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Reference: (2019). The KOF education system factbook: Norway. Edition 1. Zurich, Switzerland : ETH Zurich, KOF Swiss Economic Institute.

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KOF Swiss Economic Institute

The KOF Education System Factbook:
Norway

Edition 1, April 2019

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List of Abbreviations

DFET	Directorate for Education and Training
EPL	Employment Protection Legislation
GCI	Global Competitiveness Index
GII	Global Innovation Index
GDP	Gross Domestic Product
ILO	International Labour Organisation
ISCED	International Standard Classification of Education
ITE	Initial Teacher Education
IVET	Initial Vocational Education and Training
KOF	Swiss Economic Institute
MOER	Ministry of Education and Research
NOKUT	Norwegian Agency for Quality Assurance in Education
OECD	Organisation for Economic Co-operation and Development
PET	Professional Education and Training
TVET	Technical Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training
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 labour-market oriented.

The appealing outcome of the VET system is that it improves the transition of young people into the labour 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 labour market, i.e. the companies. This close relationship guarantees that the learned skills are in demand on the labour 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 labour 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 labour 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, 2017c).

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: Norway, we describe the Norwegian 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 the Norwegian economy, labour market, and political system. The second part is dedicated to the description of the formal education system. The third section explains Norway's vocational education system. The last section offers a perspective on Norway's recent education reforms and challenges to be faced in the future.

EDITING AND ACKNOWLEDGEMENTS

This Factbook is edited by Johanna Kemper. We want to thank Pascal Emmenegger and Arturo Baenziger for the elaboration of the contents, and Clair Premzic for the excellent language and content editing. Without you, the realization of this Factbook would have been impossible!

The KOF Education System Factbooks has to be regarded as work in progress. The authors do not claim completeness of the information which has been collected carefully and in all conscience. Any suggestions for improvement are highly welcome!

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Suggested citation:

KOF Swiss Economic Institute (2018). KOF Education System Factbook: Norway. KOF Education System Factbooks, ed. 1. Zurich: Swiss Federal Institute of Technology.

1. The Norwegian 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 labour market. The particularities of a country's economy and labour market are important factors determining the current and future demand for skills. Therefore, these will briefly be described in the first part of this Factbook. In addition, this part provides an overview of Norway's political system with emphasis on the description of the education politics.

1.1 The Norwegian Economy

The Kingdom of Norway occupies the western half of the Scandinavian Peninsula with a population of 5,265,158. The discovery of offshore oil and gas in the late 1960s together with waterpower and political stability facilitated a favourable development of the economy that has grown at an average annual rate of 2.36 percent¹ between 1990 and 2016. The country also boasts the 3rd largest GDP per capita² in Europe, which in 2016 was 59,398 US\$, making it the richest Nordic country and well above the OECD average of 38,018 US\$ (OECD, 2016c; World Bank, 2016a).

Norway has successfully sustained an egalitarian social and economic model, especially for women and vulnerable families. However, the model involves substantial public spending and therefore high tax rates, resulting in a challenge for competitiveness and trade in the global economy. According to the OECD, the country's mainland output growth has moderately increased thanks to supportive macroeconomic policies, the increase in global oil prices, increasing consumer confidence and the comparatively low value of the Norwegian Krone, which has helped the country's export led strategy (2017b).

The Norwegian oil and gas sector is the largest measured in terms of value added, government revenues, investments, and export value (NP, 2017a). The country's petroleum reserves are strongly regulated by the government and account for 12 percent of GDP, 9 percent of Jobs, and 13 percent of the state's revenue. Norway is the world's 8th largest exporter of crude oil and 3rd largest exporter of natural gas, accounting for 25 percent and 22 percent of total external trade in goods respectively (CIA, 2017; NP, 2017b).

Norway could soften the oil-price collapse of 2014 relatively well and the recovery is well underway (OECD, 2018a). As the government forecasted a future decline in oil and gas

¹ Arithmetic average of GDP growth (annual percentage), 1990-2016.

² GDP per Capita, US \$, constant prices, constant PPPs, reference year 2010.

revenues, it decided to save state revenues from its petroleum activities into the world's largest sovereign world fund, valued at \$ 983 Billion as of mid-2017 (NCB, 2017). The Fund generates an annual return of 3.8 percent. Fiscal rule stipulates the withdrawal of approximately 3 percent a year, allowing the gradual phasing of oil revenues into the economy and the benefit of future generations, without eating into the funds capital means. However, the oil price decline in recent years necessitates a more rapid restructuring of the Norwegian economy than anticipated.

In addition to oil and natural gas, the country also has vast reserves of fish, forest minerals and hydropower. According to FAO, Norway is the world's second largest exporter of fish and fishery products, after China (2016). This shows in a comparably strong primary sector (Table 1).

Table 1: Value added and employment by sector, 2016

Sector	Norway: Value added³ (%)	EU-28: Value added (%)	Country: Employment (%)	EU-28: Employment (%)
Primary sector	2.5	1.5	2.5	4.5
Agriculture, hunting and forestry, fishing	2.5	1.5	2.5	4.5
Secondary sector	31.8	24.7	19.8	21.6
Manufacturing, mining and quarrying and other industrial activities	24.9	19.3	11.6	15.3
of which: Manufacturing	7.9	16.1	8.4	13.8
Construction	6.9	5.4	8.2	6.3
Tertiary sector	65	73.8	77.7	73.8
Wholesale and retail trade, repairs; hotels and restaurants; transport; information and communication	19.6	24.0	26.6	27.6
Financial intermediation; real estate, renting & business activities	20.2	27.3	11.7	16.4
Public administration, defence, education, health, and other service activities	25.9	22.5	39.4	29.8

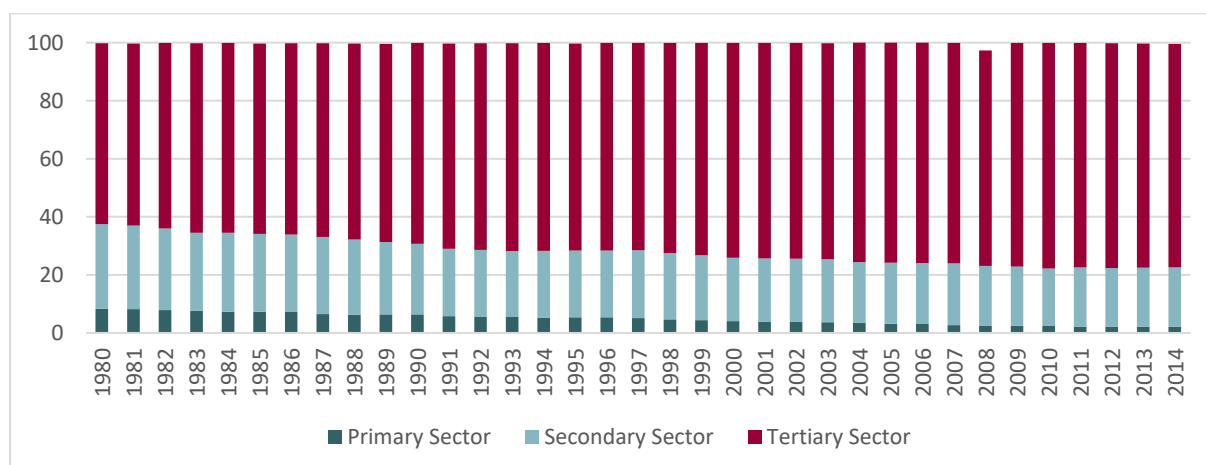
Source: Eurostat (2017a; 2017b).

Typical for any country with a very high standard of living, Norway's economy is based largely on the tertiary sector, which has registered rapid growth in recent years (see Figure 1). In 2016, it accounted for 77.7 percent of the employment and thus above EU-28 average. This is largely due to a strong tourism industry and an unusual high employment in the public sector (EB, 2017). Despite high employment rates, the tertiary sector is relatively weak at 65 percent of the overall value added. This is explained mainly because Norway is among the largest oil and

³ Due to rounding differences, the sum of all sectors falls below 100 percent.

gas exporters in the world, which automatically leads to a strong secondary sector that, at 31.8 percent of overall value added, lies well above the EU-28 average. Adding to this is the role of mining, making Norway Europe's largest producer of aluminium. The secondary sector has remained relatively stable in terms of absolute numbers, but there has been a gradual shift of employment towards the tertiary sector in Norway too, as seen in Figure 1.

Figure 1: Employment by sector (as share of total employment), 1980-2014



Source: (World Bank, 2016b).

Norway has a highly competitive market economy, ranked 11th out of 137 in the WEF Global Competitive Index of 2017/2018 (WEF, 2017). The main pillars are the excellent macroeconomic environment, the strong institutions as well as a top-10 education system. Limiting factors are mainly the high tax rates, in which Norway ranks 77th, and the insufficient innovation capacity. This is mirrored in the Global Innovation Index 2017, in which Norway moved up 2 places and now ranked 19th, between Canada (18th) and Austria (20th), but much lower than its neighbour state Sweden (2nd) (Dutta et al. 2017). Although the infrastructure and institutions regarded as some of the best in the world, weaknesses that lead to lower innovation include few graduates in science & engineering, the lack of local competition, and the slow growth rate of the GDP at PPP per worker. In line with these findings, the OECD Economic Survey recommends tax reform and stronger competition as two possible measures (OECD, 2018a).

1.2 The Labour Market

In the first part of this section, we will describe the general situation of Norway's labour market. In the second part, we will refer to the youth labour market in particular.

1.2.1 Overview of the Norwegian Labour Market

Taking after the Norwegian economy, its labour market is also performing well. Norway has a well-established regulatory framework that is effectively enforced (BDHRL, 2016; World Bank, 2014). The *OECD Index of Employment Protection* is a multidimensional index that quantifies the strictness of Employment Protection legislation (EPL) across countries. It is scaled between zero to six, where zero refers to a low, and six to a high level of employment protection. According to the *OECD Index of Employment Protection*, Norway (2.31) represents almost the median (2.32) among OECD countries for permanent employment contracts, which are moderately regulated (OECD, 2013a). The protection of temporary workers in contrast is relatively strict (3.42 as compared to an OECD average of 2.07). As is generally the case in Nordic countries, the trade union density is relatively high in Norway – it was at 52.5 percent in 2015 (OECD, 2017g). Minimum wages are set in collective bargaining agreements, so there is no official minimum wage (BDHRL, 2016). Average monthly wages have been steadily increasing, though the growth has been slowing down in recent years, with 1.6 percent in 2016 as the lowest growth measured in the last 20 years (SN, 2017f).

