

Factbook Education System: Croatia

Report

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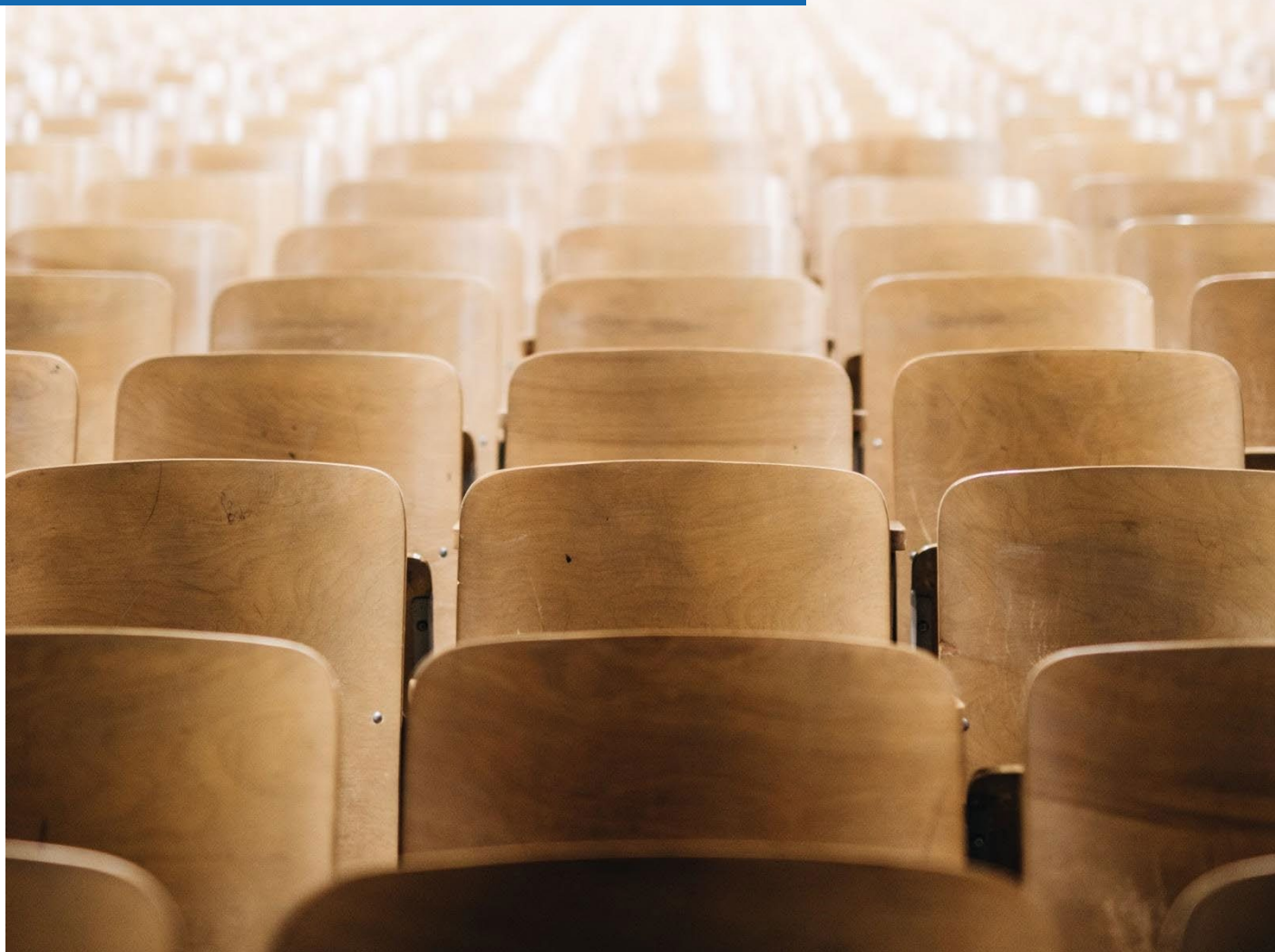
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Contents

1.	Foreword	6
2.	Croatia's Economy and Political System	8
2.1	Croatia's Economy	8
2.2	The Labour Market	11
2.2.1	Overview of the Croatian Labour Market	11
2.2.2	The KOF Youth Labour Market Index	13
2.2.3	The KOF YLMI for Croatia	14
2.3	Croatia's Political System	15
2.3.1	Overview of the Croatian Political System	15
2.3.2	Politics and Goals of the Education System	16
3.	Formal System of Education	17
3.1	Pre Primary Education	19
3.2	Primary and Lower Secondary Education	20
3.3	Upper Secondary Education	20
3.4	Postsecondary and Higher Education	21
3.5	Continuing Education (Adult Education)	23
3.6	Teacher Education	24
4.	The System of Vocational and Professional Education and Training	25
4.1	Vocational Education and Training (Upper Secondary Education Level)	25
4.1.1	Excursus: JMO and the Dual Education Model	28
4.2	Professional Education and Training (Postsecondary Level)	29
4.3	Regulatory and Institutional Framework of the Vocational and Professional Education and Training System	30
4.3.1	Central Elements of Vocational and Professional Education and Training Legislation	30
4.4	Educational Finance of the Vocational and Professional Education and Training System	34
4.4.1	Educational Finance of the Vocational Education and Training System	34
4.4.2	Educational Finance of the Professional Education and Training System	34
4.5	Curriculum Development	35
4.5.1	Curriculum Design Phase	35
4.5.2	Curriculum Application Phase	37
4.5.3	Curriculum Feedback Phase	37
4.6	Supplying Personnel for the Vocational and Professional Education and Training System (Teacher Education)	38
5.	Major Reforms in the Past and Challenges for the Future	39
5.1	Major Reforms	39
5.2	Major Challenges	40
6.	References	42

List of Abbreviations

ASHE	Agency for Science and Higher Education
ASOO	Agency for Vocational Training and Education and Adult Education
Cedefop	European Centre for the Development of Vocational Training
COVID-19	Coronavirus disease 2019
CROQF	Croatian Qualification Framework
EQAVET	European Quality Assurance for Vocational Education and Training ToDO
EQF	European Qualification Framework
EU	European Union
EU-27	EU-Members excluding Great Britain after Brexit since January 31 2020
EU-28	EU-Members including Great Britain
FH	Fachhochschule (Universities of Applied Sciences)
GCI	Global Competitiveness Index
GII	Global Innovation Index
GDP	Gross Domestic Product
HF	Höhere Fachschule
HRK	Croatian Kuna (Croatia's national currency)
ILO	International Labour Organisation
IMF	International Monetary Fund
ISCED	International Standard Classification of Education
KOF	Swiss Economic Institute
MoSE	Ministry of Science and Education of the Republic of Croatia
MRMS	Ministry of Labour, Pension System, Family and Social Policy
NQF	National Qualification Framework
OECD	Organisation for Economic Co-operation and Development
PET	Professional 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
WBL	Work-Based Learning
WEF	World Economic Forum
YLMI	Youth Labour Market Index

List of Figures

Figure 1: Employment by sector (as % of total employment), 1991-2019	10
Figure 2: The KOF YLMI for Croatia and OECD Countries (2017)	14
Figure 3: Evolution of the KOF YLMI for Croatia and OECD Countries from 2011 to 2017	15
Figure 4: ISCED 2011 Mapping of Croatia's Education System	18
Figure 5: ISCED 2011 Mapping of Croatia's Higher Education System	22
Figure 6: ISCED 2011 Mapping of Croatia's Upper Secondary Education System	25
Figure 7: Curriculum Value Chain	35
Figure 8: Hierarchy of Curricula defining the Croatian VET System	36
Figure 9: New process of VET qualifications and curricula development in Croatia	37

List of Tables

Table 1: Key Statistics and Information on Croatia	8
Table 2: Value added and employment by sector, 2020	9
Table 3: Labour force participation rate and unemployment rate by age in 2019	12
Table 4: Labour force participation rate and unemployment rate by educational attainment in 2019 (persons aged 25-64)	12
Table 5: Net enrolment rate (NER) and gross enrolment rate (GER) in the school year 2018/2019	19
Table 6: Key data regarding the different IVET types of programmes (2019/2020)	28

1. Foreword

The increasing competitiveness of the world economy as well as the high youth unemployment rates after the worldwide economic crises in 2008/9 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, 2017).

Though not many countries have VPET systems that are comparable to Switzerland’s in terms of quality, efficiency and permeability, many have education pathways that involve some kind of practical or school-based vocational education. The purpose of the CES Education System Factbook Series¹ 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 CES Factbook Education Systems: Croatia, we describe Croatia’s vocational system and discuss the characteristics that are crucial to the functioning of the system. Essential components comprise the regulatory framework and the governance of the VPET system, the involved actors, and their competencies and duties. The Factbook also provides information regarding the financing of the system and describes the process of curriculum development and the involved actors.

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

¹ From 2013 to 2019, the Factbooks were produced within the framework of the Education Systems research division at the KOF Swiss Economic Institute. From 2020 they will be produced by the Chair of Education Systems (CES) group.

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The Education System Factbooks have 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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2. Croatia's Economy and Political System

Category	Outcome
Population	2020: 4.05 million
Area	56,590 km ²
Location	Southeast Europe Balkan Peninsula (Northwest)
Capital city	Zagreb
Government	Unitary Parliamentary Republic
Official language	Croatian
National currency	Kuna (HRK)

Table 1: Key Statistics and Information on Croatia

Source: own table based on Knoema (2021) and BBC News (2018).

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 are briefly described in the first part of this factbook. In addition, this part provides an overview of Croatia's political system with emphasis on the description of education politics.

2.1 Croatia's Economy

The Republic of Croatia is a relatively small, maritime coastal state. Since Croatia achieved independence from Yugoslavia in 1991, the country has developed into a democratic state with a liberal market economy. As a result, Croatia became an upper-middle-income country (World Bank, 2018). The International Monetary Fund (IMF) uses different terminology and classifies Croatia as an "emerging and developing country" (IMF, 2021). This puts Croatia on a roughly similar level to Hungary or Romania. According to the IMF, Croatia's nominal gross domestic product (GDP) per capita in 2020 amounted to US\$14,033. Based on this indicator, Croatia ranks 58th out of 217 countries worldwide (IMF, 2021).

Croatia's 2018 GDP per capita of US\$15,018.2 was slightly lower than that of Slovenia (US\$18,744.2), its northern neighbour state. The OECD's GDP per capita of US\$29,315.6 was almost double that of Croatia. The data compiled includes the following factors: income per capita (US\$), constant prices, constant PPPs, and OECD base year (OECD, 2021).

According to the World Bank Database, Croatian real GDP average growth between 1996 and 2018 was 2.81% per year. The OECD's real GDP average growth between 1996 and 2018 was 2.21% per year (World Bank, 2021).

Economic performance and thus Croatia's GDP began to rise sharply in 2000. With the advent of the global financial and economic crisis, Croatia slid into recession beginning in 2009, from which the economy only began to recover in 2015. From 2016 to 2019, real economic growth averaged approximately 3% annually (OECD, 2021).

Table 2: Value Added and Employment by Sector, 2020

Sector	Croatia: Value Added (%)	EU-27: Value Added (%)	Croatia: Employment (%)	EU-27: Employment (%)
Primary sector	3.9	1.9	6.2	4.5
Agriculture, hunting and forestry, fishing	3.9	1.9	6.2	4.5
Secondary sector	25.7	25	28.8	22.5
Manufacturing, mining and quarrying, other industrial activities	19.4	19.3	20.8	16.0
Of which: manufacturing	14.7	16.2	17.5	14.4
Construction	6.3	5.7	8.0	6.5
Tertiary sector	70.4	73.1	65	72.9
Wholesale and retail trade and repairs, hotels and restaurants, transport, information and communication	25.6	23.2	29.9	27.1
Financial intermediation; real estate, renting and business activities	15.7	16	2.8	3.3
Public administration, defence, education, health, other service activities	29.1	33.9	32.3	42.5

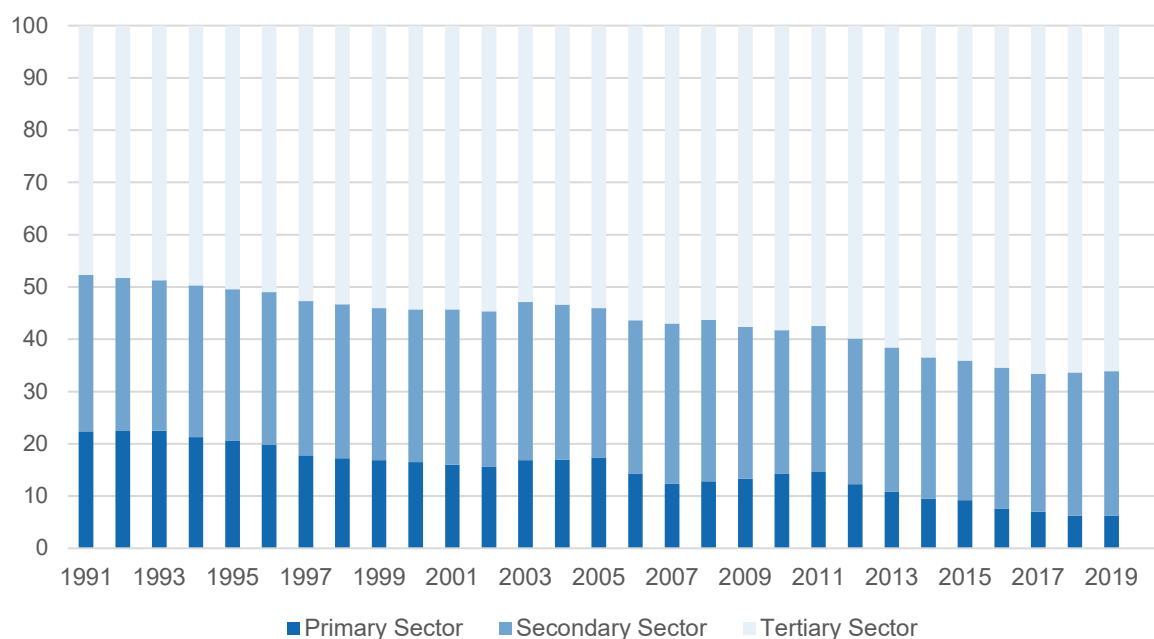
Source: own table based on Eurostat (2021a) and Eurostat (2021b).

