15 members, which have the responsibility for the institution’s strategy as well as the quality and development of the

education (DMHES, 2015b). The Board members are usually representatives of the local and regional government, students and teachers. Members are also expected to have experience in university college education, management or business and to know the labor markets' needs (OECD, 2012).

3.4 Educational Finance of the VPET System

In 2011, with a total expenditure of 7.9 percent of its GDP, Denmark was for the second time in a row the OECD country that spent the largest portion of its GDP on education. Denmark's specifically public expenditure on education, which amounts up to 15 percent of total public expenditure, is also above average (OECD, 2015h). Public funds in the form of state grants represent approximately 80 percent of the educational institutions income from 2011. The remaining part is raised through income generating activities (DMCEGE, 2015o).

Further analysis reveals that 92 percent of state funding is provided through the taximeter system. This means state grants are determined by the activity level of its institutions and the politically defined taximeter rates. Activity level refers to the schools' performance in terms of its annual number of fulltime student equivalents. The taximeter grant for an institution is calculated as the number of fulltime student equivalents multiplied by the taximeter rate. Due to their financial independence, the institutions are relatively free to spend these funds according to their needs. However, spending is restricted within a certain framework (DMCEGE, 2015o).

To address particular institution-specific circumstances, the taximeter system features three different taximeter rates and a number of very specific adjustments. The teaching rate is intended to bear costs that are directly linked to teaching, e.g. salaries or teaching materials. The building and maintenance costs, e.g. building rental or mortgage debt, are included in the building and maintenance taximeter rate. The collective expense rate was created for all other expenses, such as administration and management costs, that cannot properly be assigned to an individual program (DMCEGE, 2015o).

In order to ensure the necessary financial flexibility, the taximeter system is accompanied by another allocation mechanism, called the basic grant, which fosters desirable political objectives. In order to achieve an equal regional distribution of educational institutions, two basic grant models were established. One is activity-based and designed to support the institutional structure. The other is an activity-independent grant, designed as a redistribution tool to compensate remote and smaller institutions for their relatively higher unit costs (DMCEGE, 2015o).

Apart from the basic grants, the taximeter system is supplemented by a few objective-defined funding instruments. As the taximeter system only supports existing programs, such instruments are necessary for quality development and the promotion of politically desirable outcomes. Multi-year agreements represent a financing tool that allows for the allocation of grants for a project that has met specified criteria. On the downside, this means a high administrative effort for a comparatively small amount of money. Another example is research and development funds (so called pool allocations), which are primarily used to support particular academic projects (DMCEGE, 2015o).

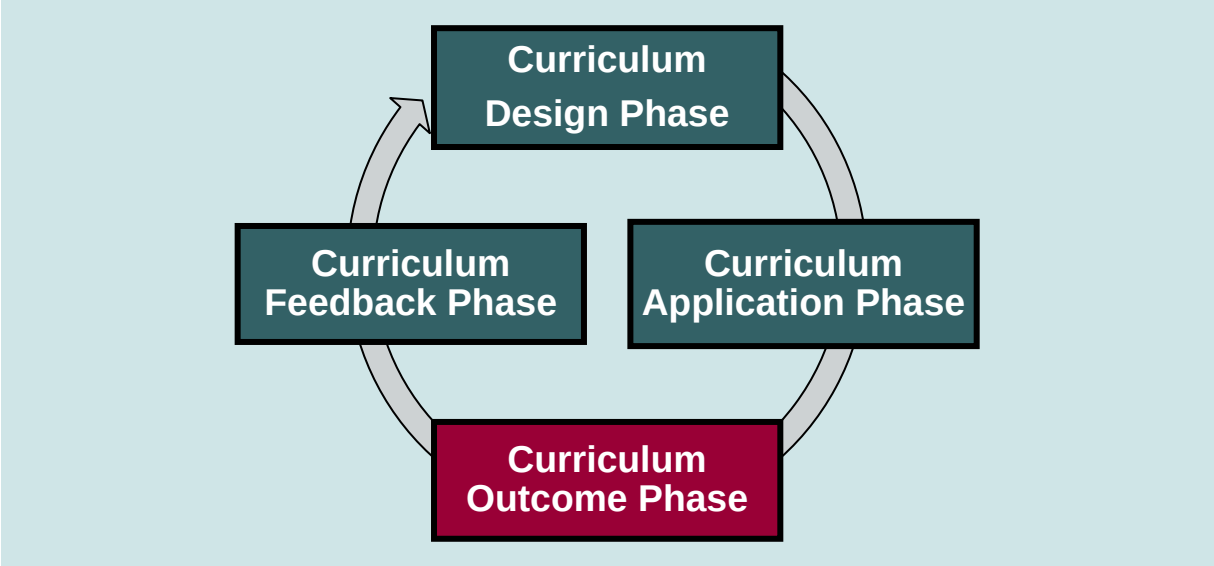
The remaining 20 percent of the institution funds are raised by the institutions themselves through income-generating activities in free competition with private companies. Activities like these allow the institutions to finance supplementary or new needs, though of course they have to be in line with the regulatory framework (DMCEGE, 2015o).