As shown in Table 2, Norway's unemployment rate was relatively lower than neighbouring countries and well below OECD average in 2016. Its labour force participation rate was also above the OECD average in 2016, though it was slightly lower than e.g. Sweden (82 percent total).

Though Norway's youth unemployment rate is low in relative terms if compared to other OECD countries, it is not at a low level in absolute terms. As a reaction to this, the government launched a youth initiative in 2017 (OECD, 2018a).

Table 2: Labour force participation rate, unemployment rate by age 2016

Age Group	Labour force participation rate		Unemployment rate	
	Norway	OECD average	Norway	OECD average
Total (15-64 years)	78.2	71.7	4.9	6.5
Youth (15-24 years)	55.3	47.2	11.0	12.9
Adults (25-64 years)	83.7	77.3	3.9	5.6

Source: (OECD, 2017a).

Table 3 shows that labour force participation rises and the unemployment rate sinks with education attainment in Norway. As can be expected from Table 2, the Norwegian labour market outperforms the average OECD rates in this regard too. With a generally very low unemployment rate, the unemployment rate among people with a low level of education at 7.7 percent is also remarkably low, far lower than the OECD average at 12.4 percent.

Table 3: Labour force participation rate, unemployment rate by educational attainment 2015 (persons aged 25-64)

Education Level	Labour force participation		Unemployment rate	
	Norway	OECD average	Norway	OECD average
Less than upper secondary education	66.1	63.6	7.7	12.4
Upper secondary level education	83.3	80.1	3.3	7.3
Tertiary education	91.6	88.0	2.5	4.9

Source: (OECD, 2017f).

The decrease in activity of the oil industry, which resulted in more unemployment in this sector than anticipated, is a major challenge for the Norwegian labour market. This is mainly due to a lack of alternative jobs in some regions of the country, as the industry is located outside of metropolitan areas. According to the OECD (2018a), Norway needs to diversify more in sectors that are unrelated to oil activities in order to retain low unemployment rates and a competitive economy in the long term.

1.2.2 The Youth Labour Market

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare how adolescents participate in the labour 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 labour market adequately nor provide enough information for a comprehensive cross-country analysis. To increase the amount of information analysed and to foster a multi-dimensional approach, the KOF YLMI consists of twelve labour market indicators⁴ that are grouped into four categories.

Dimensions of the KOF YLMI	
Activity state	<ul style="list-style-type: none"> - Unemployment rate - Relaxed unemployment rate⁵ - Neither in employment nor in education or training rate (NEET rate)
Working conditions	Rate of adolescents: <ul style="list-style-type: none"> - with a temporary contract - in involuntary part-time work - in jobs with atypical working hours - in work at risk of poverty⁶ - Vulnerable unemployment rate⁷
Education	<ul style="list-style-type: none"> - Rate of adolescents in formal education and training - Skills mismatch rate
Transition smoothness	<ul style="list-style-type: none"> - Relative unemployment ratio⁸ - Long-term unemployment rate⁹
Source: Renold et al. (2014).	

The first category describes the *activity state* of youth (ages 15-24 years old) in the labour 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 labour 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 favourable situation regarding the youth labour market and a more efficient integration of the youth into the labour market.

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

⁴ 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.

⁵ 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 no job and are currently available for work (also: "involuntary inactive").

⁶ Those who cannot make a decent living out of their earnings, being at risk of poverty as a percentage of the working population.

⁷ 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.

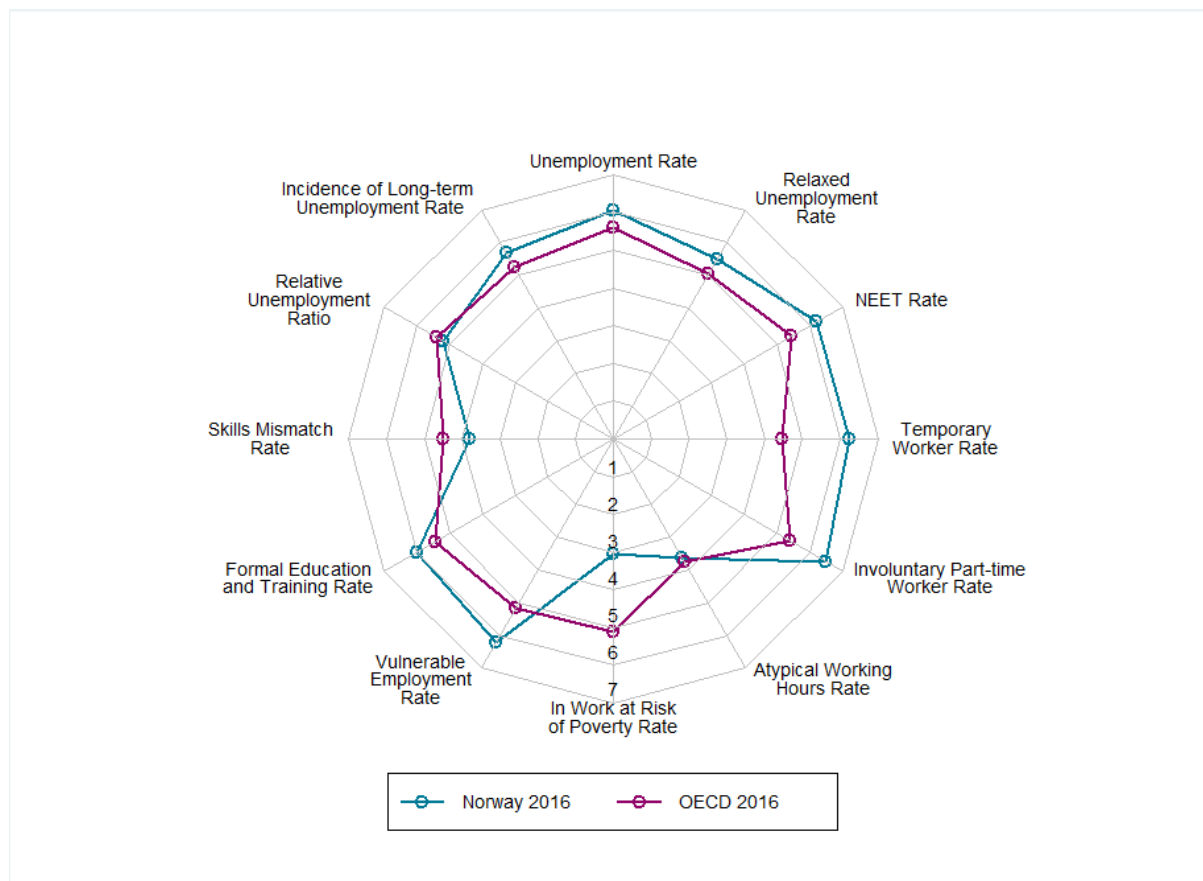
⁸ Is defined as the youth unemployment rate (15-24 years) as a share of the adult unemployment rate (25+). If the youth cohort is affected in the same way than the adult group with respect to unemployment, then the relative unemployment ratio will be equal to one. If the youth are relatively more affected, then the ratio will be bigger than one.

⁹ Those unemployed for more than one year (52 weeks) in the total number of unemployed (according to the ILO definition).

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 Norway

Figure 2: YLM Scoreboard: Norway versus OECD average, 2016



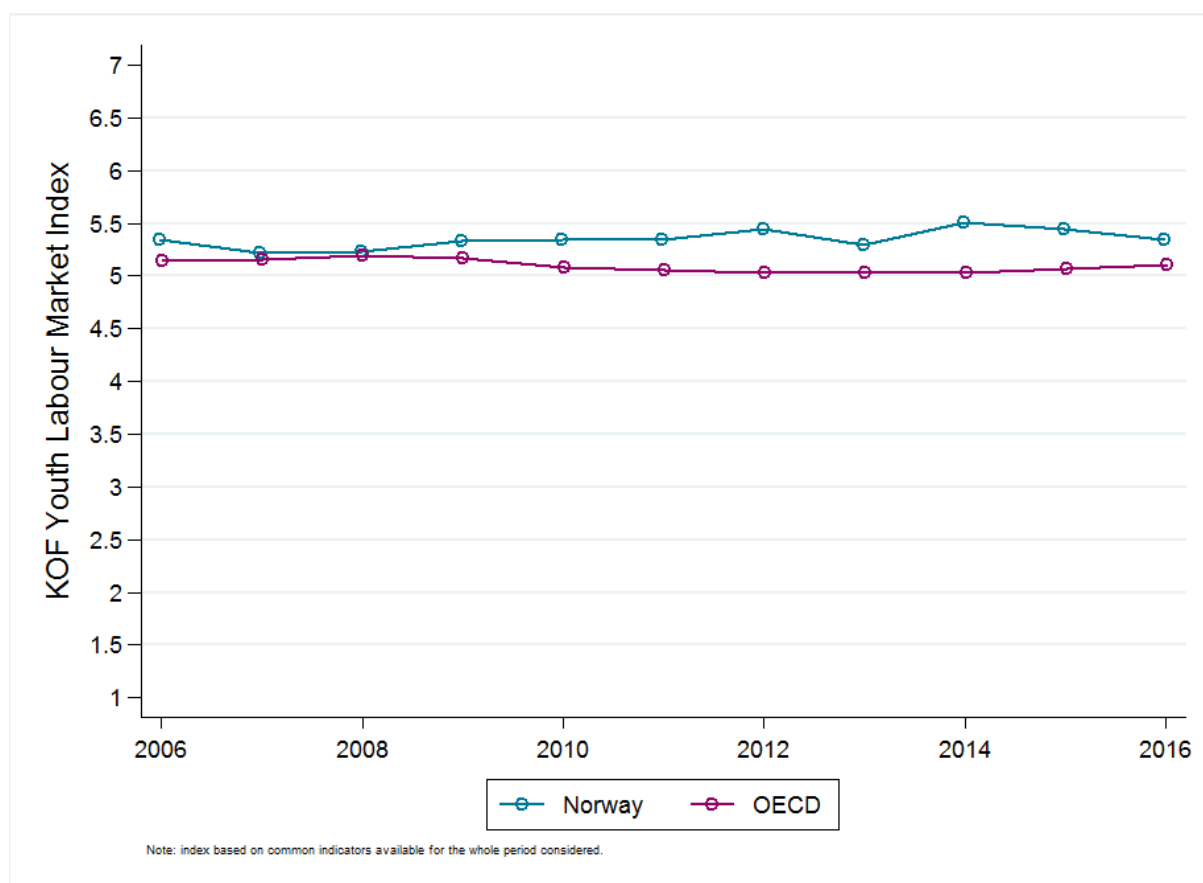
Source: KOF, 2018.