Table 2 summarises the value added and employment by sector for Croatia and the 27 member states of the European Union (EU) in 2020. Croatia and the EU-27 show similar patterns for all three sectors in terms of value added and employment. The tertiary sector is most relevant to both value added and employment followed by the secondary sector. The primary sector accounts for the lowest percentages of both value added and employment for both Croatia and the EU.

In terms of value added, only a few percentage points in each sector separated Croatia and the EU-27 in 2020. The largest discrepancy is visible in the employment rate of the secondary and tertiary sectors. While in Croatia 28.8% were employed in the industrial sector, in the EU-27, employment in the industrial sector accounted for 22.5%. In the service sector, employment in the EU countries was 72.9%, which is 7.9% ahead of Croatia (65%).

In particular, the tourism industry, which is part of the service sector, has grown substantially in recent years. Exports of services continue to be dominated by the tourism industry, which has experienced substantial growth since 2015. Nevertheless, this growth is not guaranteed for the future: resilience to natural hazards poses further challenges, especially for the agriculture and tourism sectors, which are the most exposed to the impact of climate change and occurrences of extreme weather events (World Bank, 2018).

Figure 1: Employment by Sector (as a Percentage of Total Employment), 1991–2019



Source: own figure based on World Bank (2021).

As Figure 1 shows, structural transformation has remained modest since 2000, with a slight increase in the primary (services) sector’s share of total value added accompanied by a progressive decline in the relative contribution of agriculture. However, a slight increase can be observed in the tertiary sector, while the percentage share of employment in the other two sectors has declined accordingly. Industry, construction and trade were the main sectoral drivers of changes in gross value added, contributing strongly to growth before the financial crisis. These sectors contracted sharply in the period from 2009 to 2013. The recovery after 2015 led to an increase in export-oriented industry and a recovery in trade and hotels and restaurants boosted by robust development in tourism. Agricultural employment, while low in absolute terms, was halved between 2000 and 2016, reflecting the transition from unskilled workers to more industrial activities during this period (World Bank, 2018).

Another macroeconomic indicator to consider here is the Global Competitiveness Index. This is compiled under the auspices of the World Economic Forum (WEF) and assesses countries’ ability to offer their citizens a high level of prosperity. This in turn depends on how productively a country uses available resources (WEF, 2019). In 2019, Croatia achieved a score of 61.9. This result ranks Croatia 63rd of 141 economies assessed. Croatia belongs to the regional group “Europe and North America”. Within this region, the country achieved the greatest improvement in terms of rank compared to the previous year. In 2018, the country ranked 68th. Croatia achieved the highest scores in the health and primary education category and in the higher education and training category. According to the evaluation, Croatia’s greatest deficit is in the area of innovation capability (WEF, 2020).

The Global Innovation Index, which ranks countries according to their capacity to enable innovation, ranks Croatia 41st. The Global Innovation Index attests that Croatia has had good results in the area of infrastructure but rates Croatia’s results in the area of market sophistication as only average (Cornell University et al., 2020).

2.2 The Labour Market

The first part of this section describes the general situation of Croatia's labour market. The second part focuses on the youth labour market in particular.

2.2.1 Overview of the Croatian Labour Market

Croatia was in recession between 2009 and 2014 following the global financial crisis and the sovereign debt crisis in Europe. The economy began to recover from these crises in 2015. This is mainly due to the strong revenue from tourism boosted by lower taxes and the positive impact of EU accession on trade. In the following four years until 2019, real economic growth averaged approximately 3% annually. The labour market also recovered well from the crisis period with the unemployment rate decreasing from its peak of 17.3% in 2014 to 6.6% in 2019. The 17.3% rate in 2014 represented the lowest level of unemployment in two decades (OECD, 2021). With the rampant COVID-19 crisis, however, Croatia's labour market is also being put to the test: as in other countries, social and economic life in Croatia was partially shut down. Due to the lack of revenue, Croatian companies could no longer cover labour costs.

Croatian labour market indicators show one of the highest unemployment and lowest employment rates compared to other countries within the EU, especially for youth (Lolic Cipcic, 2019). High unemployment rates impose an economic burden on society due to the suboptimal utilisation of labour as a key production and development resource. The long-standing economic crisis Croatia has recently recovered from has been characterised by high unemployment rates that are usually associated with low economic activity (Lolic Cipcic, 2019).

It is important to highlight that the business climate and competitiveness indicators published by international institutions qualify Croatia as a country with a rigid labour market and rather strict labour protection regulations (Kunovac, 2014). Although Croatian labour legislation has undergone several additions in recent years, it remains relatively inflexible. Legal protection of permanent employment contracts is high, which discourages employers from creating jobs (Lolic Cipcic, 2019). In the 2019 Global Competitiveness Index subcategory of workers' rights, Croatia achieved a high score, placing a strong 14th (WEF, 2019, p. 176).

Croatian law has established a national minimum wage slightly above the official poverty income level. In 2017, the gross minimum wage was only 3,276 Kuna and has been increased continuously since then. In 2021, the defined gross minimum wage is 4,250 Kuna (corresponding to €567), and the net minimum wage is 3,400 Kuna. Eurostat assigns Croatia to the first of three minimum wage groups. In addition to Croatia, this group includes countries such as Romania and Slovakia and is defined by a minimum wage below €750 per month (Eurostat, 2021c).

The law foresees a standard working week of 40 hours and limits overtime to 10 hours per week and 180 hours per year. The legislation also disallows workers younger than 18 years working overtime, at night or in hazardous conditions, including construction, mining and working with electricity (United States Department of State, 2019).

The law provides for workers' right to form and join independent unions of their choice, bargain collectively and conduct legal strikes. The law prohibits antiunion discrimination and allows unions to challenge firings in court. The law requires reinstatement of workers terminated for union activity (United States Department of State, 2019).

Table 3: Labour Force Participation Rate and Unemployment Rate by Age in 2019

Age Group	Labour Force Participation Rate		Unemployment Rate	
	Croatia average	OECD average	Croatia average	OECD average
Total (15–64 years)	66.5	72.8	6.7	5.6
Youth (15–24 years)	33.2	48.1	16.6	11.8
Adults (25–64 years)	53.7	78.4	5.7	4.7

Source: own table based on OECD (2021a) and ILO (2020).

Table 3 shows the Croatian labour force participation rate and unemployment rate by age alongside the OECD member state averages. The Croatian labour force participation rate is lower than the OECD average, with the difference being particularly pronounced for young people (15–24 years). Likewise, Croatia has a higher unemployment rate than OECD countries, which is mainly the case for unemployment among young people. The high youth unemployment can be interpreted as a consequence of the four-year recession in Croatia. Before the overall economy recovered, youth unemployment was at 50% (World Bank, 2018).

A study on employment and the social situation commissioned by the European Parliament states in its introduction that despite declining overall unemployment, Croatia still has one of the highest unemployment rates in the EU for both adult and youth populations, while both employment and activity rates are among the lowest in the EU. To combat this issue, after joining the EU in 2013, Croatia used EU funds to combat the high unemployment rate, especially among young people (Tomic et al., 2019).

Table 4: Labour Force Participation Rate and Unemployment Rate by Educational Attainment in 2019 (Persons Aged 25–64)

Education Level	Labour Force Participation Rate		Unemployment Rate	
	Croatia	OECD average	Croatia	OECD average
Less than upper secondary education	17.48	65.00	9.09	9.20
Upper secondary education	59.38	80.80	6.91	5.50
Tertiary education	71.80	89.00	5.00	3.80

Source: own table based on OECD (2021a), ILO (2020), and World Bank (2021).

Table 4 shows the labour force participation rate and the unemployment rate by educational attainment for Croatia and the OECD members. Croatia's labour force participation rate lies below the OECD average for all education levels.

2.2.2 The KOF Youth Labour Market Index

The KOF Swiss Economic Institute developed the KOF Youth Labour Market Index (KOF YLMI) to compare the youth labour market situation across countries (Renold et al., 2014). The foundation for this index is the critique that a single indicator, such as the widely used youth unemployment rate, does not suffice to describe the youth labour market situation adequately nor provide enough information for a comprehensive cross-country analysis. To increase the amount of information considered and to foster a multi-dimensional view, the KOF YLMI considers twelve indicators that are grouped into four dimensions (see the information box to the right).

Dimensions and Corresponding Indicators of the KOF YLMI

Activity State <ul style="list-style-type: none"> - Unemployment rate - Relaxed unemployment rate² - Not in employment, education or training (NEET) rate
Working Conditions <ul style="list-style-type: none"> - Temporary worker rate - Involuntary part-time worker rate - Atypical working hours rate - In work at risk of poverty rate³ - Vulnerable employment rate⁴
Education <ul style="list-style-type: none"> - Formal education and training rate - Skills mismatch rate
Transition Smoothness <ul style="list-style-type: none"> - Relative unemployment ratio⁵ - Long-term unemployment rate⁶
Source: Renold et al. (2014).

The first dimension is the **Activity State**. It includes three indicators, and captures to what extent the youth (i.e., all individuals aged 15 to 24) are active. The indicators are unemployment rate, relaxed unemployment rate and NEET rate. The second dimension called **Working Conditions** consists of five indicators that capture the quality of employment. Those are the Temporary Worker Rate, the Involuntary Part-time Worker Rate, the Atypical Working Hours Rate, the In-work At-risk-of-Poverty Rate and the Vulnerable Employment Rate. **Education**, the third dimension, aims to capture the quantity and quality of education and training via two indicators: the formal education and training rate and the skills mismatch rate. Finally, the fifth dimension called **Transition Smoothness** describes the dynamics of the process of transition between school and work. The indicators relative unemployment ratio and long-term unemployment rate comprise this dimension.

Before the indicators are aggregated into a single index, each indicator value is rescaled into an indicator score that takes values between 1 and 7, where higher scores suggest more desirable outcomes. The data for the indicators are collected from different international institutions and cover up to 178 countries from 1991 onward. Unfortunately, data is not available for all countries every year, so one of the major limitations of the KOF YLMI is data availability. When data is lacking, a dimension can occasionally be based on a single indicator or must be omitted entirely when no indicator for that category has data available. A lack of indicators can make comparisons across countries or groups of countries problematic and sometimes even impossible.

² 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: "involuntarily inactive").

³ Those who cannot make a decent living out their earnings. It is calculated as the number of youth at work but earning less than 60% of the median national income as a percentage of the total working population.

⁴ 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.

⁵ Is defined as the youth unemployment rate (15-24 years) divided by 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 larger than one.

⁶ Those unemployed for more than one year (52 weeks) as a share of the total number of unemployed (according to the ILO definition).

2.2.3 The KOF YLMI for Croatia

The KOF YLMI for Croatia contains a solid data basis in all categories for the year 2017. Therefore, a comparison with OECD data from the same year is worthwhile. This comparison is visualized in the spider web graph in Figure 2. Croatia particularly underperforms OECD members in the subcategories of Temporary Worker rate. On the other hand, Croatia performs well in:

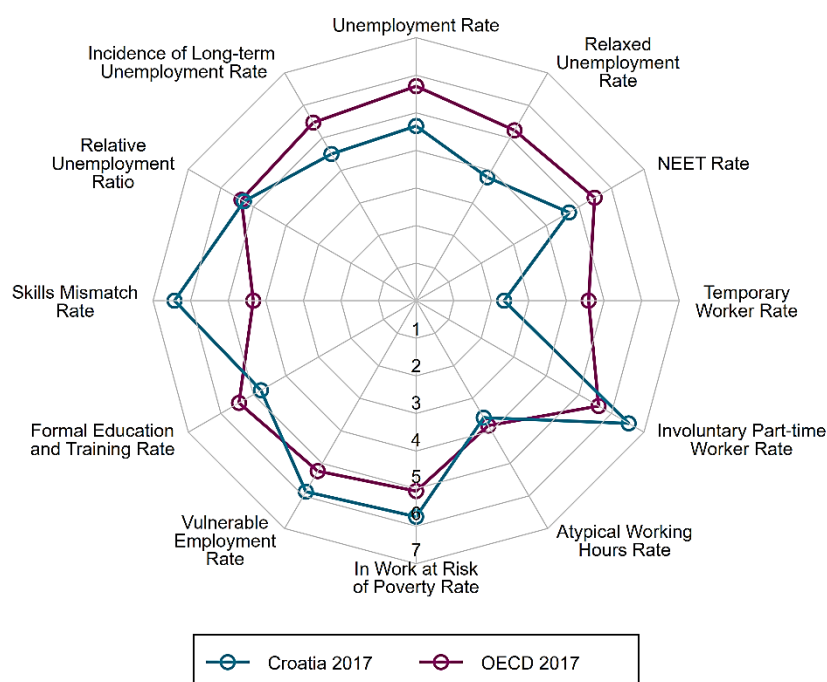
- The Skills Mismatch Rate
- The Work at Risk of Poverty Rate
- The Vulnerable Employment Rate
- The Involuntary Part-Time Worker Rate

Regarding these four indicators, Croatia performs better than the average value of the OECD countries.