Another matter of expense not covered by the taximeter system are student wages in vocational education at the upper secondary level. Companies are responsible for paying wages to the student who is interning on a vocational school contract and in return, they get reimbursed by the Employer's Reimbursement Fund while students attend school. All employers, regardless whether private or public, contribute a fixed annual amount of approximately 400 euros to this fund (OECD, 2014e).

3.5 Curriculum Development

The curriculum is a central element for the functioning of a VPET system by defining the framework and the standards for the education system. The development of a curriculum can be decomposed into a three-step process of curriculum design, application and feedback. This theoretical concept is called the Curriculum Value Chain and is depicted in the picture below (CVC; for more details see (Bolli, et al., 2016)).

Figure 11: Curriculum Value Chain (CVC)



Source: (Bolli, et al., 2016)

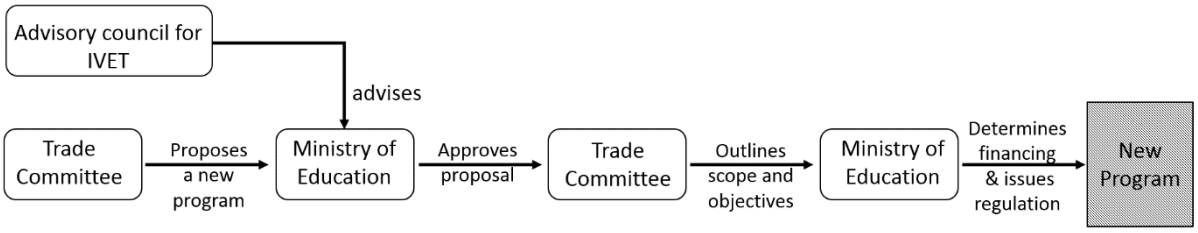
In the curriculum design phase, VET curriculum content and qualification standards are decided upon by the relevant actors. The discussion in the subchapter below focuses on the degree and the amount of stakeholder participation concerning curriculum design in the Netherlands. The curriculum application phase revolves around the implementation of the curriculum. Because learning environments differ heavily across countries—especially with respect to the prevalence of workplace learning—the curriculum application subchapter in this Factbook focuses on those learning environments. Specifically, it addresses where learning takes place and whether the curriculum dictates both school and workplace learning or only one of the two. Finally, curriculum outcomes can be collected and analyzed in the curriculum feedback phase. This evaluation process is important as the feedback may render a more refined curriculum design.

3.5.1 Curriculum Design Phase

Social partners of the VET system and the Ministry of Education carry out the curriculum design process in a joint effort, as illustrated in Figure 12. Each of the currently 59 existing trade committees is represented by one social partner, who is in turn responsible for at least one program.

On the national level, the curriculum design process is initiated when one of the national trade committees identifies a need. They compose a proposal for a new or adapted curriculum, which includes recommendations concerning skills and competencies required on the job. Such a proposition must be backed by qualitative and quantitative data regarding the design of practical work training, estimated employment opportunities and the scheme's intake per year.

Figure 12: Curriculum design process



Source: own figure, based on: (CEDEFOP, 2014b, p. 45)

The proposal is then forwarded to Ministry of Education for evaluation, which relies on the Advisory council for VET's assessment to ultimately reject or approve the proposal (CEDEFOP, 2014b, p. 45). In the latter case, the trade committee is in charge of outlining the program's scope and objectives. The trade committee determines the program duration, design of practical training, entry and transition requirements, ratio between school-based education and practical training and academic matters like school subjects during the main course. Subsequently, the Ministry of Education defines the financial aspects and issues a regulation, containing the program's cornerstones: objectives, content, assessment and examinations (CEDEFOP, 2014b, p. 45).

Besides this predominantly centralized policy-making process, vocational colleges and social partners also have a say on the regional and local level. Local training committees assist vocational colleges in adapting VET programs to the particular needs of local businesses and industries (CEDEFOP, 2014b, p. 46).