Figure 2 shows the different dimensions of the KOF YLMI for Norway and the OECD average for 2016. Data availability is not an issue in Norway, where all indicators are available, so comparisons to the OECD average as well as other Nordic countries can be made without problems.

In 2016, Norway attained an index of 5.35 points, which compares favourably to the OECD-average of 5.11. The spider web shows that Norway matched or outperformed the OECD average in most aspects. However, Norway's education system did not do very well in meeting the skills of the labour market (shown by the indicator "skills mismatch rate"), as it attained only 3.82 points (OECD-average: 4.49). An even bigger issue is the high number of people who are in work but at risk of poverty, where Norway scored 3.04 points, considerably lower than the OECD average of 5.12 points.

Opposing to this are the strengths, which are very much in line with the observations made above in section 1.1 and 1.2.1. Notably, the strong activity state and good transition smoothness are shown in the unemployment-related indicators, which are all considerably above OECD average. For example, Norway's long-term unemployment rate scored 5.67 points. Like the scores of the other Nordic countries (e.g. Denmark: 6.31 points), this score is high when compared to the OECD average of 5.25 points, although it has dropped severely since 2015, when Norway scored 6.18 points. The good legal protection of temporary workers shows in the very high points attained in the temporary workers rate (6.25; OECD average 4.46) and the involuntary part-time workers rate (6.51; OECD average 5.41). The latter is especially remarkable when compared to the other Nordic countries such as Sweden (2.51 points) or Finland (4.76 points).

Figure 3: YLM-Index Norway versus OECD average, 2006-2016



Source: KOF, 2018.

Figure 3 illustrates the evolution of the KOF YLM-Index for Norway and the OECD average over time (1991-2015). Since 1995, more than half of the indicators have been available for Norway, and since 2006, all indicators have been available. Norway has seen a little bit more fluctuation than the OECD-average, but both have been developing stably on a high level in recent years. This also shows in the data, which reveals that the decrease in the 2015 and

2016 was mainly due to the activity state dimension, as the unemployment rate increased. When compared further back, there seems to have been a slump in Norway's scores, which is actually due to missing indicators (especially the NEET rate).

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 points for the understanding of the education system in a broader sense. In the first part, we explain Norway's political system in general. The politics and goals regarding the education system will be referred to in the second part.

1.3.1 Overview of the Norwegian Political System

Norway is a constitutional hereditary monarchy. This means that the monarch, who is a member of the royal family, has limited political power, as defined by the constitution. The monarch nominally appoints the government, comprising of the prime minister, the leader of the majority party or coalition, and the Council of State, under the approval of the Parliament, a unicameral body. Therefore, Norway is de facto a parliamentary democracy (BDHRL, 2016). Though the monarch remains a veto-right in legislative matters, it has never been used.

The country is divided into 19 counties, which are again divided into municipalities, so that there are three different levels of governance (EB, 2017). At the municipal level, citizens elect councils every four years. In the municipalities, the councils again elect a board of alderman, who are led by a mayor. Two years after the elections on municipal level, the election of the Parliament take place. The Norwegian citizens vote via ballot, and the seats are then allotted on the basis of proportional representation.

With Norway ranking on top of the Democracy Index 2016 with an overall score of 9.93 out of 10, it can be considered an exceptionally well-functioning democracy (Economist, 2016). The governance in Norway is generally of very high quality: in each of the six dimensions of governance considered in the Worldwide Governance Indicators 2014, Norway ranks among the top nations (World Bank, 2014). This is also reflected in the Corruption Perceptions Index 2016, listing Norway as 6th, thus signifying a high degree of press freedom, access to information, and independent judicial systems (Transparency International, 2016).

1.3.2 Politics and Goals of the Education System

The overall responsibility at all levels of the education sector in Norway remains with the Ministry of Education and Research and is therefore a national competence (*EURYDICE, 2011b*). However, the national assembly has adopted a decentralised structure: while the parliament sets the goals and framework, the decisions and elaborations are made locally.

Counties are appointed with the responsibility for providing upper secondary education, while the municipalities provide kindergartens, primary and lower secondary education.

Norway's school system is strongly shaped by the principle of equality regarding opportunities and access, leading Norway to be an inclusive system (MoE, 2014). There is strong political support for this: Knowledge and skills are regarded as the means to secure and drive Norway's success past oil-related activities (EURYDICE, 2015b; NMER, 2017a). The government envisions a knowledge-based society and holds that every individual has a potential for learning, which should be fully utilised. Therefore, the funding per students is much higher than the OECD average at all levels; for primary education in 2014, USD 13'104 per student in Norway compared to an OECD average of USD 8,733 (OECD, 2017h).

Current challenges include the low completion rates of upper secondary education, for which recent efforts have shown limited success (OECD, 2013b; OECD, 2017h). Only 57 percent (OECD average: 68 percent) of the students completed upper secondary education within the theoretical duration in 2015, and total completion rates were at 75 percent. Despite political support and therefore strong supply, vocational training graduation rates were even lower at a mere 38 percent in 2015. This is especially alarming considering the unemployment rate for people who finished upper secondary education is much lower than for those who dropped out (see Table 3). Because of this, current estimations are that there will be a shortage of 10000 skilled workers in Norway by 2035 (CEDEFOP, 2017a).

Another challenge concerns the pedagogical quality of teaching; participation in continuing education has been relatively low for a long time. The government launched programmes to promote the profession such as the vocational teacher promotion initiative, and to increase the frequency of courses. Moreover, some of the initial teacher education courses were redesigned, as discussed below in section 2.6.

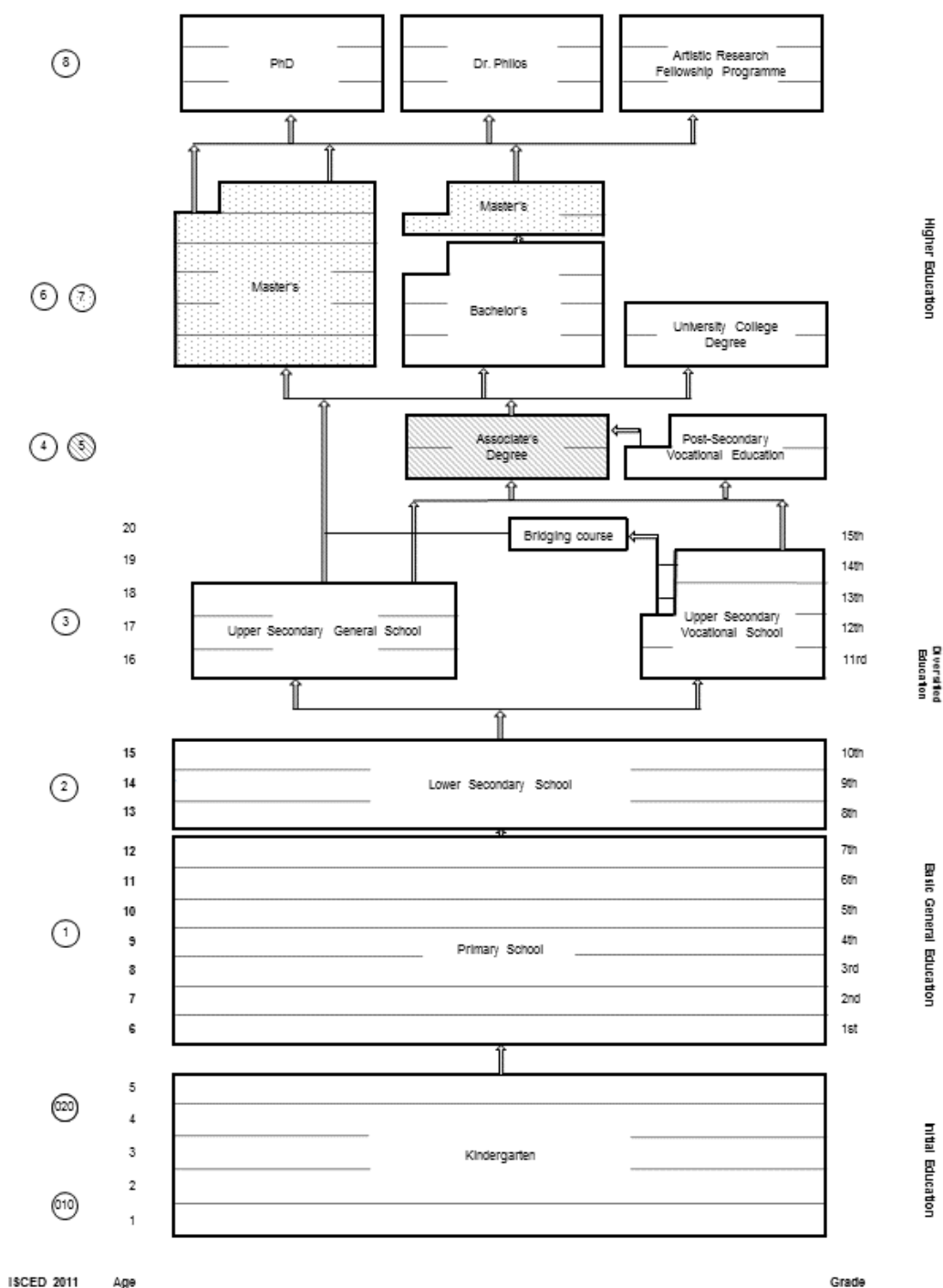
2. Formal System of Education

The general objective of Norway's education system is to provide knowledge of the national heritage and common international traditions, thereby fostering understanding of cultural diversity and promote respect. Good education should enable all pupils to develop the fundamental skills to master their lives and participate responsibly in society, as stated in the Education Act (MoE, 2014). Therefore, equality is a fundamental principle in the Norwegian education, which requires equality of access even in remote areas. Therefore, except for the pre-primary stage, there are no school fees in public education (SIU, 2016, p. 6).

Figure 2 displays the structure of the Norwegian education system, which are discussed in depth in this chapter. Compulsory education usually starts at age 6 and ends with completing

lower secondary school at age 15. Through all stages of the Norwegian Education system, the school year starts mid-August and ends mid-June, thus lasting 10 months.