In the category of education, Croatia achieved a score of 5.60, while OECD countries scored 4.88 out of 7.00. Of note is Croatia's outstanding score of 6.43 in the Skills Mismatch Rate subcategory. Skills mismatch is the discrepancy between the skills employers seek and the skills individuals acquire (ILO 2020). A relatively large gap between Croatia and the OECD exists in the activity state area. Croatia scores relatively low in all three subcategories, resulting in an activity state score of 4.38. The OECD countries are more than one point ahead of Croatia. Compared to 2016, all values of the subindicators related to Croatia's youth labour market improved (KOF 2019).

Figure 2: The KOF YLMI for Croatia and OECD Countries (2017)

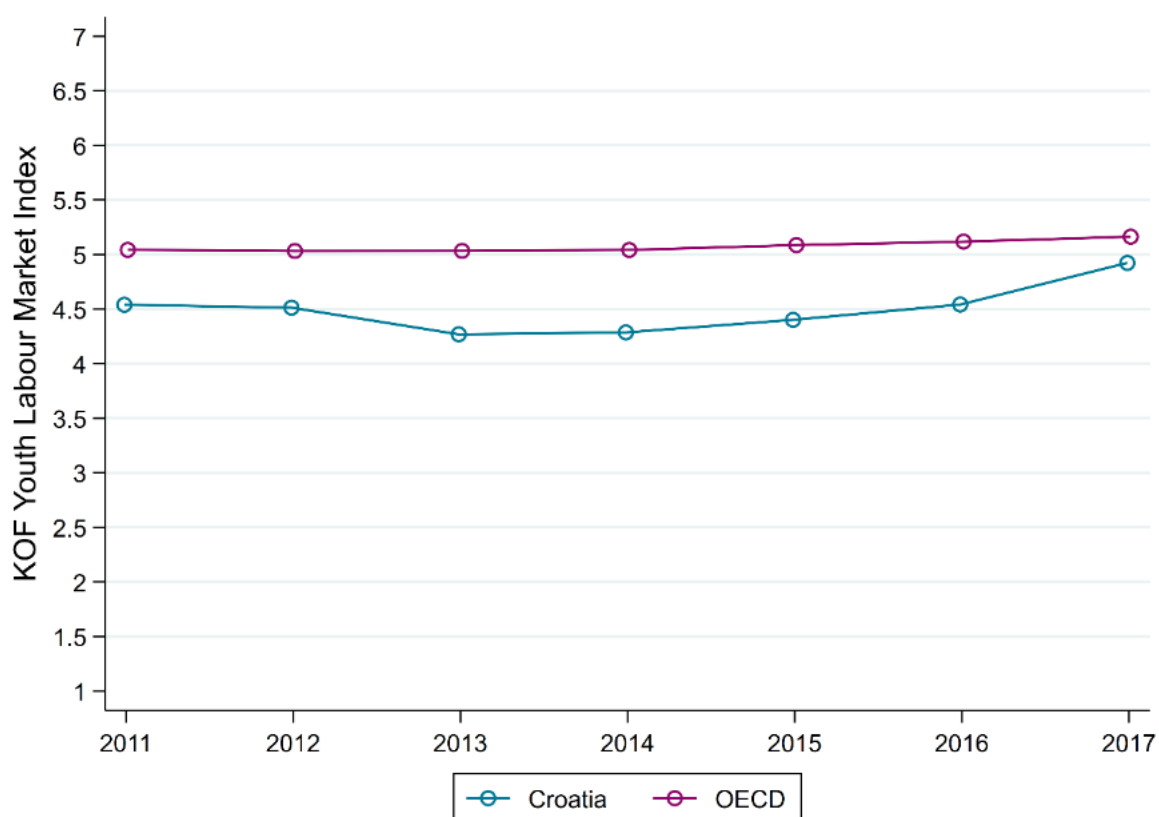
Source: own figure based on KOF (2021).



In Figure 3, the development of Croatia's KOF YLMI over time is shown and is again compared to that of the OECD average. The figure shows the period between 2011 and 2017. Although data on the KOF YLM Index was already collected in the years before 2011, entire data sets of certain subcategories were still missing at that time. In order to draw a stringent comparison, the benchmark was reduced to this time span. The graph reveals that Croatia's YLMI moved downwards only slightly from 2011 to 2012. The achieved score dropped from 4.54 to 4.51. In 2013, the YLMI reached its lowest point with a total of 4.27 points. As can be clearly seen in the case of Croatia, the global economic crisis of 2009 continued to have an impact on the country's youth labour market four years later. After a short stagnation between

2013 and 2014, the youth labour market recovered, which is visible in the rising curve. Croatia experienced a particularly steep ascent between 2016 and 2017, when the index rose from 4.54 to 4.92. A recovery from the crisis is evident, leading to similar values for Croatia as in the pre crisis period of 2008. The graph illustrates that in 2017, the blue Croatian curve was closer to the purple OECD curve than ever before. Clearly, the global economic crisis of 2009 continued to have an impact on Croatia's youth labour market four years later. However, a recovery is evident, leading to similar values for Croatia as in the pre crisis period of 2008. The curve of the OECD countries is less volatile. Between 2011 and 2014, the index fluctuated between 5.03 and 5.04 and then experienced an increase that led to the 2017 level of 5.16 points.

Figure 3: Evolution of the KOF YLMI for Croatia and OECD Countries from 2011 to 2017



Source: own figure based on KOF (2021).

2.3 Croatia's Political System

Understanding the basics of a country's political system and the political goals with respect to its education system are crucial points for understanding the education system in a broader sense. Therefore, Section 1.3.1 begins by presenting Croatia's political system in general. Section 1.3.2 then focuses on the politics and goals of the education system.

2.3.1 Overview of the Croatian Political System

Until 1991, Croatia was part of the Socialist Federal Republic of Yugoslavia as the Socialist Republic of Croatia. After the collapse of the ruling communist party, Croatia drew up its own constitution in 1990, which is still in force today, and then held its first multiparty elections and declared itself an independent state from Yugoslavia in October 1991. In 1992, it was recognised by the United Nations, which enabled Croatia to establish diplomatic relations (BBC News, 2018).

Croatia can be characterised as a unitary state. Until 2000, the semi presidential system was in use. Croatia's semi presidential system of government was replaced by a parliamentary system.⁷ Further amendments enacted in March 2001 abolished the Chamber of Counties. Therefore, the Croatian parliament became unicameral. Power is distributed among the three political pillars: legislative power, executive power and judicial power (Croatian Parliament, 2021).

The Economist (2021) ranks Croatia 58th in its Democracy Index 2020. With an overall score of 6.50, Croatia is classified as a flawed democracy.⁸ In addition to a global ranking, the Democracy Index establishes a classification by region. *The Economist* counts Croatia as part of the Eastern Europe region and ranks it 10th in that region. This puts Croatia relatively far behind its northern neighbour Slovenia (third in Eastern Europe and 35th globally) but ahead of its eastern neighbour Serbia (12th in Eastern Europe and 66th globally). Concerning the different categories of the index, Croatia did relatively well regarding the quality of the electoral process (9.17 out of 10.0) and pluralism. On the other hand, a deficit in political culture lowers the country's overall score (4.38 out of 10.0; (Economist, 2021).

In Transparency International's (2020) Corruption Perceptions Index, which measures "perceived levels of public sector corruption in 180 countries/territories around the world", Croatia placed 63rd with a total of 47/100 points. With regards to neighbouring countries, a similar phenomenon emerges here as in the case of the quality of democracy just documented: Slovenia is in 35th place with a score of 60 points. Serbia has a greater deficit in terms of corruption and ranks 94th with a score of 38 points (Transparency International, 2020).

2.3.2 Politics and Goals of the Education System

National education policy falls within the area of responsibility of the Croatian Ministry of Science and Education (MoSE), which makes it a competence of national dimension. The MoSE is responsible for all national education policy and regulates all educational and administrative issues including funding, curricular planning, examination requirements, educational content, teacher training and the wages of educational staff. In 2021, the ministry is under the leadership of Radovan Fuchs (MoSE, 2021). The local self-government units also perform tasks related to education. They manage local affairs that directly meet the needs of citizens, including education and primary education. This is regulated in Article 129 of the Croatian Constitution (2014). However, other players are also responsible for shaping the Croatian education system. The stakeholders involved in the vocational and professional education and training (VPET) system are discussed in more detail in Section 3.3.2.

Since its independence in 1991, the Croatian state has tried several times to implement wide-ranging educational reforms. Until 2016, five such reform attempts failed. Particularly in the final phase of the accession negotiations with the EU, attempts were made to raise the level of education, improve the equipment of educational institutions and adapt educational standards to the European level. Even though education policy is primarily a matter for the individual member states, the EU is interested in developing as many common objectives as possible in order to provide EU citizens with greater equality of opportunity in education, training and later, the labour market (Wessel et al., 2010).

Probably the greatest problem for Croatia's education system is the exodus of the best-educated young people abroad. Most young people take this step after graduating from university or after vocational training. This phenomenon is referred to as human capital flight or brain drain. It has already been explained several times that Croatia began to recover from the economic crisis in 2015. Wages increased, especially in the hotel industry, but this was not enough to noticeably counteract the exodus. Many Croatians are emigrating to Germany. Thanks to the EU's free movement of persons, they can easily find a job there and receive significantly higher wages than in Croatia. Croatian employers are therefore currently desperately seeking human resources. Since Croatia's neighbouring countries are also struggling with an exodus problem, workers for the construction or tourism sectors are being

⁷ In short, this means that the government is dependent on the direct or indirect support of parliament for its election and in the execution of its tasks.

⁸ Of 167 countries, *The Economist* lists 65 as democracies. Of these, 23 are complete democracies and 52 are flawed democracies.

recruited from the Far East. In September 2020, the Croatian government therefore increased the contingents for foreign workers to 68,000 (SRF Echo der Zeit, 2019).

The second core problem concerns the legacy in the curricula, which are based on a frequently nationalistic and backward-looking view of history and society. History textbooks present the Croatian War, which lasted from 1991 to 1995, in a one-sided and whitewashed way. Attempts to correct this narrative are often hindered by ideological rifts. For the Catholic Church, which is aligned with the conservative parties, these attempts at correction are “atheistic and left-liberal reform plans” (Borchard, 2016).

This chapter described the major social issues related to Croatia’s education. Chapter 4 examines further reforms and challenges.

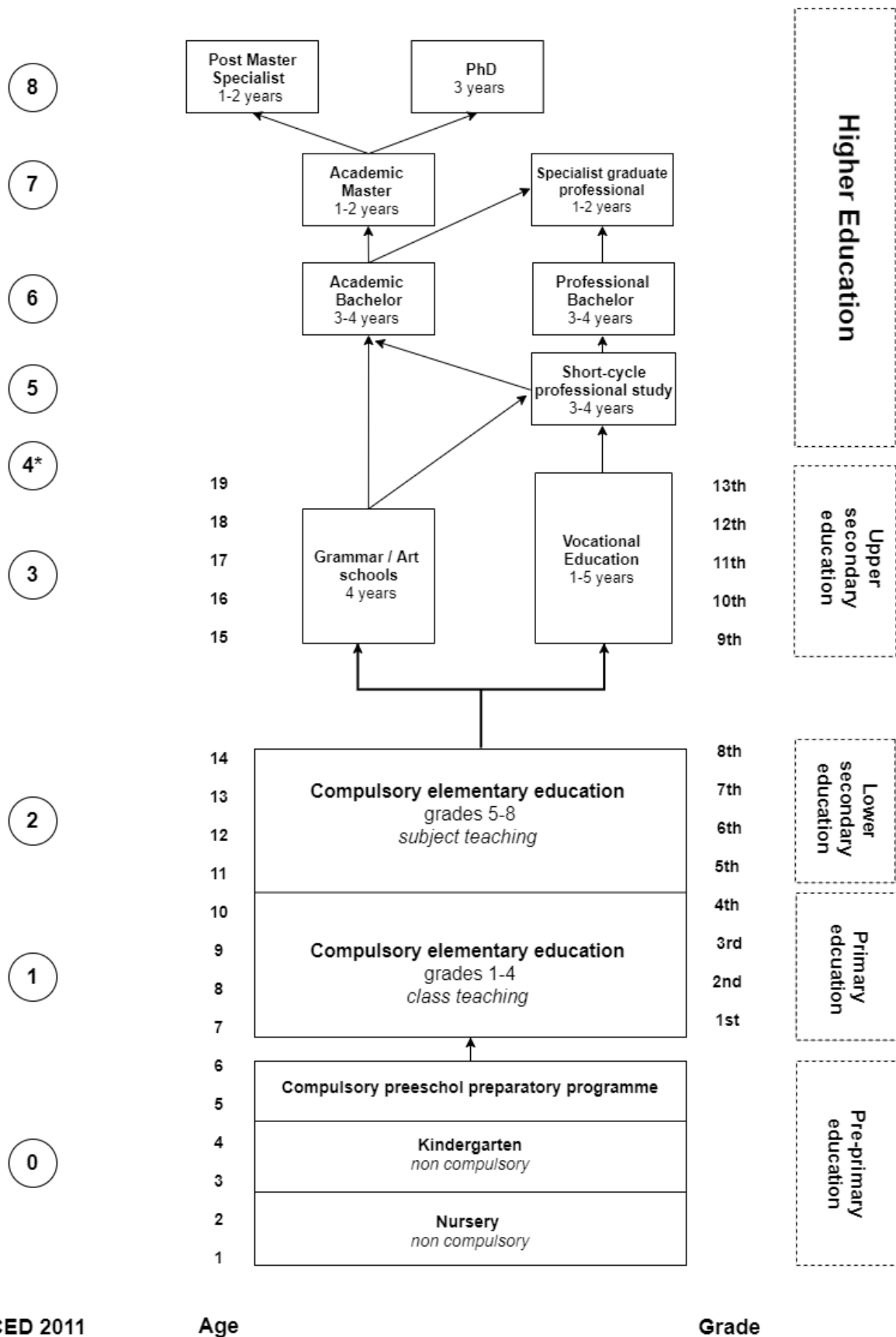
3. Formal System of Education

Figure 4 shows the Croatian education system according to the International Standard Classification of Education (ISCED) 2011. This serves as a rough overview of the stages within the Croatian education system. The real circumstances in secondary education are more multifaceted. This is shown in Figure 5 when the Croatian VPET system is discussed in more detail (cf. Sections 3.1 and 3.2). The ISCED 4 level (post secondary nontertiary education) marked with an asterisk indicates that a description and visualisation have been completely omitted in this figure. This is done in Section 3.2. Publications within the framework of the European Centre for the Development of Vocational Training Cedefop, (2020), also show the so-called adult education, which is outside of the Croatian school system. Such continuing adult education is discussed in Section 2.5.