On the post-secondary level, the educational institutions (academies of professional higher education and the university colleges) are able to determine their curriculum independently within the relevant legal framework (DMHES, 2015b; DMHES, 2015f).

3.5.2 Curriculum Application Phase

The implementation of the curriculum, especially in relation to the learning environment, is crucial to its success. In Denmark, the curriculum of the VET programs at the upper secondary level is typically implemented in two different learning and training locations: the host company and the vocational school. For a more comprehensive overview, please refer to Chapter 3.1 for the VET system and Chapter 3.2 for the PET system.

3.5.3 Curriculum Feedback Phase

Evaluating education outcomes and applying that feedback to the system is key for continuously improving the quality of the VPET programs and ensuring the congruency between VET objectives on the national level and the locally-shaped VET programs.

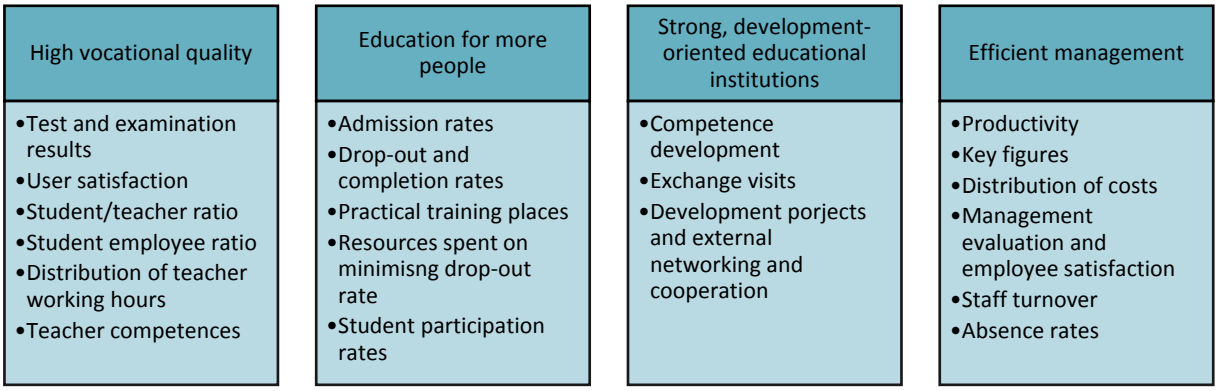
In Denmark, this task is performed by public authorities and central stakeholders through a number of complimentary mechanisms, establishing a system of constant dialogue.

Learners, as the target audience, play an institutionalized role in VET under the Danish Act on Vocational Education and Training. Students able to influence not only their own training on a day-to-day basis but also the overall learning environment. The latter is achieved through student councils at vocational colleges. Students are represented in the board of directions and have the opportunity to influence the specification of the programs at the local level. In the context of major reforms, the Ministry of Education conducts surveys which allow students to voice their own opinions (DMCEGE, 2008a, p. 8).

The involvement of social partners is an inherent part of the Danish VET system and reduces the demand for external quality control, as both employers and employees are able to contribute their experiences during the curriculum development phase. Additionally, all companies are asked to conduct an internal evaluation on a regular basis to assess their own performance. In order to balance trust with control, these evaluations are accompanied by external evaluation measures through public authorities (DMCEGE, 2008a, p. 15).

Even though no designated national evaluation body exists, the DMCGE inspects VET providers on a regular basis in order to verify that the companies still fulfil all the necessary conditions to be approved as training establishments. Alongside this routine, the Danish Ministry for Children, Education and Gender Equality conducts legal, financial and pedagogical analysis to compile reports, based on a number of varying inputs, e.g. data, site visits and meetings with stakeholders. With the aim of further strengthening the monitoring of vocational colleges, the DMCGE developed the Annual Resource Report for the educational system in 2007. The indicator framework, illustrated in Figure 13, enables a more systematic data handling and thereby enhances the benchmarking process (DMCEGE, 2008a, p. 25).

Figure 13: Annual resource report indicator framework



Source: Own figure, based on (DMCEGE, 2008a, pp. 37 - 38)

More broadly positioned is the Danish Evaluation Institute (DEI), which represents an independent body for evaluation and quality assurance for the entire education system. The DEI has surveyed and evaluated multiple aspects of Denmark's VPET system (DMCEGE, 2008a, pp. 28 - 29).

Due to the institutional independence of and differences between the academies of professional higher education and the university colleges, it is not possible to identify a standard feedback process. Nevertheless, the Code of Conduct for Danish Institutions of Higher Education asks educational institutions to perform quality checks on a regular basis (Rectors' Conference – University Colleges Denmark & Academies of Professional Hihger Education Denark , 2010, S. 5). To fulfil the quality checks, institutions such as the University College Capital or the Business Academy Aarhus have designated quality assurance units (University Colleg Capital, 2014; Business Academy Aarhus, 2015).