Figure 4: The Norwegian Education System



Source Own illustration, based on (OECD, 2017e; SN, 2017c)

Table 4: Gross enrolment ratio (GER) 2015

ISCED 2011	Educational level	Enrolment	Net enrolment ratio (NER)	Gross enrolment ratio (GER)
0	Pre-primary education	282,649	97.28	97.49
1-2	Primary and lower secondary education	629,275	99.78	100.42
1	Primary education	444,638	n/a	n/a
2	Lower secondary education	184,637	n/a	n/a
3	Upper Secondary education	320,080	95.47	112.99
3	of which: general	200,731	n/a	n/a
3	of which: vocational	119,349	n/a	n/a
6-8	Tertiary education	288,989	n/a	76.7
6	Bachelor or equivalent	200,6	n/a	n/a
6	of which: academic	148,972	n/a	n/a
6	of which: professional	51,686	n/a	n/a
7	Master or equivalent	34,469	n/a	n/a
8	Doctoral or equivalent	7,721	n/a	n/a

Source: (UNESCO, 2017; SN, 2018).

Table 4 shows the gross enrolment ratio (GER) and net enrolment ratio (NER) by education level for the year 2015. The NER quantifies the total number of students in a certain age group enrolled at a given level of education, expressed as a percentage of the total population in that age group. The GER quantifies the number of students enrolled at a given education level, irrespective of their age, as a percentage of the official school-age population corresponding to that education level.¹⁰

The very high NER and GER for non-compulsory pre-primary education in Norway is astonishing. This is closely related to public subsidising, which is discussed in more detail in section 2.1. Almost all children (NER 99.78) attend compulsory education consisting of primary and lower secondary education in 2015. A high level of pupils (NER 95.47) also attend upper secondary school. The GER of 112.99 percent is due to the many adult learners that attend upper secondary education, as explained in section 2.5.

2.1 Pre-Primary Education

In Norway, pre-primary education is provided at kindergarten (UNESCO, 2012). Attending pre-primary education is generally not compulsory. Despite this, 82 percent of the 1 to 2 year-old children, and 96.8 percent of the children between three and five are visiting kindergarten (SN,

¹⁰ For example, for the primary education level, the GER (NER) sets the actual number of students (in a certain age group) in primary education in relation to those who are in the official age to attend primary education¹⁰. A gross enrolment ratio of 100 implies that all children in the age of the respective level actually attend school. A ratio below or above 100 implies that an under- or over-proportional part of that age cohort attend school. A gross enrolment ratio of above 100 could occur if for example many students retake a grade or if many adult learners are enrolled in that grade.

2017a). As kindergartens are the institution for children under school age, they serve the dual function of both taking care of children during the parents' working hours and educating children. As such, kindergartens are also a governmental tool for early intervention, especially for improving Norwegian language skills for children with immigrant backgrounds. They should provide children a safe and stimulating environment for their holistic development and give children equal opportunities, as is stated in the national curriculum that is part of the Kindergarten Act (EURYDICE, 2015a). There is no formal evaluation, but meetings between teachers and parents to discuss the child's development are held once or twice a year.

As a non-compulsory institution that is under the responsibility of municipalities, parents are required to pay a monthly fee. However, in order to achieve the above-stated goals, good accessibility and moderate pricing is crucial. In 2017, parents paid on average 2660 NOK (roughly 340 US Dollar) a month, with about 86 percent of the costs being publicly subsidised (SN, 2016). There are public as well as private kindergartens. About 47 percent of all kindergartens are public, and of the roughly 280,000 children that were attending kindergarten in 2016, 51 percent were going to public kindergarten.

2.2 Primary and Lower Secondary Education

Compulsory education starts at the age of six, when children enter primary education. (UNESCO, 2012). Primary education comprises grades one to seven, which usually corresponds to ages six to 12. Compulsory education is generally administered by the municipalities and is free in the case of public institutions, and subsidised in case of private schools (UNESCO, 2012). About 96 percent of the around 630,000 pupils that attended primary and lower secondary school in 2016 went to public schools (SN, 2017b). However, the ratio of pupils attending private schools has been gradually increasing over the last 15 years.

The national curriculum, which falls under the responsibility of the government, was reformed in the "Knowledge Promotion" in 2006. It aims to foster the development of basic skills more strongly at all levels of education, including apprenticeship training in companies, as they are seen as basic for all kinds of learning (UNESCO, 2012). The national curriculum defines the core curriculum and defines competency targets at specific levels. The municipalities are then responsible for choosing learning materials and methods, as well as developing the curricula and organising the learning activities. However, the Education Act defines that the school year comprises of 38 weeks of teaching, with a school week consisting of five days (UNESCO, 2012).

The national curriculum focuses on the five basic skills of reading, writing, oral expression, numeracy and digital skills as core abilities, which are integrated into the different subjects at all stages. It also defines the expected standards for the different education levels and thereby

the quality framework. In order to assess the students' levels against these standards, a compulsory national test in reading skills takes place in each of the first three years, with an additional test in arithmetic in grade 2. These form part of the National Quality Assessment System. For the same purpose, a test is administered in grade 5, which assesses the pupil's skills in Norwegian, English, and mathematics. Throughout all of primary education, the assessments are done without grading in marks.

After primary education, lower secondary education follows as the second cycle of compulsory education. However, there is no formal division between these two stages; primary and lower secondary education are integrated into a single legislative structure in Norway (EURYDICE, 2014a). Therefore, the same school may cover all grades of compulsory education, but for practical reasons, separate primary and lower secondary schools are common in urban areas. Lower secondary education takes place at grades 8 to 10 with pupils between 13 and 16 years normally attending it.

There are compulsory national tests as a means for quality assessment in lower secondary school as well, but for the first time a system of marks is introduced, with 1 being the lowest and 6 the highest mark. At grade 8 and 9, a reading in Norwegian and English as well as a maths exam takes place, and at the end of grade 10, there is a centrally-set examination in Norwegian, Sami (language of natives), English or maths, with the pupils being told their subject a few days before the exams. Moreover, there is a locally organised oral exam. Upon successful completion, pupils may proceed to post-compulsory education at the upper secondary level.

Compulsory education is generally comprehensive in Norway (EURYDICE, 2014a). This means that it is adapted to individual abilities, also in the case of children with learning difficulties or other special educational needs. These children are kept in the same group as all other children in the same grade, with pupils progressing automatically to the next grade at the end of a school year; there are no classes. The group size is not regulated, and two or more teachers can cooperate. However, extra teachers can be allocated if needed.

2.3 Upper Secondary Education

After finishing 10 years of compulsory education, about 98 percent of the Norwegian pupils progressed to the upper secondary stage in 2015 (SN, 2017c, p. 12 et seq.). There are no other requirements than the successful completion of the lower secondary education level. In addition to the general goals of education stated above, the main objective of Norway's upper secondary stage is for pupils and apprentices to achieve a recognised qualification. In 2015, 50 percent of the normally 16 to 19 year-old pupils attended general studies programmes at 11th to 13th grades, with numbers increasing in recent years (SN, 2017b). General studies

programmes last three years (in a few cases four) and lead to the general university admissions certification. The other 50 percent of pupils choose vocational education and training programmes that usually last four years. The former is the topic of this chapter, whereas we will discuss the vocational education and training system in section 3.1 of this Factbook.

Like the institutions offering compulsory education, the upper secondary schools are also under the responsibility of local authorities (EURYDICE, 2014b). However, there is no formal link between the institutions at these two stages. As of 2015, about 79 percent of the upper secondary schools are public schools owned by the counties, and roughly 21 percent are private schools (SN, 2017c, p. 13). Within the national framework described in section 2.2, municipalities are in charge of selecting learning materials and methods, but it is common to delegate these decisions to teaching institutions at the upper secondary level. As before, the school year consists of 38 weeks, with the students taking between 30 and 35 hours of classes a week (UNESCO, 2012). A unique feature is that pupil participation is promoted strongly, with pupils having gradually more responsibility for planning their learning activities (EURYDICE, 2014b).

Though aimed at providing broad education, upper secondary schools in Norway are specialised to some extent. Most schools are combined schools that offer general educational as well as vocational education and training programmes, focusing on some of the 12 different study-areas that are offered at the upper secondary level in Norway. Regarding general education, there are programmes with specialisations in general studies, sports and physical education as well as music, dance and drama. However, cultivating the five basic skills is still prioritised and there are mandatory common core subjects such as Norwegian, natural science, social science or maths, thus avoiding early specialisation. Pupils have the right to be placed into one of their three choices among the 12 programmes. Therefore, counties are striving to offer as many programmes as possible, but due to geographic remoteness in rural areas, there can be limits of what can be offered. Notwithstanding this, 90 percent of the pupils are able to pursue their first choice.

As in compulsory education, the general education track also involves a compulsory national test in mathematics and reading skills in the first year of upper secondary education in order to map the students' achievements (UNESCO, 2012). There is also an English test, but it is voluntary. The regular assessment comprises of overall achievement in each subject and end-of-year examinations that can be written, oral, or practical (EURYDICE, 2014b). Upon successful completion of one year, pupils progress to the next. In case a pupil fails a subject, exceptions can be made on individual basis. The first two years of all programmes take place at upper secondary school. The concluding year for pupils of general studies continues at the

same schools and successful completion qualifies them for general admission to higher education. In the case of vocational programmes however, the last one or two years take the form of an apprenticeship, as described in section 3.1.1. They lead to vocational qualifications, but apprentices can take supplementary subjects that qualify them for higher education. Additionally, there is an option to take a one-year programme equal to the third year of upper secondary education that leads to general university admission.

2.4 Postsecondary/Higher Education

Post-secondary non-tertiary programmes are available in Norway. Since all the programmes at this stage are vocational, they are covered in section 3.1 of this Factbook. In this section, we will instead focus on programmes at the tertiary level of general education. This level aims at enhancing the capabilities of the population in order to promote both individual and national interests (EURYDICE, 2011a).

The tertiary level of non-vocational education in Norway is composed of universities, university colleges, specialized university institutions, and also the military colleges and police university college (which are not under the Ministry of Education and have to apply to the Norwegian Agency for Quality Assurance in Education in order to establish new programmes) (EURYDICE, 2011a; UNESCO, 2012). Only the former have degree-awarding powers, i.e. the universities having the right to establish study programmes at their own disposal. University colleges are able to establishing bachelor programmes, and are thus classified as higher education institutions in the 2005 Act on Universities and University Colleges (UUC, 2005).