The education system that prevails today in Croatia has been transformed several times since independence in 1991. Currently, the education system is based on the following fundamental typology: Entering preschool care institutions (nursery) is possible from the age of one. The next sublevel within ISCED level 0 is kindergarten (*vrtić*), which can be attended between the ages of three and six. Both nursery and kindergarten are non mandatory in Croatia. Admission to primary school requires completion of a compulsory preschool preparatory programme. Compulsory primary school is generally held between the ages of six (or seven) and fifteen and is free of charge. Primary education lasts four years. Likewise, four years are spent within the level of lower secondary education. Upper secondary education is voluntary and lasts one to five years depending on the school or vocational training programme chosen. After successful completion of the upper secondary education level, it is possible to attend higher education; to do so, successful completion of the Croatian State Matura is required. Depending on the chosen field of study, the reference period of higher education is up to six years. At the postgraduate level, doctoral programmes usually take three years to complete. Universities also offer postgraduate specialised programmes in specific fields lasting one to two years (Wessel et al., 2010).

According to the European Commission (2019), Croatia’s education spending is close to the EU average. In 2018, Croatia spent 4.7% of its GDP on education (the EU average is 4.6%). The share of education expenditure in general government expenditure (10.5%) is also close to the EU average (10.2%). The share of expenditure on tertiary education is 21.5%, which is above the EU average of 15.0%.

Figure 4: ISCED 2011 Mapping of Croatia's Education System



ISCED 2011

Age

Grade

Source: own figure based on Cedefop (2020) and UNESCO-UNEVOC (2021)

Education Level	ISCED 2011	Net Enrolment Rate (NER)	Gross Enrolment Rate (GER)
Early childhood education development programmes	010	n/a	n/a
Pre Primary education	020	n/a	69.2
Primary education	1	98.4	94.6
Secondary education	2–3	92.4 (2017)	100.1
<i>Lower secondary education</i>	2	99.1	110.8
<i>Upper secondary education</i>	3	86.2	90.5
<i>Percentage enrolled in vocational secondary education</i>	2–3	n/a	69.7 (2019)
Compulsory education age group	1–3	n/a	n/a
Post Secondary non tertiary education	4	n/a	n/a
Tertiary education	5–8	n/a	67.7
<i>Short-cycle tertiary education</i>	5	n/a	n/a
<i>Bachelor or equivalent level</i>	6	n/a	n/a
<i>Master or equivalent level</i>	7	n/a	n/a
<i>Doctoral or equivalent level</i>	8	n/a	n/a

Table 5: Net Enrolment Rate (NER) and Gross Enrolment Rate (GER) in the 2018/2019 School Year

Source: own table based on UNESCO (2020), World Bank (2021), and Cedefop (2020).

Table 5 shows the GER⁹ and NER¹⁰ by education level for 2018. For some cases, data from 2017 had to be considered. The NER quantifies the total number of students in the theoretical age group for a given education level enrolled at that level expressed as a percentage of the total population of 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 the same level of education. For example, for the primary education level, the NER indicates how many students of the typical primary school age are actually enrolled in primary school, while the GER sets the actual number of students in primary education irrespective of their age in relation to those who are the official age to attend primary education.¹¹

Table 5 shows that the GER exceeds the 100% mark at two education levels. GER can exceed 100% due to the inclusion of over-aged and under-aged students because of early or late entrants and grade repetition.

3.1 Pre Primary Education

Nursery school is available from the age of one year and continues until kindergarten school age. Attendance at a kindergarten or preschool is not compulsory. However, parents are encouraged to give children the opportunity to develop social skills at an early age through these programmes. Kindergartens are under state supervision. Some private kindergartens are subsidised by the state. In the school year prior to enrolment in primary school, children are obliged to attend the preschool programme provided by kindergartens and primary schools. In preschool, which 99% of children attend,

⁹ The UNESCO Institute for Statistics (2020) defines the GER as the “number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.”

¹⁰ The UNESCO Institute for Statistics (2020) defines the NER as the “Total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group.”

¹¹ A gross enrolment rate of 100 corresponds to a situation where each child in a given country is enrolled in the corresponding education level. A value above 100 could occur due to students enrolling who are older than the typical enrolment age for primary education (e.g., children who have to repeat grade, adult learners). A value below 100 implies that not everyone who is the typical age for primary education is actually enrolled.

children are prepared for primary school. The education is particularly aimed at promoting the children's cognitive skills. Another focus is on music education (Wessel et al., 2010). Early childhood education and care in Croatia is funded and managed by local authorities. Central educational authorities provide legislative guidance, accreditation and monitoring of the educational programmes (Eurydice, 2021). Table 4 indicates that almost 70% of all children in the relevant age group attended some form of pre primary education in 2018.

3.2 Primary and Lower Secondary Education

In Croatia, schooling is compulsory for eight years. Compulsory elementary school is usually attended between the ages of 6 (or 7) and 15. Pupils with developmental difficulties are given the opportunity to attend this school level up to the age of 21. The 65th Article of the Croatian Constitution (2014) states,

¹ In the Republic of Croatia, everyone shall have access to education under equal conditions and in accordance with his/her aptitudes. Compulsory education shall be free, in accordance with law.

² Compulsory education shall be free, in accordance with law.

Compulsory education is free of charge as long as it is on a public basis. This applies to all children with permanent residence in Croatia regardless of their citizenship. Parents are responsible for purchasing the teaching materials themselves. School psychologists check the children's readiness for school before enrolment (Wessel et al., 2010).

There are three different types of schools within elementary education: the general primary school, a special primary school for children with developmental difficulties and an artistic primary school. More than nine out of ten schools across the country are general primary schools. There is a nationally valid curriculum to ensure uniform educational standards. Compulsory elementary schools are divided into two phases. During the first four years, each class has a permanent teacher. This teacher teaches the children general basic knowledge (class teaching). For the first six months, the pupils do not receive subject-specific grades. Instead, they receive descriptions of their performance and social behaviour. The second part from fifth to eighth grade is the lower secondary level and is dedicated to subject teaching. Especially in small towns or on smaller islands, there are a number of primary schools (first to fourth grade) with mixed classes of all ages since the individual class size often does not exceed five to ten pupils. There is a nationally valid curriculum to ensure uniform educational standards (Wessel et al., 2010).

Croatia's multiethnic structure also affects the school system. Basic principles and rights for the protection of minorities are enshrined in the Croatian Constitution (2014). Article 15 paragraph 4 reads, "Members of all national minorities shall be guaranteed freedom to express their nationality, freedom to use their language and script, and cultural autonomy." Minorities thus have the right to be taught in their own language from primary to secondary school (Wessel, Baljkas, & Androsevic, 2010). Enrolment within ISCED levels 1 and 2 is very high, with the NER reaching 98.4% for primary education and 99.1% for lower secondary education in 2018.

3.3 Upper Secondary Education

The lower secondary education level is followed by voluntary upper secondary school. Pupils usually start upper secondary school at the age of 15. Transfer occurs directly after completion of lower secondary school. Upper secondary education programmes last from one to five years depending on the educational path students choose. Upper secondary education in Croatia enables everyone to acquire the knowledge and ability to work and/or continue education. Education in upper secondary schools especially aims to ensure that students "acquire general and vocational competences in a

changing socio-cultural context to meet the requirements of a market economy, modern information and communication technologies and scientific knowledge and achievements” (Eurydice, 2021).

90.5% of students proceed to upper secondary school. Of these, over 60% attend a vocational school, approximately every third person attends a grammar school and only 3% focus on an artistic education (Croatian Bureau of Statistics, 2018; UNESCO, 2020).

The following comments on the individual types of education within upper secondary education are derived from the Country Report on Croatia by Eurydice (2021). Upper secondary school can be completed in one of three different types: grammar schools, vocational schools and art schools.

Completion of **grammar school** takes four years. In grammar schools, pupils are taught subject-specific knowledge and methodological skills. This creates a foundation to attend higher education institutions (ISCED levels 5 to 8). Grammar schools can be pursued with different specialisations: there are general, modern language, ancient language and scientific-mathematical programmes. Grammar schools are completed with the State Matura (*državna matura*). The Matura in Croatia is completed with a nationally standardised examination. This exemplifies Croatia’s rather unitary statehood in the area of education. Section 3.3.1 shows more precisely that the Croatian education policy also has decentralised elements.

Depending on the type of training, training in **vocational schools** lasts between one and five years; engineering, industry and commerce are among the main branches within this school level. After graduating from a vocational school, it is possible to enter the labour market or, under certain conditions, to continue training at a further or higher education institution. Vocational schools provide the knowledge and skills required in the labour market as well as qualifications that offer opportunities for advancement in further education. In addition to exercises in workshops or laboratories, the acquisition of vocational skills also occurs directly in real working environments to ensure optimal preparation for future work processes.

Secondary **art education** lasts four years. Those who take this path can focus on one artistic subarea. This particularly includes music, dance and the visual arts. Students who complete the art education curriculum at the secondary school level for a minimum of four years may also take the above mentioned State Matura.

Again, most schools are state-run and free of charge while private schools are also available. Many vocational education and training (VET) students go on to higher education. Between 2010/2011 and 2013/2014, approximately 78% of four-year VET students passed the State Matura examinations each year, and 61% enrolled in higher education studies (European Commission, 2019).

3.4 Postsecondary and Higher Education

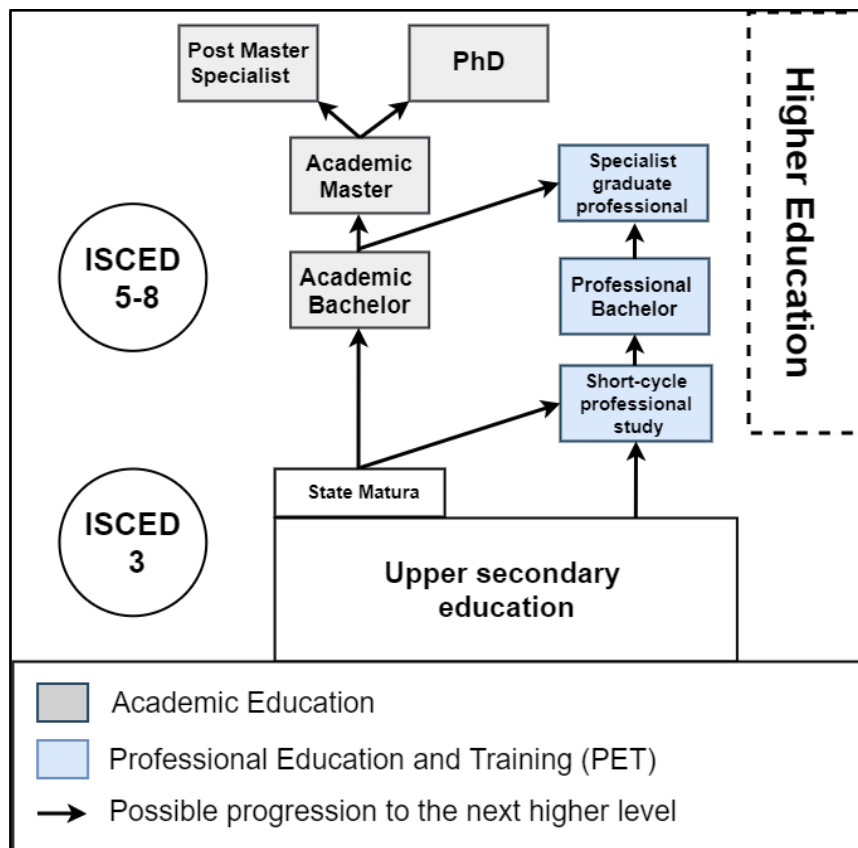
VET specialist programmes exist at the postsecondary non university level (ISCED 453; EQF 5). Although such a programme is provided for in the Croatian Qualifications Framework Act of 2013, concrete implementation has not yet occurred. Even though such a programme has not yet found application in practice, it has the following characteristics:

- strongly labour market oriented
- as yet undefined mechanisms for transition to higher education
- Completion of the programme would result in a VET postsecondary development and training certificate (*strukovno specijalističko usavršavanje i osposobljavanje*)
- The work-based learning ratio (WBL) is at least 50%, which means that the programme is more oriented towards in-company practice than towards practical training at school

(Cedefop, 2019; Croatian Parliament, 2013a).