3.6 Supplying Personnel for the VPET System (Teacher Education)

There are two different pathways to become a teacher in the VPET system, resulting in two distinct teacher profiles: general subject teachers and vocational subject teachers. General subject teachers typically hold a university or a Professional Bachelor's degree in teaching. This corresponds to the teacher education in general education and was introduced in Chapter 2.6.

In contrast, vocational subject teachers typically come from a vocational background with considerable experience in the field. There is no pedagogical qualification required prior to their employment. New teachers are asked to enroll in a diploma degree program in vocational education within their first year of employment at a VET college. The program is the official training for vocational teachers and is affiliated to vocational adult education on tertiary level (DMCEGE, 2015l).

The program takes one year (60 ECTS) to complete as a fulltime study. In most cases, however, it is conducted as part-time in order to complement training with practical experience (CEDEFOP, 2014a, p. 57). The curriculum of the diploma program in vocational education is composed of three compulsory modules, two optional modules and a final project (DMCEGE, 2015m). Admission requirements include completion of a relevant education on the upper secondary level and at least two years of relevant professional experience (DMHES, 2015e).

Table 5: Curriculum of the diploma program in vocational education

Compulsory modules		
Teaching and learning	10 ECTS	Characteristics of different teaching and learning methods
Educational planning and didactics	10 ECTS	Implementation of a syllabus and didactics
Educational science	5 ECTS	Theoretical educational positions and plus evaluation and validation of professional knowledge
Optional modules (2 out of 4)		
Enterprises and the educational system	10 ECTS	Implementation of a vocational educational development
Participants in VET	10 ECTS	Theories and methods to qualify participants in VET
Digital technologies in vocational education	10 ECTS	Theoretical and practical knowledge about the use of digital technologies in VET
Practice-related training in vocational education	10 ECTS	Development of interaction between theory and practice in an interdisciplinary context
Final project		
Final project	15 ECTS	Based on a real problem in the institution you are employed

Source: (DMCEGE, 2015n)

There is no specified teacher education for vocational teachers on tertiary level. According to the ministerial order on academy profession programs and professional bachelors teachers must have a higher qualification level than can be achieved through completing the respective program (2013).

In-company trainers are the second part of the personnel supply in vocational education, but they receive significantly less attention. These instructors are often experienced employees in the respective field, and to obtain such a position does not require any teaching qualifications (CEDEFOP, 2014a, p. 58).

4. Major Reforms in the Past and Problems for the Future

This chapter is divided in two sections. In a first section, major reforms from the near past are highlighted before the focus shifts towards future problems and how they are addressed through the 2015 reform.

4.1 Major Reforms between 1989 and 2007

The major reforms in the Danish educational system since 1989 can be summarized as follows (DMCEGE, 2008b, pp. 41-47):

- In a major reform of the VET system in 1989, the fixed national curriculum was replaced with a system of more autonomy for the colleges to adjust the educational plans to the

needs of local industry and labor market. Thereby the colleges' institutional status was changed to independent public organizations, financed through the taximeter system instead of a fixed budget.

- In 1996 the commercial programs' goals, content and overall framework was reformed with the aim of creating more flexible and competence-based programs.
- Four years later, in the year 2000, the technical programs were reformed. Instead of choosing among 83 different programs right at the beginning of their VET, students were offered a selection of 7 broad basic programs, which are highly flexible in terms of duration and content.
- In 2003, a common regulatory framework for commercial and technical programs was created, called Act no. 448. Specializing within the programs became possible at earlier stages.
- Act 1228, in late 2003, enabled shorter and more flexible programs with partial qualification aimed at weak learners.
- With the inclusion of the agricultural, social and health programs in the Act on Vocational Education and Training in 2007, the VET system was simplified and became more coherent. Moreover, a number of major and minor changes were introduced, e.g. the number of basic courses was increased from 7 to 12, the curricula were revised and basic subjects were now offered at different levels.
- In 2010, the combined vocational and general upper secondary education (EUX) was established and since then has offered the possibility of obtaining a qualification that simultaneously provides access for higher education and the labor market.