Public higher education institutes, such as universities, are owned by the state and are, like the other institutions of the public education system, free of charge (UUC, 2005). Private institutions charge fees, but are required to use them to the benefit of the students. Around 48 percent of students attend public universities where they can study humanities, social and natural sciences. The vast majority of the remaining 52 percent public or private university colleges, which offer mainly vocationally orientated professional bachelor's degree programmes including teacher training, are discussed in depth in section 3.2 of this Factbook (SN, 2017d). With around 60 percent of the students being female, there is a particularly large percentage of highly educated women in Norway. A higher ratio of female to male students has been recorded since the 1980s, with the gap increasing steadily (SN, 2017b, p. 16).

Higher education institutes offer bachelor's degrees that usually take three years (180 ECTS credits), two-year master's degrees (120 ECTS credits) and PhD degrees that typically take at least three years and are mainly offered at universities. There are a few exceptions such as integrated bachelor and master degrees or master programmes that are shorter than two years. Moreover, there are also a few professional programmes that take six years and fall

outside of the bachelor-master structure. Examples include programmes in medicine, psychology and theology. The Bologna structure was implemented in autumn 2003 (UNESCO, 2012). Within this framework, higher education institutions enjoy a high degree of freedom in designing and delivering curricula.

In many study directions, the places available are limited, and the demand higher than the supplied places (EURYDICE, 2011a). In most programmes, students need to pass examinations to progress and complete the courses. Exams are usually held at the end of a term. In order to progress to a master's programme, a bachelor's degree is required. However, foreign students may need to fulfil additional requirements because of differences in education. Master's degrees necessarily involve a research thesis.

2.5 Continuing Education (Adult Education)

Adult education has a long tradition in Norway and there is a well-developed system, for which the local authorities are responsible until the lower secondary and regional authorities take over at the upper secondary level (EURYDICE, 2016). People above the regular schooling age have the legal right to attend primary and lower secondary as well as upper secondary education if they have not yet completed these levels of education. The provision given at regular schools or at adult education centres is free of charge for Norwegian citizens and those with immigrant status. In 2014/15, roughly 24,000 adults were attending upper secondary education, out of which 31.4 percent were immigrants (SN, 2017c, p. 21 et seq.). People who acquired a residence permit in Norway are generally required to attend a two-year programme of at least 600 hours of Norwegian and social studies (EURYDICE, 2016).

The recognition of lifelong learning has seen a general increase. There are folk high schools which were attended by around 7,000 pupils, and so-called adult education associations that provided a large variety of courses with over 500,000 participants in 2015. About 60 percent of the population participated in adult education in 2017 (SN, 2017e). Among the employed, 47 percent participated in non-formal and 15 percent in formal courses and training during 2017. A popular form of formal provision are higher-education courses at universities and colleges that are often adapted to the employer's needs. Norwegian employees have the statutory right to take leave to study (EURYDICE, 2016).

As a specially emphasized feature in Norway, all forms of prior learning can receive validation in all sectors of education and training (CEDEFOP, 2016). The competences are assessed against the national curricula. Such validation can be used as proof of competence or lead to a reduced study time, for example in order to gain access to higher education studies.

In 2006, the Ministry of Education and Research launched the SkillsPlus programme that is aimed at employees with low skills in literacy, numeracy, oral communication and information technology in order to prevent them from unemployment (KN, 2016). All enterprises in Norway can apply for funding of these courses, which take place at the workplace. The government is currently designing a new policy to integrate the different elements of the hitherto fragmented system into a single scheme.

A special feature of the Norwegian tertiary education sector is the massive online open courses that were established in 2013 by universities and academies, many of them targeted at working professionals. They are often part of a modular training programmes that are tailor-made for a specific enterprise (EURYDICE, 2016). The courses have no general entry requirements and some of them are offered free of charge. This sector is particularly promoted by the Ministry of Education and Research: It appointed an agency that promotes the use of information and communication technology as well as flexible study programmes in the higher educational sector (SIU, 2016, p. 22). In 2016, 11,752 participants were registered in such courses (SN, 2018, p. 22).

2.6 Teacher Education

All initial teacher education (ITE) in Norway is under the auspices of the Ministry of Education and Research (EURYDICE, 2012). It defines the general frameworks, which are then worked out by the individual institutions. The teacher education differs according to the different educational levels, but it generally takes place at one of 15 different universities and university colleges. Therefore, admission to higher education is a requirement to pursue ITE. On top of that, students need to have at least a grade four in maths and Norwegian (on a Scale 1-6, with 6 being the best grade) in order to gain admission to ITE.

All the programmes involve taking 60 ECTS credits in pedagogy and didactic-related courses as well as at least four school subjects, with at least one of them amounting to 60 ECTS credits, thus forming an area of specialization that may be taught at upper secondary schools. In contrast, teaching a subject in primary school requires only 30 ECTS credits in that subject. Teaching practice is a central part of the programmes, which involve at least 60 days of practice. In addition, each programme involves writing a bachelor thesis. During the education, students need to undergo a suitability assessment. We will quickly discuss the different types of ITE programmes below.

Kindergarten teacher education lasts three years and entitles the teacher to work in kindergartens. There is the possibility of studying an additional fourth year in order to be able to work in first to fourth year of primary school.

Differentiated primary and lower secondary teacher education is a five-year integrated master programme that qualifies for teaching at either primary or lower secondary stage. It was introduced in 2017 to replace the previous four-year Bachelor of Education programme. It was by far the most popular route for teaching at this stage, with around 80 percent of the teachers in primary and lower secondary school being absolvents of this undergraduate programme in recent years (SN, 2017c, p. 28).

Subject teacher education is also a Bachelor of Education programme and takes three to four years of study. It entitles one to teach the studied subject up to upper secondary school or in adult education. Over 50 percent of the teachers in upper secondary schools took this route in 2015.

Vocational teacher education is a three-year programme that qualifies one to work at upper secondary stage or in adult education. This programme is discussed in further detail in section 3.6 of this Factbook.

For university and university college absolvents, there is a one-year postgraduate programme that covers two or three subjects and qualifies the student to teach from fifth grade of primary school up to the upper secondary level as well as in adult education. For the same purpose, there is also an integrated master's programme that takes five years to complete.

The employers, i.e. the counties and municipalities, are responsible for ensuring the competencies of the teachers, as is defined in the Education Act (EURYDICE, 2012). They decide on whether the teacher may participate in further education, which is usually provided by higher education institutions. If teachers participate in such in-service training, they are freed from some of their duties while continuing to receive full salary.

3. The System of Vocational and Professional Education and Training

This section of the Factbook describes the vocational education and training (VET) system at the upper secondary level and the professional education and training system (PET) at the tertiary level in more detail. Thereby, the term vocational and professional education and training (VPET) refers to both, the VET and the PET system.

Table 5: Summary statistics of the Norwegian VET system

VET pathway enrolment share out of all upper secondary (%)	~50%
Program enrolment share out of all VET pathway (%)	See Table 5
Number of curricula/qualifications	194 trade and journeyman's certificates
Ø Share of time spent in workplace (vs. classroom)	Usually 2 years of school-based VET being followed by 2 years of work-based apprenticeships.
Work contract (Yes/No)	Yes
Ø Share of vocation-specific content (vs. general) in classroom education	50-75 percent vocation-specific vs. 25-50 percent general education
Classroom/workplace sequencing (Alternating, Sequentially)	Sequentially
Frequency of workplace learning (Annually, Semi-annually, quarterly, monthly, weekly)	2-year lasting apprenticeship. In addition, there are work placements during the first two years of school-based VET.
Program duration (Years)	Usually 4 years, with a minimum of 3 years. However, many students cannot finish within the expected time.
Involved Actors	Employer, county (upper secondary vocational school), apprentice
Reform Years	Knowledge Promotion reform was introduced in 2006. Since 2013, many measures are being implemented in order to tackle problems and enhance VET's attractiveness.
Reforms Summary	Redesign of all curricula. New, more flexible programmes; general increase in quality of VET education.

Source: own compilation.

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

Norway has a strong tradition of VET at the upper secondary level. As in many other countries, the economical demand for skilled workers has seen a continuous increase, and the importance of VET has been strongly acknowledged by the Norwegian government (NMER, 2017a). At the upper secondary level, the VET pathway is fully integrated into the Norwegian formal education system. As such, both fall under the same organization and legislation. For example, just as teachers in general education, VET teachers need to be qualified in the relevant subject as well as in pedagogics and didactics (SIU, 2016, p. 17). Education is usually provided by combined public schools that offer both general education and VET. As for all levels of school education, the Ministry of Education and Research also holds overall responsibility for VET, defining curricula and structure, while most tasks are decentralized (CEDEFOP, 2017a). Concretely, Norway's VET system is based on the tripartite cooperation principle. This is to say that the trade unions, employer organisations as well as government

representatives have a say in the VET system. Hereby, cooperation with the stakeholders at the different levels of governance is ensured, as elaborated in section 3.3.2.

However, data reveals that in reality, the VET pathway is not regarded as an equivalent alternative to the more academic path. Despite increasing demand, the proportion of pupils choosing the VET route is decreasing (SA, 2016). In addition, there was a slightly decreasing but still very high dropout rate of 25 percent for the VET pathway in 2016 (compared to 5 percent in general education), and only 40 percent of pupils in the upper-secondary VET completed their programme without delay, as opposed to 76 percent of pupils in the general education path (SN, 2018, p. 14). The rates vary considerably with the different programmes, as revealed in Table 6.

Table 6: Enrolment and Dropout rates in vocational upper secondary education 2008-2013

Programme	Enrolment rates	Ratio of pupils who dropped out during studies	Ratio of pupils who did not complete their studies within 5 years
Building and Construction	10.7	29.5	47.6
Design and Crafts	5.4	30.4	48.9
Electrical Trades	14.6	17.4	35.1
Health and Social Care	23.4	25.2	42.0
Agriculture and Fishery	5.1	26.9	45.6
Media and communication	8.4	7.7	18.8
Restaurant and Food	5.2	39.1	58.2
Service and Transport	10.2	26.9	43.9
Technical and Industrial Production	17	31.3	48.4

Source: (CEDEFOP, 2017b; SIU, 2016).

The vocational path is thought to be the easier option and often chosen by students with lower grades; there is a strong correlation between weak performance in lower secondary and dropout in secondary education (NDET, 2016). Further, these problems also have a strong relation to problems with apprenticeship placements and teacher competence (CEDEFOP, 2017a).