After the successful completion of the State Matura or the obtainment of certain VET diplomas, there is the possibility to pursue a tertiary education pathway through ISCED levels 5 to 8. Figure 5 is based on the scheme already shown in Figure 4 above; it focuses on the system of higher education in Croatia. The academic education programmes are shown in grey on the left-hand side of the graph. The blue-coloured professional education and training (PET) programmes are located on the right-hand side. Such PET programmes are similar to the *Fachhochschulen* and *Höhere Fachschulen* in Switzerland. Further detailed facts on the Croatian PET system are listed at various points in Chapter 3.

Figure 5: ISCED 2011 Mapping of Croatia’s Higher Education System



Source: own figure based on Cedefop (2020) and UNESCO-UNEVOC (2021).

In 2013, Croatia became the 28th member state of the EU. However, the Europeanisation of higher education in Croatia began approximately 10 years earlier with the ratification of the Bologna Declaration in May 2001. Since 2003, Croatia has been pursuing a comprehensive higher education reform to align the national system with the Bologna standards. In 2005, the first phase of the Bologna reform was completed by adapting the study programmes to the bicyclical bachelor’s and master’s degrees. Only a few subjects, including medicine and law, continued with a one-cycle system. In addition, the European Credit Transfer System (ECTS) and the Diploma Supplement were introduced (DAAD, 2021; Eurydice, 2021).

Croatia is characterised by a large number of different higher education institutions. The almost 160,000 students in Croatia were enrolled in 119 higher education institutions in the country in the 2017/2018 winter semester. These include eight state universities in Dubrovnik, Osijek, Rijeka, Split, Koprivnicar, Zadar, Zagreb and Pula. The most important state universities of applied sciences are located in Zagreb, Karlovac, Knin, Požega, Gospić, Rijeka, Slavonski Brod and Šibenik. There are also polytechnics in Zagreb, Međimurje and Čakovec that offer health studies (DAAD, 2021). The universities of academic and professional education offer courses in the arts, humanities, medicine, engineering, natural

sciences, law, agriculture and forestry, economics and social sciences as well as theology. The duration of studies varies. In order to enrol at Croatian universities, students need a certain number of points, which they must achieve in the State Matura (Wessel et al., 2010).

The 2014 Croatian education strategy reveals that a high priority is given to higher education. In particular, the strategy aims at the internationalisation of higher education. The MoSE focuses on postgraduate students. Doctoral students in particular are to be encouraged to study or conduct research at a foreign university through special scholarship programmes. Foreign postdocs can apply for a research stay in Croatia. The expansion of joint degree programmes with universities in EU and non-EU countries is a further priority. According to the MoSE, more than three quarters of Croatian higher education institutions pursue an internationalisation strategy for their institution (Eurydice, 2021; DAAD, 2021). University tuition fees in Croatia are set by the universities and vary depending on the subject and programme (DAAD, 2021).

The organisation of university studies is—independent of the Bologna Process—relatively highly interconnected. There are prescribed timetables and class-like associations. Instead of lecture timetables from which students can choose their own lectures, there are concrete timetables. Due to the steadily growing number of students, restrictions have been introduced. The majority of higher education institutions in Croatia are public. This means that the State has established them by law and that they are financed in the form of government subsidies. Public institutions of higher education may also secure additional funding through tuition from part-time students or through study programmes that are not government funded, different projects and other sources of income. Private institutions of higher education are established by their founders' decision and funded from their own sources (Eurydice, 2021).

3.5 Continuing Education (Adult Education)

The following comments refer to the ASOO National Report (2008) as well as the overview of the Croatian Education System from Eurydice (2021). Adult education is part of the so-called lifelong learning. There are three types of adult education: formal, non formal and self-directed.

Formal education is any activity conducted on the basis of programmes approved by the MoSE for the acquisition of vocational knowledge and skills. It includes adult primary education, adult secondary education and adult tertiary education. According to the Adult Education Act, formal adult education can be provided by open universities, primary schools, secondary schools and postsecondary institutions. To do so, these institutions must meet the requirements outlined in the Act. Formal adult education leads to the acquisition of a formal certificate.

Non Formal education refers to organised learning processes aimed at educating and training adults for work and labour market needs, participation in social activities and personal development. This education is conducted in adult education institutions, business enterprises, nongovernmental organisations, trade unions, political parties, sports clubs, various centres, et cetera. It covers a wide spectrum including democracy and peace education, health, environmental protection, learning foreign languages or management and leadership skills. It is conducted autonomously from the formal education system and does not lead to the acquisition of a formal qualification.

Self-directed learning means that the learner has control over the learning progress and takes responsibility for the outcomes.

The most important objectives of adult education are

- 1) Exercise of the right to free development of the personality

2) Training for employability: achieving qualifications for the first job, retraining as well as acquiring and deepening professional knowledge, skills and competences

3) Training for active citizenship

Adult education in Croatia is open to all persons ages 15 and older who are not matriculated in full-time education. Participants largely fund adult education themselves, while employers, local authorities and the state sometimes also contribute. State funding is based on requests for financial grants or public contracts. In Croatia, participation in adult education is low. According to Eurostat data from February 2021, only 3.5% of adults participate in one of the adult education and training programmes (Eurydice, 2021).

3.6 Teacher Education

Preschool, primary school and secondary school teachers in Croatia are educated according to the educational level they will teach at. Teachers in Croatia are highly qualified in their profession (trained at the tertiary level), and initial education requires pedagogical education, which comprises 60 ECTS credits. Every teacher is ensured mentored introduction to the profession for one year (Eurydice, 2021).

Teachers have the right and obligation to continuously develop professionally, which is ensured by the state and implemented by education agencies and other authorised bodies. Teachers have the possibility of professional progression through three levels, and professional progression is directly linked to continuing professional development. After they graduate, all teachers have to undergo a one-year traineeship under supervision. After they pass the licensing examination, they are entitled to work as teachers (Eurydice, 2021).

The teaching profession is a predominantly female profession. In 2017, there were 84,370 teachers working at different levels of the education system. Early childhood education and care and primary school teachers are almost exclusively female (99% and 93%, respectively). Women are also in the majority in upper secondary schools (67%), while in higher education there is almost gender parity. Many students apply for initial teacher training, so it is possible to be selective (European Commission, 2019).

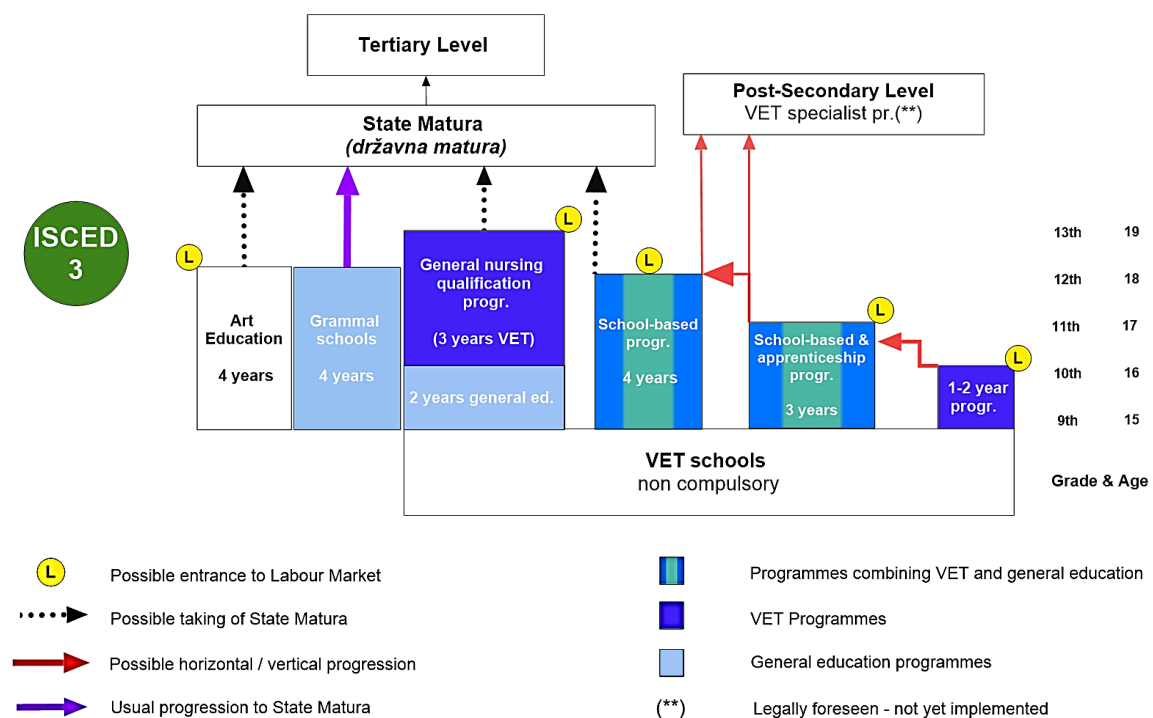
Teachers' wages are below the average for university graduates. Staff salaries account for 73.2% of government spending on education (the EU average is 62.0%). However, in 2018, the average net salary of teachers was €895 in primary schools and €975 in secondary schools. This is significantly below the average net salary for university graduates. A salary increase of 5% in two stages is planned for 2019. Certain categories of teachers (e.g., those working in three or more schools or in special education) will receive slightly higher salaries (European Commission, 2019).

4. The System of Vocational and Professional Education and Training

This chapter describes the VET system at the upper secondary level and the PET at the tertiary level in more detail. Thereby, the term VPET refers to both the VET and PET systems. The information on which this chapter is based comes mainly from the studies of the Cedefop from 2019 and 2020. Furthermore, the relevant Croatian legislative acts in the field of education are cited.

4.1 Vocational Education and Training (Upper Secondary Education Level)

Figure 6: ISCED 2011 Mapping of Croatia's Upper Secondary Education System



Source: own figure based on Cedefop (2020) and UNESCO (2011).

Figure 6 illustrates Croatia's upper secondary education system. The elements found in the diagram are explained extensively below.

After successfully completing lower secondary school, students can enter vocational schools at the upper secondary education level (i.e., VET schools). Within the EU-28, Croatia had one of the highest enrolment rates in the 2019/2020 school year. Almost 70% of learners (96,389 in absolute numbers) in

upper secondary education participated in a VET programme. This is more than 20% higher than the overall average of EU countries measured during the corresponding year. This high number reflects the attractiveness of the Croatian initial vocational education and training (IVET) system. The transversal skills gained through various programmes enable direct progression to tertiary education for almost half of the graduates (Cedefop, 2020).

Depending on the program, IVET programmes last from one to five years. Basic requirements include a certificate of completion of primary education and adequate physical and mental health as required by the occupational standards. No entry examinations are foreseen for any of the programmes (Cedefop, 2019). Within the vocational training programs, a distinction must be made among three main types of IVET programmes (ISCED 351, 353 and 354). At first glance, these types primarily differ in terms of their duration. Nevertheless, there are other differences, which are discussed below.

Apprenticeship programmes are offered in nine sectors: agriculture, food and veterinary medicine; forestry and wood technology; textiles and leather; mechanical engineering, shipbuilding and metallurgy; electrical engineering and computing; construction and geodesy; economy and trade; tourism and hospitality; and personal and other services. The most popular qualifications in 2018/2019 were hairdresser, car mechanic, car mechatronic, cook and carpenter (Cedefop, 2019; Croatian Bureau of Statistics, 2018).

The content of the training varies depending on the type of programme. As a rule, the general education part covers mathematical, linguistic and digital literacy. Depending on the degree programme, parts of the following seven interdisciplinary subjects are included: citizenship education, entrepreneurship, sustainable development, personal and social development, learning how to learn, use of information and communication technology as well as health. Learning outcomes are grouped into compulsory and optional modules of a specific scope. At least 70% of the credits are mandatory. In addition, students have some freedom of choice for a maximum of 30% of the credits of the total scope of the qualification. This allows schools to better respond to the local economy and align the curriculum accordingly (Eurydice, 2020).

Swiss VET training is often considered of high quality. The reason for this is a balanced combination of school-based and job-specific components. In the case of Croatia, such a combination exists but varies depending on the type of programme offered. In purely tabular terms, a scalar rating for Croatia cannot be conclusively determined (see the WBL column in Table 6).