4.2 Strategies of the 2015 reform aimed at present and future problems.

Enacted on the 1st August 2015, the latest major reform of the Danish VET system applies to all students entering VET from this date onwards. The reform aims at simplifying the VET system's structure, increase the completion rate and its attractiveness. Several key initiatives are intended to achieve these objectives:

- The currently 12 main courses will be replaced by four new main subject areas in order to simplify the system's overall structure and postpone the students' specialization. The duration of the main course is now fixed to two half-year periods (DMCEGE, 2014, p. 10).
- The quality of teaching in the main programs is strengthened through a minimum of 25 weekly teacher-supervised lessons (DMCEGE, 2014, p. 18).
- The number of EUX programs is significantly extended (DMCEGE, 2014, p. 14).

- Denmark aims to improve the completion rate in VET from 52 percent in 2012 to 60 percent by 2020. Therefore, minimum admission criteria in math and Danish were established. Students who don't meet them, have the opportunity to participate in a designated catch-up program called EUD10 (DMCEGE, 2014, p. 10 & 16).
- A newly combined post-compulsory education is established, aimed at people who do not possess the required skills to finish an academic or vocational upper secondary education. The program has a maximum duration of 2 years and awards the students with the title of an assistant in the respective area (DMCEGE, 2014, p. 17).

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Appendix

Appendix 1: The 7-point grading scale

Danish mark	Explanation of the mark	Equivalent ECTS mark
12	For an excellent performance	A
10	For a very good performance	B
7	For a good performance	C
4	For a fair performance	D
02	For an adequate performance	E
00	For an inadequate performance	Fx
-3	For an unacceptable performance	F

Source: (DMCEGE, 2015p)

Appendix 2: Regulatory Framework on Vocational Education and Training in Denmark

Dimension	**Explanation**	**Regulatory framework in Denmark**	
I. Overall governance		**Upper-secondary level**	**Post-secondary level**
1. Principal statute	Reference and year of publication	- Act on Vocational Education and Training (2015) - Act on Basic Vocational Education and Training (2010) - Act on Basic Subjects, Vocational Subjects and Vocational Language (2014)	- Act on Academy Profession and Professional Bachelor's Degree Programs (2014)
2. Secondary statutes	Reference and year of publication	- Ministerial Order on Vocational Education and Training (2014) - Act on Guidance in Relation to Educational and Occupational Choice (2014) - Act on the Exam giving General Study Competence to Vocational Trainees (2014) - Act on Employer's Contribution to Education and Training (2015)	- Ministerial Order on Academy Profession and Professional Bachelor's Degree Programs (2013) - Ministerial Order on Admission to and Enrolment on Academy Profession and Professional Bachelor's Degree Programs (2015) - Ministerial Order on Examinations on Professionally Oriented Higher Education Programs (2013)

		- Act on the Institutions Providing Vocational Education and Training (2015) - Act on the Danish Evaluation Institute (2015)	
3. Responsible ministry		Ministry for Children, Education and Gender Equality	Ministry of Higher Education and Science
4. National organisation			
a) Administration	Who is responsible for the nation-wide administration of VET/ PET?	Ministry of Education	Ministry of Higher Education and Science's Department
b) Representation, advice	Are there institutions representing groups such as - the "social partners", comprising the employees' as well as the employers' side, - vocational teachers, who submit expert opinions regarding VET/ PET to the competent bodies or exercise statutory powers?	Both employees and employers are represented in Trade Committees on a nation-wide sectoral and on a local level (ILO, 2010). The Trade Committees co-regulate and co-determine the objectives, content, duration and examination standards for individual vocational courses within the legal framework set out by the legislator. Additionally, the Trade Committees authorize enterprises as	The Council of Academy Profession and Professional Bachelor's Degree Programs comprises members of employees and employers associations as well as members nominated by local governments and regional interest groups (see art. 18, para. 3 of the Act on Academy Profession and Professional Bachelor's Degree Programs).

		qualified training establishments, function as settlement body for disputes between apprentices and enterprises, and issue journeyman's certificates (Rolls, 2014). The Advisory Council for Initial Vocational Education and Training, consisting of members from the social partners, school leader and teacher associations, as well as members appointed by the Ministry of Education, monitors social and economic trends and advises the Ministry on educational matters (Rolls, 2014; ILO, 2010).	
c) Mandatory representation of:	Do the three groups listed below have a say in the VET/ PET system, i.e. legally specified controlling and voting rights?		
- Employers		Yes. For more information, see above.	Represented in the Council of Academy Profession and Professional Bachelor's Degree Programs, the social partners

			are able not only to advise the Ministry of Higher Education and Science on educational matters but also to submit an annual report on the overall status and thus bringing complaints and initiatives concerning the programs (see art. 21 of the Act on Academy Profession and Professional Bachelor's Degree Programs).
- Trade unions		Yes. For more information, see above.	Yes. For more information, see above.
- Vocational teachers		Yes. For more information, see above. Acting as members of the governing board of colleges, teachers participate in deciding which programs are offered at the college and their capacity, in imposing local regulations and guidelines, in guaranteeing responsible administration of the college's financial resources including approval of budgets and accounts, and in hiring and firing the operational management of the colleges (Rolls, 2014).	Being a member of the board of a university college, teachers oversee the quality and development of their institution and of education in general (Field, et al., 2012).