In order to tackle these problems, the government has been trying to make amendments for many years, and adapted a white paper, *Skilled Workers for the Future*, which concerns especially post-secondary VET and PET (NMER, 2017a). Many of them are preventive measures, trying to identify individuals with a need for modified learning at the earliest stage possible, i.e. during primary school (CEDEFOP, 2017b).

Against this background, we will discuss the structure of the upper secondary stage of the Norwegian VET system, which remained unaffected by recent amendments. At the end of this section, we provide information on the post-secondary non-tertiary stage.

3.1.1 Upper Secondary Vocational Education

Upon successful completion of compulsory education, 98 percent of the pupils in Norway pursued upper secondary education in 2015 (SN, 2017c). Around half of them chose one of the eight VET programmes that are available at this stage (see Table 5). As the VET system is fully integrated into the educational system, there are no special entry requirements: the pupils, who are usually between 16 and 21 years old, are entitled to free choice. The standard model for VET at the upper secondary level is two years of vocational school at a public school that are then followed upon by two years of apprenticeship in a public or private enterprise; the “2+2 model” (CEDEFOP, 2017a). However, the structure varies according to the chosen trade; some apprenticeships include three years of school and only one year of practical work, whereas in other trades, apprentices undergo only one year of school followed by a three-year apprenticeship.

As a further possibility, a parliament white paper from 2013 launched a more flexible VET system including the possibility to substitute apprenticeships with bridging courses that grant pupils access to higher general education programs. It is targeted at pupils who fail to find an apprenticeship (CEDEFOP, 2017b).

In the standard “2+2” structure, the main content of the first two years of vocational school consists of programme subjects with increasing specialisation into a trade of interest, amounting to 50 percent of lessons. They involve theory and practice, but are assessed by theoretical examinations at the end of each of the two years. The rest of the lessons is split up equally between general education, i.e. the common core subjects Norwegian, English, mathematics, natural and social science, and a study project that usually involves practical training in school and work placements. However, in order to raise the standard of VET, policy initiatives that increase the importance of the common core subjects were adapted in 2016. This should also simplify possible transitions to the general education path. At the end of the two years of school, pupils have to take a practical exam that assesses all vocational subjects (SIU, 2016, p. 13 et seq.).

Having completed the two years of school, the pupils are supposed to start their two-year apprenticeship. The first year of apprenticeship is usually an introductory training in the chosen vocational area, and the second year involves a higher degree of practical work in a specific trade. The training is company-based; apprentices sign a contract with the enterprise and receive a salary that normally starts at 30 percent of a skilled worker’s salary or roughly 950 – 1,200 USD per month (SIU, 2016, p. 14). However, apprenticeships usually also comprise instruction given in schools, which is covered by state grants (EURYDICE, 2014b). In line with the common objective of Norwegian upper secondary education of achieving a recognized qualification, the apprenticeships involve a journeyman’s or a trade examination assessed by

a county-board. If completed successfully, the candidates are rewarded with a respective certificate at ISCED level 4.¹¹ The examinations involve practical skill tests as well as theoretical aspects of a trade: the candidates not only solve tasks, but also need to explain why they chose certain methods. Currently, there are 194 different certificates available at the upper secondary level of vocational education (SIU, 2016, p. 11). Moreover, students obtain a certificate in the specific vocational subject upon completion of three years of upper secondary school if they pass all subjects.

However, placements are not guaranteed and the pupils themselves are in charge of applying for an apprenticeship position with one of the approved enterprises. Companies that wish to provide apprenticeship training have to apply at county authorities, which verify if they meet the training requirements such as employing a qualified training supervisor as well as trainers to tutor the apprentices. These requirements are set in the national curriculum. In return, companies receive a grant, which amounted to € 13,000 per apprentice for the entire training period in 2015.

During the first two years of school, there are preparatory courses and career guidance to help the pupils, but still around one third of the students cannot get an apprenticeship (CEDEFOP, 2017b). In 2015/2016, around 12 percent of them chose to attend the bridging course described above. The rest either postpones their apprenticeship or leaves education (SIU, 2016, p. 14). In order to tackle this problem, the government decided to establish more courses and better career guidance as a strategy to increase the completion rate and enhance the cooperation between institutions and companies, which would hopefully lead to more placements.

As described in section 2.4, apprentices have the option of taking a one-year course in the core subjects, which is equivalent to the third year of school for pupils of the general educational pathway. This one-year course is usually taken after receiving the trade or journeyman's certificate and grants apprentices general access to higher general education.

A particularity of the upper secondary VET are the high rates of adult learners: 47 percent of the absolvents were 24+ years old in 2015 (SIU, 2016, p. 24). This is mainly due to two factors: first, validation of prior learning and professional experience is a very common practice in Norway. If the working experience matches the national curricula, it can substitute formal qualifications so that applicants may be exempted from parts of the programmes, leading to a shorter training. In some cases, applicants may be admitted to the journeyman's or trade

¹¹ Thus, they are effectively post-secondary non-tertiary qualifications. However, since the majority of the provision clearly takes place at upper-secondary level, this stage can be classified as upper secondary education.

examinations directly. Second, Norwegian citizens have a statutory right to receive upper secondary education.

3.1.2 Post-secondary non-tertiary education

Although usually labelled as tertiary education, there is a post-secondary non-tertiary sector in Norway. The counties are responsible for administration, and manage some public technical and maritime colleges that offer two-year lasting courses at this level (EURYDICE, 2014b). Most providers however are private institutions. They offer a plethora of courses at this level, some of them not available at the upper-secondary level. Private institutions design their own courses that run between six months and two years. In order to offer courses at this stage, providers have to apply with the Norwegian Agency for Quality Assurance in Education (NOKUT). In general, these courses have grown in popularity in recent years, but it remains a small sector: 115 providers with a total of 15,146 students offered 1,321 recognised programmes in 2015 (SIU, 2016, p. 20). Acknowledging the need for skilled workers, the Norwegian government decided to promote vocational college education by, among other measures, funding new study programmes and ensuring a high quality of the teaching staff (NMER, 2017a).

The education at this stage provides students who already have practical experience, e.g. from vocational upper secondary education, further specialisation in the sector in which they are working in. Consequently, most programmes are designed as part-time studies. Although the courses are labour market oriented, they can act as a bridge to higher education: some of the programmes in engineering and technical studies allow the absolvents to enter the second year of the programmes in tertiary vocational colleges directly. The entry requirements are a completed upper secondary education or similar qualifications and it is open for students aged 19 or older. Students pursuing approved programmes are entitled to loans and grants from the State Education Loan Fund.

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

Vocational and non-vocational education is formally equal at the post-secondary level and there is no clear line of progression for holders of a trade or journeyman's certificate (UNESCO, 2013, p. 8). Most training at this stage is conducted in the companies themselves. The most directly linked professional certifications are the Master Craftsman Certificates, which at ISCED level 5 are the highest education in crafts. Similar to the "Meisterausbildung" (Master craftsman) in Switzerland, they are aimed at professionals with several years of work experience who want to establish their own business or get into management (SIU, 2016, p. 23). Consequently, besides vocational theory, the training also comprises various courses in

business management, marketing and economics. The curriculum, defined by the Master Craftsman Certificate Committee, is based on the input from stakeholders and former absolvents.

Currently, 73 different courses for Master Craftsman Certificates are provided at one type of adult learning associations called *Folkeuniversitetet* as well as at private tertiary vocational education colleges. They are part-time courses that take two years to complete and are also offered as distance learning courses. The entry requirement is the successful completion of a trade or journeyman's certificate (upper secondary vocational education) or an equivalent foreign certification. At the end of the courses, written examinations for every subject are held.

Besides the Master Craftsman Certificates, the 16 adult learning associations with 475 member organisations offer a plethora of courses, of which some are aimed at professionals (SIU, 2016, p. 27). In some cases, the learning associations cooperate with higher education institutions that would then arrange the examinations, in which case they qualify as higher education. About 504,898 participants attended such courses in 2016 (SN, 2018, p. 22).

There are also bachelor programmes aimed at professionals within the general higher education (SIU, 2016, p. 22). Higher education institutions design these programmes individually; most of these are engineering degrees, and only need to conform their own quality assurance systems. However, these need to be accredited by NOKUT and are reviewed every five years. In addition, higher education institutions in Norway need to have a consultative council for cooperation with working life in order to ensure the courses offered are relevant for the labour market.

3.3 Regulatory and Institutional Framework of the VPET System

3.3.1 Central Elements of VPET Legislation

Central to the educational legislation of the Norwegian education system is the Education Act that was endorsed in 1998, last amended in June 2017.¹² It regulates primary up to upper secondary education, including VET, provided in public and private schools (MoE, 2014). Key elements of the Norwegian education system are defined, such as:

- General aims and scope
- Design and structure of the different levels of the education system and the apprenticeships
- Special education
- Involvement of stakeholder bodies
- Responsibilities of governmental actors

¹² As of January 2018.

- Quality control

Post-secondary non-tertiary education is legislated by the Act on vocational post-secondary education from 2003 (EURYDICE, 2014b). Since 2010, counties are responsible for this sector and a national qualifications framework was introduced by amendments in the same year (UNESCO, 2012, p. 5). The relevant legislation for the PET sector depends on the programmes. The Act on Master Craftsman Certificates (“Lov om mesterbrev”) of 1986 regulates Master Craftsman Certificates (SIU, 2016, p. 23). Programmes provided at higher education institutions however are regulated by the Act on University and University colleges issued in 2005, and courses provided at adult learning associations are regulated by the Adult Education Act of 1976.

3.3.2 Key Actors

a) Vocational Education and Training

Many stakeholders are involved in the Norwegian VET system at different levels. In order to provide an overview, the key actors and their relations are introduced in this chapter.

Government

The Ministry of Education and Research (MOER) is the body of the Norwegian government that is responsible for matters of education and training at all levels (SIU, 2016; UNESCO, 2012). It has overall responsibility for the education system and develops the national policy according to the objectives that are set by the Parliament.

Under the MOER, different bodies within the ministry are involved. Its executive agency is the Directorate for Education and Training, which is responsible for curriculum development, national assessments and quality control. The latter two tasks are carried out by the Norwegian Agency for Quality Assurance in Education (NOKUT), an independent agency under the MOER, with the Directorate for Education and Training coordinating these activities. However, the effective decision-making and execution is carried out mostly at the regional level. For example, teaching content and methods as well as assessment criteria are usually defined locally, giving teachers considerable freedom for delivering the lessons (UNESCO, 2012).