There are two types of diplomas that can be obtained through IVET training. Vocational training at European Qualifications Framework (EQF) level 2 leads to a training certificate (*uvjerenje o osposobljavanju*). For all other programmes, a certificate of completion (*svjedodžba o završnome radu*) is obtained (Cedefop, 2019). In the following, these three main types are further specified. The different vocational qualifications that can be obtained as well as the possibility of vertical and horizontal mobility are of special interest. In addition, statistics from the 2019/2020 school year are used to document the popularity of the various programme types within the IVET system. The most important facts and data are summarised in Table 6 at the end of this chapter.

The first type of vocational education has a duration of one to two years. Within this type, the classifications EQF 2 and 3 can be distinguished.¹² Completion of this stage is generally linked to entry into the labour market. Programmes at EQF level 2 prepare students for occupations such as welder or administrator. Those who complete training at the EQF 3 level become, for example, trained forklift operators, trained for bartender jobs or trained for less complex jobs in the field of butchery (*osposobljen za jednostavne poslove u zanimanju mesar*; (Cedefop, 2019). EQF level 3 is a level of education that has rather lower prestige and mostly targets young people at risk of leaving education and training early.

¹² The EQF is an initiative of the EU to make vocational qualifications and competences more comparable across Europe.

A very small percentage of students (0.2%) choose the very shortest programme type. The numbers of providers and programmes are also low (Cedefop, 2020).

The second type of education lasts three years and is classified as ISCED 353 (EQF 4). This is a school-based and apprenticeship combined programme which is designed for students to enter the labour market after completion of training. Examples of qualifications include chef, hairdresser, carpenter and photographer. Those who complete three-year industrial programmes may, for instance, become CNC operators. Programmes for assisting professions are also especially suitable for apprentices with moderate and severe disabilities. 28.8% of all IVET students were enrolled in this second type of vocational education. What is not visible by examining Table 6 is the diachronic development in terms of enrolled students within ISCED 353. During the last two decades, enrollment in these programmes has steadily declined. The share of upper secondary education graduates dropped from 40% to 22%. The table shows that the participation rate started to increase again and is getting closer to the 30% mark. Some three-year programmes are school based, and others are offered as apprenticeships. Approximately 10% of all apprentices are in apprenticeships, and approximately 90% of all apprentices are in school-based apprenticeships. Apprenticeships are craft based (Cedefop, 2019; 2020).

The third type of vocational education includes school-based programmes of four to five years. Four-year programmes lead to qualifications such as beautician, ICT technician or commercialist. Four-year VET programmes combine general and vocational education in similar shares on average. Therefore, they provide good opportunities for progression to tertiary education. For this achievement, learners have to successfully pass the Matura examinations. Matura examinations are entrance examinations. The highest enrolment numbers across all IVET programme types can be found in the four-year programmes (ISCED 354). In the 2019/ 2020 school year, 64,013 students were enrolled in 131 programmes. In total, there are 287 schools in this sector. Compared to the 2018/2019 school year, there has been a slight decrease in this area from 67.1% to 66.4%. This decrease went in favour of three-year vocational training (Cedefop, 2020).

As of 2014, graduates of ISCED 353 programmes can enter an optional one- to two-year bridging programme. During the bridging programme, learners have to achieve compensatory performances in both general education and vocational subjects. This enables students to obtain a diploma within a four-year programme to then enter the tertiary segment of education with a passed State Matura. The choice of such an educational path is linked to a total schooling period of up to 14 years. Only a very small share of IVET learners choose this option (Cedefop, 2020).

The five-year programme is reserved for the general nursing qualification and offers the opportunity for progression to tertiary education. Its structure is different from other VET programmes in Croatia: it comprises two years of general education followed by three years of VET. The programme was created in 2010/2011 to comply with the European regulation on training requirements for nurses responsible for general care. 5.5% were enrolled in a five-year general nursing programme in the corresponding school year. There is only one such programme in Croatia (Cedefop, 2020).

Most of the described VET schools are public and free of charge. The share of private VET schools is 4% (Cedefop, 2020).

Years for Completion (ISCED, EQF)	VET Schools (Programmes)	VET-Share	WBL	Examples of Qualifications	WBL Training in...
Five-year, care nurse (354, 4)	24 (1)	5.2%	60%	general care nurse	school facilities, laboratories, clinical training
Four-year (354, 4)	287 (131)	66.4%	<10%	beautician, commercialist, ICT technician	school workshops and laboratories, professional practice in the workplace
Three-year (353, 4)	214 (139)	28.0%	30–60%	chef, hairdresser, CNC operator	licenced crafts, legal entities and school workshops, laboratories
One- to two-year (351, 2 and 3)	8 (8)	0.2%	<50%	welder, administrator, bartender	Practical training at school and in-company practice
Total	533 (279)	100.0%			

Table 6: Key Data Regarding the Different Initial Vocational Education and Training Programme Types (2019/2020)

Source: own table based on Cedefop (2019; 2020).

4.1.1 Excursus: JMO and the Dual Education Model

As shown above, the majority of VET programmes last three to four years. These programmes lead to formal upper secondary VET qualifications. Vocational apprenticeships can be completed either in the unified model of education (*Jedinstveni model obrazovanja*, JMO) or in an experimental dual education programme.

JMO programmes are divided into two components. They include general education and vocational training. JMO programmes are offered by licensed business entities such as trade associations. Learners are supported by a trained mentor (Cedefop, 2019). JMO programmes are structurally similar to apprenticeships in Switzerland, whereas the programmes described above are characterised by internships.

The MoSE initiated the experimental phase of the dual programme in the 2018/2019 school year. In this starting year, the completion of such a programme was possible for four professions; in the following year, two professions were added. Within the three-year programmes, salesman, glazier, chimney sweeper and painter-decorator can be completed as dual programmes. Within the four-year programmes, the professions are beautician and hairdresser. In the 2019/2020 school year, 469 learners participated across 19 VET schools. The programme is noteworthy because of its approach of international cooperation. Partner institutions from Austria, Germany and Switzerland are involved. In the first year, the training occurs only in one VET school. In the following two to three years, the training is mainly conducted at the companies. The learners have a contract of employment and receive remuneration on a monthly basis (Cedefop, 2020).

4.2 Professional Education and Training (Postsecondary Level)

After successful completion of one of the explained IVET programmes, two paths are possible according to the scheme outlined. However, only the second way already exists in reality.

1) VET specialist programmes at the postsecondary non university level (ISCED 453; EQF 5). Although such a programme is provided for in the Croatian Qualifications Framework Act of 2013, a concrete implementation has not yet occurred. Even though such a programme has not yet found application in practice, it has the following characteristics:

- strongly labour market oriented
- as yet undefined mechanisms for transition to higher education
- Completion of the programme would result in a VET postsecondary development and training certificate (*strukovno specijalističko usavršavanje i osposobljavanje*)
- The WBL is at least 50%, which means that the programme is more oriented towards in-company practice than towards practical training at school

(Cedefop, 2019; Croatian Parliament, 2013a).

2) Three different types of professional bachelor's degrees at the tertiary level of education:

The first type is a short-cycle professional undergraduate programme (ISCED 554) that usually lasts two to two and a half years and comprises 120 to 150 ECTS credits. The degree leads to an EQF level 5. The entry requirements include a qualification in a programme of upper secondary school which corresponds to at least EQF level 4. The acquired diploma has the designation "professional associate" (*stručni pristupnik*). In the specific case, for example, it is a qualification obtained as a "professional associate in chemical engineering" (*stručni pristupnik kemijskog inženjerstva*). The volume of practical training is defined by individual curricula. Providers of short-cycle programmes are higher education institutions. In the 2017/2018 school year, 51 students were enrolled in such a programme. This represents only 0.11% of all students in higher education professional programmes (Cedefop, 2019).

The second type is called professional undergraduate studies, lasts four to four and a half years (ISCED 655) and leads to EQF level 6, which is linked to a professional bachelor's degree. Such programmes comprise 180 to 240 ECTS credits. For example, a professional bachelor's degree in economy can be obtained. The entry requirements for this programme are stricter than for the PET type just described. Completed secondary education and successful completion of the State Matura examination are required. The higher education institutions are free to impose additional requirements such as school grades or work experience. This programme is provided by colleges (*visoke škole*), polytechnics (*veleučilišta*) and universities (*sveučilišta*). In 2017/2018, 40,117 students were enrolled in professional undergraduate programmes, representing 84.9% of students in higher education professional programmes (Cedefop, 2019).

Furthermore, so-called specialist graduate professional studies are available. These last one to two years and lead to a professional specialist diploma at EQF level 7. Entry requirements are completed undergraduate professional studies or completed undergraduate university studies. Such programmes comprise 60 to 120 ECTS credits and lead to qualifications such as professional specialist engineer. In 2017/2018, 7,062 students were enrolled in specialist graduate professional programmes, representing 14.95% of students in higher education professional programmes (Cedefop, 2019).

All programmes have in common that they can be pursued full or part time. Compared to the VET programmes already discussed, it is difficult to define the WBL rate within the Croatian PET programmes.

4.3 Regulatory and Institutional Framework of the Vocational and Professional Education and Training System

4.3.1 Central Elements of Vocational and Professional Education and Training Legislation

The Croatian Constitution embodies the fundamental principles on which the organisation of the VPET system is based. The first article of the Constitution establishes the unitary statehood of Croatia, according to which the various competencies basically belong to the state. This also includes the direction and development of public services such as education by the government (Article 110). However, Article 129 of the Constitution grants local and regional self-government units a certain margin of autonomy with regards to the organisation of the school system (Constitutional Court of Croatia, 2014).

The Vocational Education and Training Act (*zakon o strukovnom obrazovanju*) of 2009 is the essential legal source for the IVET system, whereas the Higher Education Act (*zakon o znanstvenoj djelatnosti i visokom obrazovanju*) of 2007 regulates the PET system. The Croatian Qualifications Framework Act CROQF of 2013 addresses the whole VPET system and is related to Croatia's EU accession of 2013. These legal texts focus in particular on

- Objectives of the respective levels of education
- Financing of the respective levels of education
- Public authority responsibilities
- Stakeholders

4.3.2 Key Actors

a) Vocational Education and Training

Administrative and management functions in the field of education are distributed on three different levels: the state level, the regional level and the school level (UNESCO, 2011). To clarify this hybrid of centralisation and decentralisation in the Croatian school system, the competencies of the involved authorities as well as their interactions are outlined in more detail.

Decentralisation of education policy was implemented through the restructuring of the form of government at the turn of the last millennium. With this, the MoSE abandoned certain tasks: for example, local self-governing bodies were integrated into the educational management. Notably, the local and regional self-government units participate in the design of VET curricula. Furthermore, funding was decentralised so that cities and counties could become co founders of primary and secondary schools. Similarly, the rights of national minorities to schooling were extended, and schools were given more autonomy than before (UNESCO, 2011; Croatian Parliament, 2018).

Government

Regional self-government units are economically and demographically too small to make key decisions affecting the educational sector. For this reason, the government makes such decisions. Various ministries of the Croatian government participate in VET policy. That said, the MoSE is the main responsible body. The ministry's competencies primarily concern financial matters, the design of curricula and the development and improvement of the education system. The VET Act attributes a

supervisory role over the VET system to the Ministry. Furthermore, the MoSE oversees and coordinates various executive education policy agencies (UNESCO, 2011; Cedefop, 2019; Croatian Parliament, 2018).

Representation and Advisory Bodies

The study of the above-mentioned VET Act shows that the Agency for Vocational and Adult Education (ASOO) has a key role in the Croatian educational process. The competencies of this agency are regulated in Article 13 of the VET Act: this public agency plans, develops, organises, monitors and evaluates the school and out-of-school system in the field of VET (Croatian Parliament, 2018). The cooperation with the MoSE materialises in the fact that the ASOO makes numerous preparations in the educational process and provides the basis for decisions. Concretely, these concern, for example,

- Preparation of information on VET for the state administrative entities, the government and the parliament
- Development of VET programmes and curricula
- Monitoring of the work of VET and adult education institutions
- Organisation of national skills competitions
- Cooperation with the social partners and other stakeholders in the VET system
- Completion of the foreign VET qualification recognition process
- Preparation and implementation of programmes and projects financed or co financed by EU funds and other forms of international assistance

(Cedefop, 2019; Croatian Parliament, 2018).

A current example illustrates the leading role of MoSE and ASOO within VET: due to the COVID-19 pandemic that started in March 2020, theoretical and practical education were only possible online. Therefore, the MoSE created online content for all general subjects taught in upper secondary schools and prescribed the handling of the absence system in online classes. In addition, the ASOO responded to the new circumstances by creating a portal for online classes, which made it possible to rudimentarily teach practice-oriented subjects despite schools being closed (ASOO, 2021; MoSE, 2020).

In addition to the ASOO, the VET Council was also established by the VET Act. This council proposes education sectors, coordinates the work of all VET stakeholders, launches initiatives to adopt new or modify existing curricula and proposes measures and activities together with strategies for the development of VET (Croatian Parliament, 2018). Furthermore, the VET Council provides its assessment for the establishment of the network of regional centres of competence (UNESCO-UNEVOC, 2021). The council is represented by 21 people and is open to various interest groups. These include representatives from each of the following Croatian organisations:

- Employers' Association
- Chamber of Commerce
- Chamber of Crafts
- Trade Union Representative
- Ministry of Economy
- Nationwide Association for Impaired People
- VET Agency (ASOO)
- State Employment Service
- Vocational training institutions (schools)
- Universities
- Postsecondary PET schools
- Trade unions

The MoSE regulates the curricula and syllabi prepared by the Agency for Vocational Education and Training. Although a centralised state body makes these prescriptions, they are only frameworks; the implementation of curricula is completely decentralised. Thus, the self-governing units and VET schools

have a certain amount of room to manoeuvre, which serves their individual needs (UNESCO, 2011). The final decisions on educational matters are made by the Minister of Education with a proposal from the VET Council and an opinion from the ASOO (Croatian Parliament, 2018).