5. Number of training programs (VET/ PET)	Is there a legally specified number of officially recognized VET/ PET occupations/ programs?	No. The Ministry of Education has classified the now 111 vocational education and training programs in 12 clusters based on different industry sectors. However, there are specific regulations for the different programs offered (see, e.g., Ministerial Order to Vocational Training as Bricklayer).	No. However, there are specific regulations for the respective programs (see, e.g., Ministerial Order on the Professional Bachelor Training Program, Bachelor of Leisure Management, together with the Academic Regulations on the Professional Bachelor's Degree Program 'Bachelor of Leisure Management' of the University College Zealand).
6. Minimal skill level for admission to VET/ PET programs?	This requirement of a minimal skill level guarantees the quality of the training, i.e. not any kind of on-the-job training can be termed as VET or PET in the formal sense.	In general, there is free admission for everyone having completed compulsory schooling (Folkeskole) with no regard to grades or the like. By contrast, minors must either have a training agreement with an enterprise, or be declared 'study-ready' based on an assessment of academic, personal and social competences	There are specific admission requirements, depending on the program chosen (see Appendix 1 of the Ministerial Order on Admission to and Enrolment on Academy Profession and Professional Bachelor's Degree Programs).

		conducted either by the college or the local youth guidance center (Rolls, 2014).	
7. Training duration (years)	Is there a minimum training (VET/PET) program duration?	No. According to the Ministry of Education, most programs take 3 to 3.5 years.	No. Yet, provision is made for the programs to take a certain average time (see art. 4 et seq. of the Act on Academy Profession and Professional Bachelor's Degree Programs). On the contrary, there is a legally specified maximum period of time to achieve the required amount of ECTS points of the program chosen (see art. 5, para. 2 of the Ministerial Order on Academy Profession and Professional Bachelor's Degree Programs).
8. Is there a special sort of training contract for VET/ PET students? Does it guarantee the quality of the VET/ PET	One form of misuse of training contracts could be when firms employ workers under a training contract which might be subject	All students must enter into a training agreement with a company approved by the social partners. Thus, the companies offering apprenticeships have to meet	Note: The curricula of all Academy Profession and Professional Bachelor's Degree Programs include a minimum workplace training in the course of an

programs, i.e. does it prevent misuse of the contracts for atypical employment relations? And if, what is the regulation guaranteeing this?	to lower hiring and firing regulations, tax exemptions, etc. To guarantee the quality of the VET/ PET training, a minimal skill level could be required.	certain requirements, e.g., a certain level of available technology and ability to offer various tasks in an occupation (Rolls, 2014).	internship with a private or public enterprise (see art. 4 together with art. 10 et seq. of the Ministerial Order on Academy Profession and Professional Bachelor's Degree Programs). In order to ensure the quality and contribution of the workplace training to the theoretical education a work placement agreement needs to be concluded for the internship period and every student is assigned a teacher or supervisor for guidance (Field, et al., 2012).
II. Role and content of school-based education			
1. Mandatory (part-time) educational segment			
a) In general	Is there a mandatory classroom segment for apprentices	No.	For the most part, the education is classroom-based while every student of an Academy Profession program has to

	additional to the work-based training (dual system)?	The share between classroom training and work-based training varies according to the program chosen and is determined by the Trade Committees. On average, classroom training accounts for approximately one third while work-based training accounts for the remaining two thirds of the time (UN, 2012; Rolls, 2014).	accomplish a minimum three months' work-based training and every student of a Professional Bachelor's Degree program has to accomplish a minimum six month's work-based training (Field, et al., 2012).
b) Non-adults	If not, is there a mandatory classroom segment for those under the age of legal adulthood?	No.	No.
2. Shares of the different instruction segments			
a) In general	Is the share of the different instruction segments legally specified?	Yes. Besides a general layout of the subjects and competences provided within vocational education and training, there is specific regulation for every program offered, defining the exact amount of hours to be taught per subject (Ministerial Order on Basic Subjects, Vocational Subjects and Vocational Language; see,	Yes. There is a specific regulation for every Academy Profession and Professional Bachelor's Degree programs signing the number of ECTS points to be obtained per subject (see, e.g., art. 7 of the Ministerial Order on the Professional Bachelor Training Program, Bachelor of Leisure Management, together with art. 3 of the