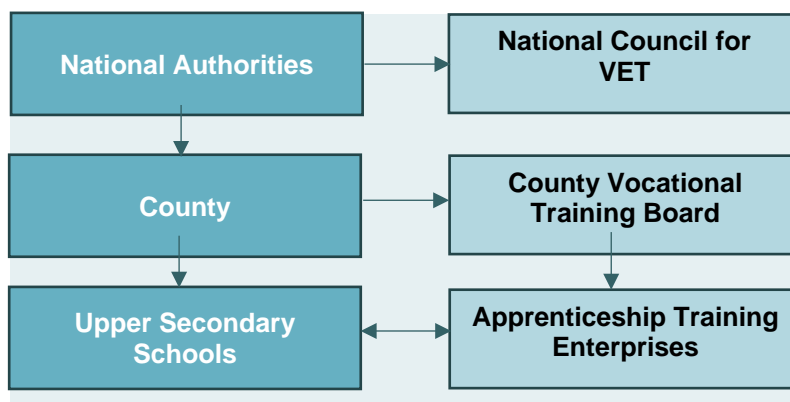
The counties are responsible for the provision of upper secondary education including VET at the upper-secondary and post-secondary non-tertiary level. Companies need the approval of the counties in order to be able to provide training and apprenticeships. The municipalities administer kindergartens, primary and lower secondary education. Counties and municipalities are the school-owners at the respective level and are in charge of designing comprehensive curricula in line with the framework provided by the MOER as well as organization and financing of the provision. However, the funds are provided by the government and the

counties and municipalities report to the MOER via a state representative, the County Governor (UNESCO, 2012). The County Governor's task is to monitor and ensure that the national policies are implemented into the local decisions.

Representation and advisory bodies

The importance of cooperation between the government and social partners in the VET system is strongly recognised in Norway. Representation in various advisory bodies is institutionalised in the Vocational Training Act and the International Labour Organisation (ILO) Convention 142 (SIU, 2016, p. 31). In all the advisory bodies, stakeholder representatives hold the majority of seats. Figure 3 shows how the public authorities and the advisory bodies are organised in a general scheme that applies for upper-secondary VET. Post-secondary non-tertiary VET is discussed at the end of this section.

Figure 5 Administrative Structure of upper-secondary VET



Source: own graphic, based on (SIU, 2016)

The MOER appoints the National Council for VET, which is a body for cooperation within VET that includes representatives of trade unions as well as employer organisations (CEDEFOP, 2017a). It acts as an overarching body for the eight sub-councils that each cover one of the eight pathways in the Norwegian VET-system. Stakeholders can directly influence the structure and general content of the different trades. A further body at this level is the National Appeals Board that is concerned with apprentices who failed their examinations at the county level (SIU, 2016, p. 32).

In each county, there is a Vocational Training Board: 20 in total. They are advisory boards for regional development and provision, and consist of representatives of the different social partners. These boards are especially involved in designing the specific curricula of training programmes and securing the cooperation with regional enterprises. They also have a monitoring function and inspect the quality of the training provided in companies. The counties themselves are in charge of VET provision such as approving training establishments and

apprenticeship placement. Moreover, there are trade-specific Examination Boards in each county that are responsible for the journeyman's and trade examinations. At least three board members (of which no less than two must have formal professional competence and work experience) are proposed by employer and employee-organisations, and appointed by the County Vocational Training Board (KARRI, 2018).

At the municipal level, there are School Boards where representatives of teaching staff, pupils and parents work together with municipal authorities to establish the educational activity.

However, because there is strong emphasis on individual choice in the Norwegian upper secondary stage of education, the influence of stakeholders is somewhat limited: they need to cater for pupil demand of programmes.

In addition, there are independent organisations, notably the Apprenticeship Training Agencies (SIU, 2016, p. 15). They are umbrella organizations of companies that provide training and cooperate to reduce administrative tasks, train apprentice tutors, and ensure conformity and quality of the training. Approximately 75 percent of the companies that provide apprenticeship training are organized in such organizations.

In the case of upper-secondary non-tertiary education, the stakeholders such as teachers, students, employers and employees are involved through the National Council for Tertiary Vocational Education, as well as one advisory body for technical and maritime education and one for health and social education (SIU, 2016, p. 33). However, as the providers develop their own programmes, the involvement is less direct in nature; its main function is to coordinate activities and strengthen links between the different stakeholders.

Education and training providers

Upper secondary VET is provided by combined public schools that offer both general education and vocational training. They are run by the counties.

Providers of post-secondary non-tertiary VET need to be recognized by the Norwegian Agency for Quality Assurance in Education (NOKUT) and are administrated by the counties. The institutions can be grouped as follows:

- Public technical and maritime colleges run by the county
- State funded private schools
- Private tertiary vocational education colleges

b) Professional Education and Training

Government

Just as is the case for VET, the MOER has the overall responsibility for PET too. However, courses aimed at professionals are a part of the higher education system; there is neither a formal nor non-formal distinction. Higher education institutions are directly administered by the MOER. As is the case with post-secondary non-tertiary institutions, there is a separate government body, NOKUT, which is in charge of accrediting institutions and monitoring the quality of the programmes.

Representation and advisory bodies

The Master Craftsman Certificate Committee organizes the Master Craftsman Certification. The committee consists of mainly social partners and master craftsmen. The leader of the Committee is appointed by the Ministry of Industry and Trade, while the other members are selected by the Cooperation Council for Vocational Training (mesterbrev.no, 2018).

The Norwegian higher education institutions are organized in the Norwegian Association of Higher Education Institution that comprises of representatives of the different higher education institutions in Norway. It is common practice to consult with the national boards of the relevant industries when creating study programmes, but there are no legal specifications.

As with post-secondary non-tertiary education, which is formally a part of higher education in Norway, stakeholders such as teachers, students, employers and employees are involved through the National Council for Tertiary Vocational Education as well as one advisory body for technical and maritime education and one for health and social education (SIU, 2016, p. 33).

Education and training providers

The same institutions that provide courses for post-secondary non-tertiary sector can offer courses such as Master Craftsman courses.

3.4 Educational Finance of the VPET System

3.4.1 Educational finance of the VET system

In Norway, VET at the upper secondary sector is fully integrated into the general education system. In public education, there are no school fees; all costs are publicly subsidized. The counties are responsible for financing. Besides local taxes, counties receive block grants from the state, which they can manage independently (CEDEFOP, 2017b; EURYDICE, 2011b). Costs for school-based vocational education are also covered by the counties.

If approved private schools are attended, school fees finance 15 percent of the total costs, while the remaining 85 percent are financed by the government (EURYDICE, 2011c).

3.4.2 Educational finance of the PET system

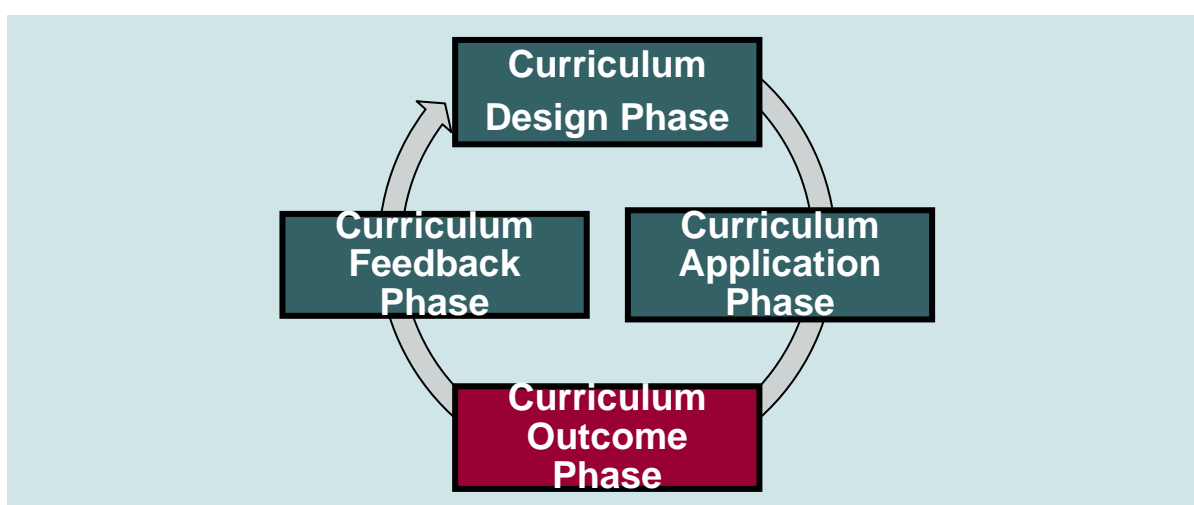
As there is no dedicated PET system in Norway, the financing of programmes at this level depends on the institution in which the courses are provided. Public higher education institutions receive full funding from the government via the Ministry of Education and Research (MOER). Public higher education institutions charge fees only in case of non-regular courses such as continuing education programmes and vocational online open courses, as they are not covered by public funding.

In contrast, private institutions usually charge tuition fees, which need to be used for the students; schools are not allowed to make profit in Norway (EURYDICE, 2011c). NOKUT-approved study programmes are entitled to state funding. Programmes provided by adult learning associations and other institutions that offer PET-related programmes such as private distance learning institutions may receive public funding, but their main source of funding are tuition fees.

3.5 Curriculum Development

The curriculum is a central element for the functioning of a VPET system by defining the framework and the (quality) standards for the education system. The development of a curriculum can be decomposed into a three-step process with a curriculum design, a curriculum application and a curriculum feedback phase. 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 6: 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. Therefore, the discussion in the respective subchapter

below focuses on the degree and the amount of stakeholder participation concerning curriculum design in Norway. 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 phase subchapter in this Factbook focuses 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 analysed in the curriculum feedback phase. This evaluation process is important as it may render a more refined curriculum design than was possible in the first place.

3.5.1 Curriculum Design Phase

The design phase is crucial for the whole curriculum process. In order to ensure that the skills taught in the VPET programmes correspond to the needs of the labour market, experts from companies should be involved in defining the qualification standards and learning contents of the curricula.

The Directorate for Education and Training (DFET) is the governmental agency in charge of curriculum development up until the upper secondary level of education. To do so, it appoints trade-specific expert groups consisting of VET teachers as well as representatives of employer and employee organisations that are involved in VET (UNESCO, 2013, p. 10). They cooperate to identify the competency profiles and on that basis, design or adapt the subject curricula. The different stakeholders can then review these drafts for three months using internet-based surveys or attending seminars and other kinds of meetings (SIU, 2016, p. 34 et seq.). Based on this feedback, the drafts are then re-examined and finally approved by the DFET.