The stakeholders involved in the VET Council are also listed in Article 18 of the Croatian VET Act:

The actors in the field of VET include the ministries responsible for individual sectors, local and regional self-government, trade unions, employers' associations, professional and other associations, chambers, universities, legal entities active in employment services and VET institutions. (Croatian Parliament, 2018)

According to Cedefop (2019; 2020), further stakeholders and their competencies within VET are as follows:

- The Ministry of Economy, Entrepreneurship and Craft determines the conditions for admitting learners to apprenticeships and issues apprenticeship examination certificates.
- The Ministry of Labour and Pension Systems is responsible for employment policy and labour market forecasts.
- The Agency for Education and Teacher Training develops the general education part of the curricula for VET.
- The Croatian Chamber of Trades and Crafts issues licences to training companies and publishes lists of licensed apprenticeship providers. It is also a partner in the pilot programme for dual education, which began in the 2018/2019 school year.
- The Croatian Chamber of Economy is an independent organisation of all legal entities engaged in entrepreneurial ventures. The Chamber is committed to promoting vocational training in Croatia and is a partner in the dual training experiment programme.
- The Croatian Employers' Association is an independent organisation of all legal entities engaged in entrepreneurial activities. Its tasks are to represent the interests of members in the development of the economic system, to evaluate means and conditions of economic growth, to improve the development of entrepreneurship and to develop business relations with foreign partners.
- In addition, there are six confederations of Croatian trade unions. These are key stakeholders in social dialogue in Croatia and represent the interests and positions of Croatian workers.

The interplay of the diverse stakeholders is clearly exemplified by the experimental phase of dual education, which has been running since the 2018/2019 school year. The Croatian Ministry of Education has conducted the launch, direction and supervision of the programme. Furthermore, the Croatian Chamber of Economy and the Croatian Chamber of Trades and Crafts as well as the Croatian Employers' Association are also involved in this programme; they are joined by foreign partner organisations from Germany, Austria and Switzerland (Cedefop, 2020).

The various stakeholders in their interaction have a fundamental function for the Croatian education system. According to Article 18 of the VET Act, stakeholders are encouraged to promote the development of the education system at national, regional and local levels and to cofinance the education system according to their capabilities (Croatian Parliament, 2018).

Education and Training Providers

Ninety-six per cent of IVET providers are public institutions; correspondingly, only 4% of IVET schools are privately owned. The creation and property of the public schools is up to the local governments. These vocational schools have varying structures: either they incorporate different sectors or only a single educational sector or subsector. These sectors are health and medicine, economics, business, administration, forestry, carpentry, agriculture, veterinary medicine, shipping (maritime), transport (traffic), aviation, hospitality, tourism, mechanical engineering, electrical engineering and construction. On average, VET schools have 400 learners and offer 10 educational programmes. This can be a challenge in terms of funding, organisation and staff management. The programmes are perceived as costly, and their provision is not aligned with the needs of the labour market, demographics or local development. This mismatch affects the availability of work-related learning and the quality and learning

outcomes in VET. The MoSE has published guidelines in 2019 to enhance the network of VET providers in order to respond to this issue (Cedefop, 2020; UNESCO-UNEVOC, 2021).

b) Professional Education and Training

Section 3.2 shows that in Croatia, only professional bachelor degrees have been realised at the PET level, but so far, only VET specialist programmes are mentioned in the legislation. Therefore, this section focuses on the governance of professional bachelor programmes. Such PET programmes are usually offered at universities of applied science. The legal framework for this is the Higher Education Act of 2013. The core stakeholders emerging from this act are described in the following:

Government and Representation and Advisory Bodies

2005 is again an important year in retrospect: at that time, the Croatian Agency for Science and Higher Education (ASHE) and the National Council for Higher Education were founded. Both actors provide expertise in the development of higher education and ensure the quality of higher education.

At the beginning of its work, the ASHE was responsible for providing technical and administrative support to the National Council for Higher Education in conducting external evaluation procedures. In accordance with the Quality Assurance Act, since 2009, ASHE has been the only national public institution responsible for conducting independent external evaluations in the field of higher education and science.

According to Art. 6. of the Act on Scientific Activity and Higher Education, the National Council for Science, Higher Education and Technological Development is the highest professional organisation responsible for the development and quality of all scientific activity and the system of science, higher education and technological development in the Republic of Croatia. The Council consists of 15 persons. The PET system is represented by two representatives from universities of applied sciences and two representatives from trade unions. It proposes and promotes the adoption of measures to improve higher education. The implementation of such proposals occurs via the MoSE. The council consists of 15 persons. The PET system is represented by two representatives each from universities of applied sciences and trade unions. The Minister of Education may attend the meetings of the council, but he has no voting rights. Hence, the council has a certain degree of independence (Croatian Parliament, 2013).

4.4 Educational Finance of the Vocational and Professional Education and Training System

4.4.1 Educational Finance of the Vocational Education and Training System

The aforementioned education reforms at the turn of the millennium also included the restructuring of the sources of funding; decentralisation occurred in 2001. For one, the salaries of all employees in the education sector are paid from the state budget. In addition, the state budget finances further training for teachers, the education of minorities and people with disabilities, school materials, IT infrastructure as well as school libraries. Local and regional authorities bear the operating costs of the secondary schools and provide co financing for transportation costs of employees in upper secondary education schools. Capital investments for buildings stem from the state funds as well as the budgets of the local units.

If local or regional governments are unable to secure the minimum funding, the centrally administered equalisation fund makes up for the shortfall. In 2015, expenditure on upper secondary education accounted for approximately one fifth of the country's total education budget (22.4 %; (Cedefop, 2020).

4.4.2 Educational Finance of the Professional Education and Training System

The funding model for public higher education institutions is primarily linked to state budget funding since public higher education institutions are largely budget beneficiaries, while on the other hand, a funding system through programme contracts is increasingly being developed.

The funding of the PET system is regulated in Article 107 of the Croatian Higher Education Act of 2013. Such institutes under public law may only be financed from sources that do not affect their independence and dignity. PET schools in Croatia are funded by

- The Founder's Fund
- The state budget
- Budgets of counties, cities and municipalities
- Income from research projects
- Foundations and donations
- Income from publishing activities
- Revenues generated on the market
- Income from assets and from participations of natural and legal persons

(Croatian Parliament, 2013).

Provided that private schools meet certain conditions, they are also eligible for state funding.

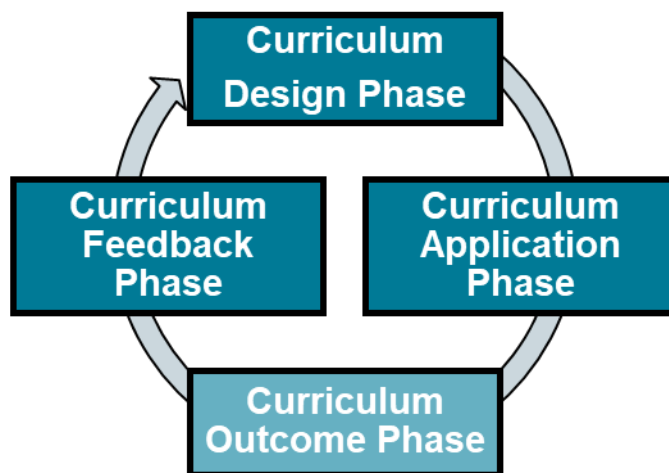
There are no statistics available that consider government expenditure on the PET system in isolation. It can only be stated that expenditure on tertiary education (as a percentage of government expenditure on education) amounted to 22.9% in 2013 (World Bank, 2021).

Education spending is close to the EU average. In 2017, Croatia spent 4.7% of its GDP on education (the EU average is 4.6%). As a proportion of general government expenditure, education spending (10.5%) is also close to the EU average (10.2%). The share of spending on tertiary education is 21.5%, which is above the EU average of 15.0%.

4.5 Curriculum Development

Curriculum is a central element for the functioning of a VPET system because it defines the framework and the (quality) standards for the education system. The development of a curriculum can be decomposed into a three-step process of curriculum design, curriculum application and curriculum feedback phases. This theoretical concept is called the curriculum value chain and is depicted in Figure 7 (for more details, see Renold et al. 2015; Rageth & Renold, 2019).

Figure 7: Curriculum Value Chain



Source: Renold et al. (2015) and Rageth and Renold (2019).

In the curriculum design phase, the relevant actors decide upon VET curriculum content and qualification standards. Therefore, the discussion in Section 3.5.1 focuses on the degree and the amount of stakeholder participation concerning curriculum design in Croatia. The curriculum application phase revolves around the implementation of the curriculum. Because learning environments differ substantially across countries, especially with respect to the prevalence of workplace learning, Section 3.5.2 focuses on those learning environments. Specifically, it addresses where learning occurs 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 addressed in Section 3.5.3. This evaluation process is important because it may render a more refined curriculum design than was possible in the first place.

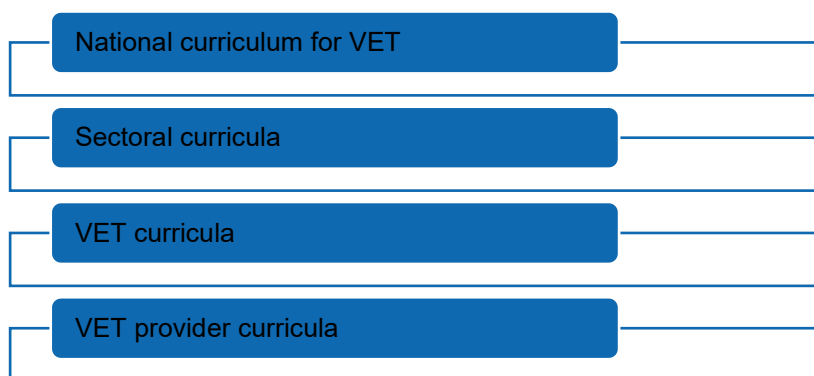
4.5.1 Curriculum Design Phase

The design phase is crucial for the whole curriculum process. 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 content of the curricula.

Historically, the founding of ASOO in 2005 is an important step that created new possibilities in the area of curriculum development to shape VET qualifications. New concepts were also created with the occupational and qualification standards. At present, the VET Agency is particularly busy with a project that is to be introduced for the 2022/2023 school year; the aim is to make a complete transition to a learning-outcomes-oriented VET system (Cedefop, 2020).

Each curriculum addresses two characteristics: first, it is oriented towards the national curriculum for VET and the sectoral curricula. Second, they are oriented towards the occupational and qualification standards. The VET Act distinguishes a different hierarchical structure of different types of curricula. Depending on these types, different actors are involved in curriculum design. The lower in the hierarchy a curriculum type is, the more technical it is. The different types of curricula are outlined in Figure 8.

Figure 8: Hierarchy of Curricula in the Croatian Vocational Education and Training System



Source: own figure based on Cedefop (2020).

The national curriculum for VET is at the top of the hierarchy. This is endorsed by the MoSE and sets a general framework to which the other curricula are subordinated. It regulates general issues such as entry and graduation requirements, the duration of programmes and the possibility of permeability within IVET. One level below this are the sectoral curricula. ASOO is responsible for the methodology of developing this form of curricula. The aim is to establish a framework for all VET curricula for EQF/CROQF levels 2 through 5. The sectoral curricula thus form the orientation framework for the third hierarchical level. The sectoral curricula define all VET qualifications within a particular sector, the duration of education and possibilities and conditions for permeability within the sector. Additionally, the sectoral curricula include recommendations of models of work-based learning. The main objective of sectoral curricula is to ensure the acquisition of a wider range of competences pertinent to all professions within a sector. At the third level are the VET curricula. The MoSE approves these if the evaluation by ASOO was positive. In the case of the JMO model explained above, the Ministry of Economy, Entrepreneurship and Crafts is responsible for endorsing VET curricula. VET curricula contain detailed assessment methods, criteria and procedures. They consist of compulsory and elective modules. They also describe the respective teaching units, the learning environment and the assessment of learning outcomes. According to Article 8 of the VET Act, the main goal of the vocational curriculum is to ensure the acquisition of the competences prescribed in the occupational qualifications. The VET provider curricula are at the fourth and lowest level. They are created by the VET school that runs a given programme. A VET provider curriculum is based on the corresponding higher-level sectoral curricula (2) and VET curricula (3). The purpose of such plans is to establish a syllabus and timetable for teaching, teaching and learning methods as well as an assessment plan.