		e.g., Ministerial Order to Vocational Training as Bricklayer).	Academic Regulations on the Professional Bachelor's Degree Program 'Bachelor of Leisure Management' of the University College Zealand).
b) Classroom/off-the-job instruction	What is the share of classroom/off-the-job instruction as % of total time spent in VET/ PET training?	See above.	See above.
c) General education	Is the share of general education legally specified? What is the share of general education as % of classroom/off-the-job instruction?	See above.	See above.
3. Specific mandatory educational contents	Are there legally specified standards regarding the content of the classroom instruction segment?	See above. Provision is made for the classroom-based training to meet specific educational objectives (see art. 21 et seq. of the Act on Vocational Education and Training).	See above. A regulation outlines the general educational content and basic skills to be imparted by Academy Profession and Professional Bachelor's Degree Programs (see art. 2 et seq. of the Act on Academy Profession and Professional

			Bachelor's Degree Programs together with art. 1 et seq. as well as art. 7 of the Ministerial Order on Academy Profession and Professional Bachelor's Degree Programs). The curriculum of each program must contain a common part, collectively elaborated by the different institutions offering the same program, and an individual institution-specific part (see art. 16 et seq. of the Ministerial Order on Academy Profession and Professional Bachelor's Degree Programs).
4. Mandatory representation in the decision-making process about the content of VET/ PET training. Involvement of:	Are the following three groups involved in the decision-making process about the content of VET/ PET training?		
a) Employers		Representation in Trade Committees enables the social partners to adapt curricula and education methodologies to	Gathered in The Council of Academy Profession and Professional Bachelor's Degree Programs, the social partners play an active role in determining new

		labor market needs and student preferences (UN, 2012).	courses and programs and setting out new initiatives for academy. Furthermore, the Council advises the Ministry on qualification needs, the mix of provision, work placements, adult education and quality assurance (Field, et al., 2012).
b) Employees		Yes. For more information, see above.	Yes. For more information, see above.
c) Vocational teachers		Vocational teachers are involved in developing individual education plans for each student on the basis of the specific programs elaborated by the Trade Committees (see art. 66 y of the Act on Vocational Education and Training together with art. 57 of the Ministerial Order on Vocational Education and Training).	Teacher involvement in determining the content of the specific curricula is not explicitly provided for by law.
III. Regulation of work-based training			

1. Relevant bodies	Who has the competency to regulate the content of the work-based training segments?	The relevant work experience to be obtained in order to accomplish the aspired professional qualification is laid down in an individual Ministerial Order for each vocational education and training program (see, e.g., Annex 1 of the Ministerial Order to Vocational Training as Bricklayer). Within this general legal framework it is for the Trade Committees to specify the detailed training programs (UN, 2012). Furthermore, based on the training program, a personal education plan for each student is established by the colleges in consultation with the employing enterprises (see art. 66 y of the Act on Vocational Education and Training together with art. 57 of the Ministerial Order on Vocational Education and Training).	An internship agreement has to be negotiated between the student and the enterprise offering the internship opportunity (see art. 4, para. 4 of the Ministerial Order on Academy Profession Programs and Professional Bachelor Programs). Additionally, the objectives and learning outcomes of the internship guiding the student's work in the enterprise have to be established in close cooperation with the internship coordinator of the educational institution (see, e.g., art. 4.4 of the Academic Regulations on the Professional Bachelor's Degree Program 'Bachelor of Leisure Management' of the University College Zealand).
2. Required off-the-job instruction *in* the company	Is the share of off-the-job instruction time *in* the company (i.e. the time the student/	No.	No.

	apprentice spends in the company, but not in productive work, e.g. on company-owned training facilities) legally specified?		However, the educational institutions must ensure a clear balance between the theoretical instruction and the internship on the basis of the students' objectives for the internship (see art. 4, para. 2 of the Ministerial Order on Academy Profession Programs and Professional Bachelor Programs).
3. Mandatory representation of:	Are the following three groups involved in the decision-making process about the content of work-based training?		
d) Employers		Yes. For more information, see above.	Yes. For more information, see above.
e) Employees		Yes. For more information, see above.	Yes. For more information, see above.
f) Vocational teachers		Yes. For more information, see above.	Yes. For more information, see above.
4. Statuary powers	Is the aforementioned body (see above, III.1) competent to:		