These National Curricula generally consist of five elements:

- Subject curriculum: learning outcomes and the final assessment are defined. Moreover, suggestions for how to integrate the basic skills (oral and written expression, reading, numeracy, digital skills) into the courses are given.
- Distribution of teaching hours is defined at national level.
- Distribution and provision of the education programmes, i.e. the eight different VET programmes.
- Core curriculum: aspects common to all education in Norway such as basic values, general education and career guidance are set.
- Quality framework: the different responsibilities are defined, which especially concerns the county authorities in the case of VET.

Thus, the National Curricula only define general aspects, and the local schools and training providers enjoy a great deal of freedom in adapting these curricula. This in fact requires the local schools to having their own system of curricula-implementation. To facilitate this process,

the DFET releases guidelines. Moreover, this is one of the main reasons why 75 percent of apprenticeship-providing companies are cooperating in umbrella organisations.

In contrast, at the post-secondary stage, programmes are designed by the institutions themselves. They usually cooperate with industry boards when designing a relevant programme, but are not required to do so. However, all higher education institutions need to have a strategy for employer-cooperation (SIU, 2016, p. 22). Moreover, all institutions at this level have external board members.

3.5.2 Curriculum Application Phase

The way in which a curriculum is implemented—especially with respect to learning environments—is important to achieve the intended learning outcome.

As described in section 3.1, VET programs (upper secondary level) in Norway have a school- and a work based component. In contrast, PET programs (postsecondary level) are exclusively school-based, as described in section 3.2.

The quality of the school-based as well as the work-based training at the upper secondary education level is the responsibility of the counties, which consult with the County Vocational Training Boards in these matters (SIU, 2016, p. 37). VET at this stage usually follows the “2+2” model, with 2 years of school based VET being followed by a 2-year apprenticeship at a company (see section 3.1.1). The counties need to accredit companies before they are legally permitted to employ apprentices. The county governors then carry out an inspection in order to verify if the providers meet the quality standards defined in the Education Act, such as employing a qualified training supervisor and at least one trainer, who can be a regular worker, per two apprentices. They can do so on their own initiative. Moreover, joint national inspections under the guidance of the Directorate for Education and Training can take place in case of any kind of incident.

The Education Act also defines the standards for the journeyman’s and trade examinations. They are designed and assessed by trade-specific Examination Boards (see section 3.3.2). The Examination Board contacts a person from the learning company prior to the examination in order to arrange the details (KARRI, 2018). For example, the examination can take place at the apprenticeship-providing company, and may include tasks that were suggested by the company.

The costs for the training of apprentices are partly subsidized by the Norwegian state (EURYDICE, 2011c). Concretely, companies receive a fixed grant per apprentice for the 2-year training period. Its purpose is to cover the training costs of the apprentice, i.e. especially the first year, but not the period when the apprentice can productively contribute. In 2015, the

grant amounted to € 13,000 per apprentice, but can be higher in case of rare crafts or apprentices who need special support (SIU, 2016, p. 15). In normal cases however, no further expenses e.g. for equipment provision is covered by the state.

3.5.3 Curriculum Feedback Phase

The curriculum feedback phase deals with the question, whether and how educational outcomes are analysed. Based on this, the curriculum could be re-worked and improved.

The Directorate for Education and Training (DFET) is in charge of permanently adapting the curricula to the changing needs. In order to do so, a new system that aims to analyse future skills needs was launched in cooperation with Statistics Norway in 2013 (CEDEFOP, 2017b). While future labour market developments should be predicted, current curricula are also systematically analysed by means of studies, evaluation reports or simple statistics (SIU, 2016, p. 37). In order to develop a skills strategy that is relevant to and supported by the different stakeholders, discussing assumptions and results with the different key actors forms a vital part of this project.

The development of this system itself was the result of appointing an external expert groups, namely a cooperation with the OECD. Norway was the first country to sign with the OECD on the OECD Skills Strategy, which aims to analyse if a country is developing the right skills, using these “effectively”, and if its policy is coherent with these goals (OECD, 2014b).

Moreover, the National Quality Assessment System was introduced in 2003 with the aim of establishing a monitoring system that can provide data for curriculum development for primary and secondary education and education policy in general (UNESCO, 2012). It involves national student assessments that should provide a diagnostic tool concerning basic skills, final examinations, and surveys of teaching staff and students.

However, a revision of the VET programmes at upper secondary level can be initiated not only by the DFET, but also by any of the stakeholders involved, be it trade unions, single employers or even pupils. They can do so mainly via the County Vocational Training Boards, which report to the National Council for VET about the current state and possible changes of their VET programme every two years (SIU, 2016, p. 34). They would then produce a white paper, which will be subject to consultation in the government and, upon approval, set the objectives for the development of new programmes or redesign of existing curricula.

For all post-secondary training, i.e. post-secondary non-tertiary VET as well as PET, NOKUT is the responsible agency for accreditation and quality assurance (UNESCO, 2012). However, the institutions at this stage design the programmes themselves and need to employ their own

quality assurance systems. Existing accreditations are audited every five years. The findings are also compared to statistical data about these programmes (NMER, 2017a).

3.6 Supplying Personnel for the VPET System (Teacher Education)

As other teachers at the upper secondary level that were discussed in section 2.6, VET teachers are required formal qualifications in teaching and the relevant subject as well as sufficient grades (four on a scale 1-6, with 6 being the best grade) in maths and Norwegian (UNESCO, 2013, p. 12 et seq.). There are two main pathways for becoming a VET teacher:

- VET teacher education programmes: these are comprehensive bachelor programmes that qualify teachers for working at the upper secondary education level or in adult education. Besides pedagogy and didactics, which are part of all programmes, these also covers vocational subjects. The admission requirements are a trade or journeyman's certification and two years of working experience.
- Vocational practical-pedagogical education programmes: a one-year full-time or two-year part-time programme that focusses on pedagogics and didactics. It is targeted at people with extensive professional experience. The admission requirements are either a bachelor's or master's degree that is professionally oriented and two years of relevant work experience, or a trade or journeyman's certification, two years of working experience as well as two years of further studies (SIU, 2016, p. 17).

All the teacher-training programmes were revised in 2011 in order to implement more continued training in line with the European Qualifications Framework for Lifelong Learning. However, the Norwegian government launched a VET teacher promotion initiative in 2015, because there is a special need for teachers in VET. However, no data regarding teachers in upper secondary vocational education is available.

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

4.1 Major reforms

Due to economic changes in the 1990s, knowledge and skills have become a main priority in Norwegian politics. Creating a knowledge-based society is regarded, among others, as a means to becoming economically independent of current activities that are based on fossil resources.

The Knowledge Promotion reform was introduced in 2006 with the target to foster the development of basic skills more strongly at all levels of education, including apprenticeship-

training in companies as they are seen as basic for all kinds of learning (UNESCO, 2012). All curricula were redesigned in this vision in mind. Curricula now define clear learning objectives at the end of each grade, but do not specify contents and methods of instruction, which also leads to various difficulties, as discussed below in section 4.2. As a follow-up, the government is developing a national strategy for reading and writing, including concrete learning materials and methodologies.

Since 2013, the Norwegian government has been implementing several measures that aim at enhancing the attractiveness of the VET system and counteracting the high dropout rates (EURYDICE, 2015b). The general quality of the subjects should be increased, and more programmes were added to the standard “2+2” model so that the routes are more flexible now. A new model in which pupils alternate between work-based and school-based training during the four years of upper secondary school is being tested (NMER, 2017b). In addition, more apprenticeships are made available by increasing the state grants to companies as well as improving pupil support to better align choices with labour market demand. The target is to provide apprenticeships for all applicants in VET by 2019. Moreover, a white paper “skilled workers for the future” was adopted in 2017 (CEDEFOP, 2017a). It introduces various measures that aim to establish post-secondary VET as a more competitive alternative to the academic pathway (CEDEFOP, 2017a).

4.2 Major challenges

Around half of the pupils pursuing upper secondary education are choosing one of the vocational programmes, but a relatively small share graduates with a journeyman’s or trade certificate (UNESCO, 2013, p. 15). As a shortage of 100’000 skilled workers by 2035 is projected, strong efforts are being made to overcome this state for a number of years, but the results are not satisfactory (NMER, 2017a). This is especially true when considering that government is looking to promote vocational education even more in the future. One problem is the gap between the chosen programmes and the needs of the labour market. Pupils are entitled to freely choose their preferred VET profile, which results in a lack of available apprenticeships or qualification profiles that are in high demand. The OECD (2014b; 2014c) states that better aligning pupil demand with labour market demand by providing more, earlier and better counselling, which should also reduce dropout rates and strengthen the cooperation between educational institutions and companies. Further, it states that only 14 counties operated career centres in 2014, which indicates that a great amount of potential in this regard is still unused.

However, the problems are more intertwined and systematic, as has been stated by the OECD review team (OECD, 2014b). High dropout rates are linked with the VET system being

regarded as a less demanding choice for weaker pupils (CEDEFOP, 2017b). Therefore, not only should the quality of VET generally be raised by improving the competencies of teachers, providing more detailed curricula or launching more options at the post-secondary stage, but better catering for low-performing pupils from the earliest stage on is required. Despite Norway's public expenses per student being 45 percent above OECD average, Norway's PISA performance is only slightly above OECD average, and there is a relatively large share of the population who has low basic skills (UNESCO, 2012). This share has been slowly decreasing since 2012 (OECD, 2018b). However, it is still high in absolute terms, thus contributing to the relatively high skills mismatch rate.

Still, the problem of a relatively low innovation rate and entrepreneurship in the Norwegian economy remains (OECD, 2014b). In lack of an innovative business sector, it is thought that the above-mentioned challenges can only be tackled short-term, as current prosperity is heavily based on the use of fossil resources. The OECD review team suggested the development of a more flexible further and continuous education system that allows professionals to develop skills in accordance with labour market needs, thereby also addressing the skills mismatches (OECD, 2014c, p. 16 et seq.).

An additional challenge is the interaction between the different stakeholders in the VPET system. Not only strong partnerships between trade unions, employer organisations and government representatives, but also the partnerships between the different levels of governance are key to a successfully working VPET system. While general national policies that only build the framework for local adaptation reflects Norway's geographical diversity, the need to develop their own curricula often presents difficulties for individual schools and teachers (UNESCO, 2012). Better guidance and resources regarding content and method could balance the diverse requirements out.

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