a) Trainee certification	- hand out training certifications to students/apprentices?	At the end of the apprenticeship, the employing enterprise issues a training statement containing information about the work and function exercised, the achievement of the objectives set, as well as an assessment of the apprentice's skills and remaining training needs (see art. 80 of the Ministerial Order on Vocational Education and Training).	Upon successful completion of the Academy Profession or Professional Bachelor's Degree program, the educational institution issues a certificate or diploma (see art. 36 of the Ministerial Order on Examinations on Professionally Oriented Higher Education Programs). Having completed the internship period, the employing enterprises prepares a completion evaluation addressed to the educational institution (see, e.g., art. 4.6 of the Academic Regulations on the Professional Bachelor's Degree Program 'Bachelor of Leisure Management' of the University College Zealand).
b) Validation of employer sponsorship	- validate employer sponsorship (i.e. verify if possible new training companies meet the necessary standards)?	The trade committees are responsible for approving and inspecting enterprises intending to take on trainees (see art. 48 et seq. of the Ministerial Order on Vocational Education and Training).	The educational institution is responsible to perform an assessment of the suitability of the internship placement (see, e.g., art. 4.5 of the Academic Regulations on the Professional Bachelor's Degree Program 'Bachelor of

			Leisure Management' of the University College Zealand).
IV. Financial attributes			
1. Public subsidies	Is there public funding for:		
a) Classroom instruction?		Yes. Classroom instruction at colleges is state financed (Rolls, 2014).	Yes. According to the taximeter funding system the direct educational costs are covered by public grants based on the annual number of students of each institution (see art. 32 et seq. of the Act on Academy Profession and Professional Bachelor's Degree Programs).
b) Workplace training?		No. On-the-job training is financed by the enterprises providing it (Rolls, 2014).	Yes. The costs of public and private schools for providing teacher training internship positions are reimbursed (see art. 26,

			para. 3 of the Act on Academy Profession and Professional Bachelor's Degree Programs).
2. Cost redistribution among employers	Is there an instrument of mandatory levy-grant finance to redistribute the costs of on-the-job training among employers?	Yes. Under the provisions establishing the employers' reimbursement scheme all employers, both public and private, pay a legally specified and annually adjusted amount per full-time job offered. These funds are redistributed to the enterprises offering apprenticeship positions (see art. 4 et seq. and in particular art. 18 of the Act on Employer's Contribution to Education and Training).	No.
3. Regulation of VET/ PET students' salaries	How are VET/ PET students' salaries/ salary scales determined?	During periods of workplace training, apprentices receive a salary set by collective agreement in the Trade Committees (Rolls, 2014).	The mandatory internship, as part of the Academy Profession and Professional Bachelor's Degree programs, is unpaid, unless otherwise stipulated in the specific program order (art. 4, para. 3 of the Ministerial Order on Academy Profession

		Public wage subsidies are determined by law (see art. 15 c of the Act on Employer's Contribution to Education and Training).	and Professional Bachelor's Degree Programs).
V. Education of VET/ PET teachers			
1. Regulation of VET/ PET teachers' education	Is there regulation on the education of VET/ PET teachers?	Yes.	Yes.
2. Existence of minimal requirements	Does regulation stipulate minimal requirements regarding the education of VET/ PET teachers?	Requirements: the teacher must have i) achieved a higher education degree and ii) relevant and current work experience: a) if teachers teach specific vocational subjects, they must normally have at least 5 years of professional experience; b) teachers teaching other topics must have at least two years of professional experience (latter can be waived by school where teachers with experience are not available. If these requirements are not achieved at the time of employment, the teacher must	Teachers are legally required to have a qualification level higher than the actual level they give lessons at. Additionally, they must have teaching competences and substantial professional experience in the discipline taught (see art. 13 of the Ministerial Order on Academy Profession and Professional Bachelor's Degree Programs). To ensure a high pedagogical standard, teachers are obliged to follow some form of pedagogical preparation: Teachers of Academy Profession programs receive

		acquire the following two qualifications. First, within 3 years after hiring the teacher should have skills equivalent to the level in the vocational upper secondary level, including general subjects. It is the responsibility of the school in cooperation with the teacher to ensure the breadth of the general competencies. Second, teachers training regarding vocational education: within four years after hiring the teacher must possess at least the skills of educational training at the diploma level. It is for the teachers to maintain and refresh the professional and educational knowledge necessary to preserve the teaching competence (see art. 12 of the Ministerial Order on Vocational Education and Training).	pedagogical training, varying from informal supervision to formal course, while lecturers of Professional Bachelor's Degree programs are required to enroll in a pedagogical course, taking four years to complete (Field, et al., 2012).

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