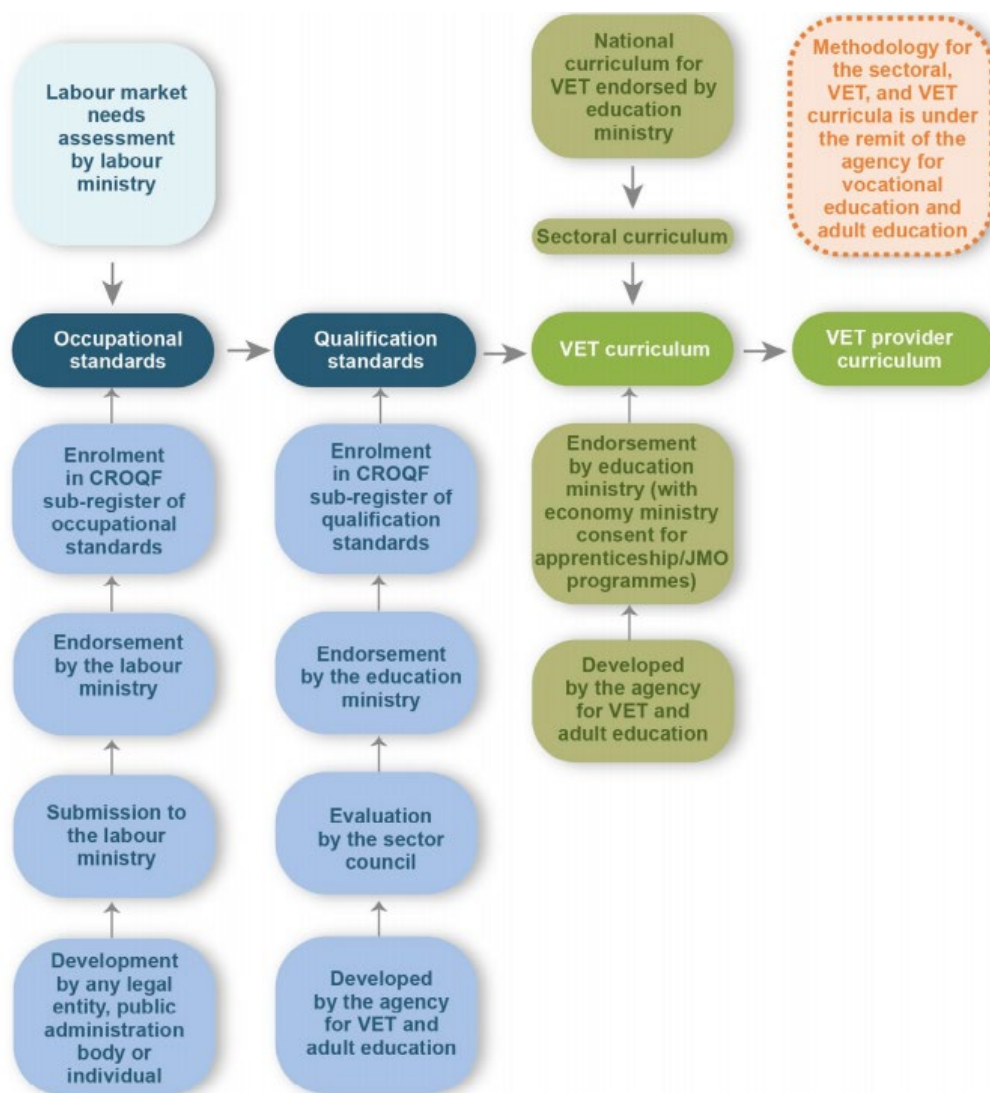
The voice of private stakeholders in the field of curriculum design particularly flows through the members of the VET Council. In accordance with the law, this council launches initiatives to adopt new or amend existing curricula (Cedefop, 2020; Croatian Parliament, 2018).

As previously outlined, curricula are sometimes aligned with the occupational and qualification standards.¹³ The Labour Ministry (MRMS) and 13 sector councils play an important role regarding these standards. In addition to monitoring labour market needs, the MRMS produces an evidence base for the development of occupational standards. It provides methodological guidance for the development of occupational standards and approves the addition of new occupational standards to the register. The sector councils evaluate proposals for occupational standards, qualification standards and units of learning outcomes. They also analyse existent and demanded competences at the sector level and propose modifications to the qualification standards based on revisions in the occupational standards (Cedefop, 2020).

Figure 9 illustrates the new process of VET qualification and curriculum development in Croatia.

¹³ Occupational standards identify the tasks to be performed in an occupation and the broad skills and knowledge required.

Figure 9: New Process of Vocational Education and Training Qualifications and Curricula



Development in Croatia

Source: Cedefop (2020).

4.5.2 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 shown at the beginning of Chapter 3, curricula are implemented differently depending on the programme in terms of time spent in vocational schools and enterprises. VPET curricula consist of theory and practical elements. The corresponding data can be found in Table 6.

4.5.3 Curriculum Feedback Phase

The curriculum feedback phase addresses the questions of whether and how educational outcomes are analysed. Based on this, the curriculum could be reworked and improved. All information in this subchapter is taken from Eurydice (2021). The quality assurance system in Croatia is made up of three different approaches:

- self-evaluation of educational institutions
- external evaluation of educational institutions
- evaluation of student learning outcomes

The focus here is on external evaluations. At the VET level, ASOO is responsible for external evaluations. External evaluation of learning outcomes is a standardised assessment that is planned and prepared outside the schools to ensure homogeneity of all procedures: application, assessment, interpretation and comparability of results.

The external evaluation contains an expert assessment of the relevant areas of schoolwork:

- school management, human and material resources, key processes
- the quality of self-evaluation and development planning
- the quality of teaching and student support as well as the results and outcomes
- student achievement and the achievement of educational goals

Schools are required to use the outcomes of national examinations and other indicators of the success of pedagogical work for analysis and self-evaluation in order to continuously improve the quality of the schools' work.

At the PET level, ASHE is responsible for external evaluations. The policy framework, indicators and goals for quality assurance in higher education are governed and developed by the MoSE. Quality assurance in higher education and science in Croatia is monitored by the Agency for Science and Higher Education. The mission of ASHE is to continuously support quality improvement of science and higher education by applying European and international best practices. Evaluation of teaching and learning in a subject or department and related programmes includes all activities aimed at assessing quality and purpose. Strengths and weaknesses of education and training can be identified by stocktaking, analysis and formulation of proposals to ensure sustainability of quality. Evaluation can be conducted via both internal and external procedures. The main objective of quality improvement is to ensure that internal and external procedures are used to improve student learning. The National Council for Higher Education informs the Minister of Science and Education, the higher education institution and the public about the results of the evaluation of the higher education institution. The National Council for Higher Education monitors the overall course and general results of the evaluation of higher education institutions and within its legal competencies proposes and encourages the adoption of measures for the improvement of higher education (Eurydice, 2021a).

4.6 Supplying Personnel for the Vocational and Professional Education and Training System (Teacher Education)

In the Croatian VET system, a distinction is made between general subject teachers and vocational teachers and trainers. General subjects include mathematics and Croatian language. Teachers of general subjects must have completed a university degree or professional studies. In addition, they must have pedagogical competencies. This standard is set by the MoSE (Cedefop, 2020). In IVET programmes, there are four types of vocational teachers. Depending on the type of teacher, different requirements are necessary. The assignment of teacher type and requirements is briefly listed below:

1) **Teacher for vocational theory subjects:** university education (at least 180 ECTS credits) and additional pedagogical-psychological training (60 ECTS credits).

2) **Teachers for practical training and exercises:** undergraduate university or professional degree (at least 180 ECTS credits), pedagogical competencies (60 ECTS credits) and qualification of a required profile.

3) **Vocational school teachers** must have the educational level of the vocational education curriculum, meaning at least a secondary school certificate with the relevant profile.

4) **Teaching assistants** must have a secondary school diploma, pedagogical competences and at least five years of professional experience unless the curricula of the vocational schools provide otherwise. Teaching assistants support the vocational school teacher.

Continuing professional development and in-service training for VET staff is mainly conducted by ASOO. In addition to state-funded training, in-service training for VET teachers is also provided by professional associations and other nongovernmental organisations, public open universities and the chambers of crafts (Cedefop, 2020).

In 2019, 4,422 teachers taught general education subjects and 15,115 taught vocational subjects in upper secondary vocational education (total: 19,537). Teachers in the VET system constitute 20% of all teachers in the country. Unfortunately, there are no statistics regarding how many people teach in short-cycle tertiary education or other programmes within the PET system (Eurostat, 2021d).

The 2019 regulation on awards to teachers stipulates the evaluation procedure and the award criteria as well as financial bonuses for teachers. The new framework favours teaching innovation, participating in professional development, developing open digital education content, participating in projects and contributing to the education system through engagement in working groups for policy development, research or experimental programmes in education. In December 2019, a significant increase in teachers' salaries was negotiated between the government and teachers' unions (Cedefop, 2020).

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

5.1 Major Reforms

While Croatia currently leads the EU with the lowest percentage of early leavers from education and training, apprenticeship numbers are decreasing, and adult learning is low at only 2.9%. VET curriculum reform is currently underway focused on market needs, learning outcomes, work-based learning, contemporary teaching and support to VET providers (Cedefop, 2020).

Section 1.2 indicated that Croatia's last major education reform failed because of ideological divides. After the 2014 parliamentary elections, the MoSE installed a group of experts to reform the entire Croatian education system. With a "reform from below", the delegated body intended to create new curricula for every level of schooling as well as a new assessment system for student performance. The focus was on moving from rote learning to critical thinking skills. This lack of practical work has been criticised, for example, by various students from the general care nurse programme. Students' creativity and communication skills were also to be promoted. However, this plan was not implemented because of resistance, especially from ultraconservative groups. People from outside the parties managed to bring their attitudes into the political arena and nullify the plans of the expert group. Conservative leaders are aware of how strong the influence of culture and education on society can be. The focus is therefore on maintaining power, which is also manifested through the shaping of the education system. The mass exodus of the best young people is linked to problems of education reform (SRF International, 2017). Since then, minor reforms have occurred in the Croatian VPET system, with the following being the most important:

- The redesign of the VET system has been in the pipeline for a long time with implementation scheduled for 2022/2023. The system is transforming from input to learning outcome orientation, responding to current demand and orienting towards the future.
- The MoSE established four additional regional competence centres in December 2019. An overall amount of HRK 105 million was allocated for the competence centres at the School of Crafts Koprivnica, two centres at the Technical School Karlovac and one at the School of Gastronomy in Opatija (Eurydice, 2021). These centres serve as hubs of VET excellence. Core elements include innovative learning opportunities and excellent teachers and mentors in the workplace supported by state-of-the-art infrastructure and intensified cooperation with the local business community and other stakeholders. The financial support for these centres also derives from the European Structural and Investment Funds (Cedefop, 2020).
- With the objective of stimulating excellence in VET, the first WorldSkills competition in Croatia introduced a renewed model of competitions for VET learners. In 2019, more than 580 contestants in 46 disciplines competed before over 10,000 spectators. The disciplines included hairdressing through to interdisciplinary disciplines such as robotics and mechatronics. The event achieved high awareness and support from stakeholders and has become the leading national event for the promotion of VET (Cedefop, 2020; European Commission, 2019).
- Launched in 2018, the trial programme “Dual Training in VET” has been expanded to encompass 13 VET schools for 2019/2020, providing more opportunities for work-based learning. The program is intended to address inadequacies in practical training and insufficient entrepreneurial skills and reduce the skills mismatch. This is demonstrated by the fact that more than half of the registered unemployed individuals are graduates of vocational training. A European Structural and Investment Funds project called “Modernising the system of continuous professional development for teachers and trainers in VET” supports the training of head teachers of VET schools and has included two VET teacher days with over 1,100 participants (European Commission, 2019).
- The VET Act does not require tracking of VET graduates; schools only collect data on an optional basis. The ASOO plans to introduce a tracking model as part of a broader project. A separate interinstitutional project is targeting the monitoring of people who are not in employment, education or training (NEET; (European Commission, 2019).

5.2 Major Challenges

The literature identifies the following major challenges that the Croatian VPET system is facing:

- VET programmes are often less prestigious than general education programmes and sometimes have a negative image among students and families. VET students’ performance in international examinations is worse than that of general education students. The plan to reduce the weight and number of general education subjects in VET under the new reform is a cause for concern (World Bank, 2019).
- Committed reform measures in VET are needed to update curricula to better respond to the needs of the market. Both the share of work-based learning and its quality must be increased. Youth unemployment has gradually declined (23.8% in 2018 for 15 to 24-year-olds), as has the proportion of young people (aged 15–24) who are NEET to 13.6% in 2018. Youth guarantee programmes are designed to help young people find employment, an apprenticeship or a traineeship within four months of leaving school or becoming unemployed or to give them the chance to continue their education or training (Cedefop, 2019).
- It remains a challenge to engage employers to better understand labour market needs and trends and to provide students with appropriate WBL opportunities. In the last five years, it has become more difficult to secure WBL placements for students. Many schools resort to practical training in their facilities; there is a shortage of training directly with employers. More than 60% of Croatian VET students do not gain work experience during their IVET studies (World Bank, 2019).

- Croatian participation in lifelong learning activities is among the lowest in the EU. Those with the lowest levels of education and the long-term unemployed participate the least. This low participation in learning throughout life and especially in adulthood contributes to outdated skills. Outdated skills are associated with low labour force participation and low productivity (World Bank, 2019).
- There is wide variation in the quality of adult education provision. There is also little employer involvement in the design of qualifications. Croatia has an unclear certification framework and lacks quality assurance mechanisms to monitor and improve adult education provision. Given Croatia's rapidly declining population, workers of all ages need to become more productive over their lifetimes for the country to maintain its standard of living, and in the absence of quality adult retraining opportunities, this task is becoming increasingly difficult (World Bank, 2019).
- Gender equality remains a challenge because gender-stereotyped educational choices and gender stereotypes in textbooks are widespread (Farnell, 2013).

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Appendix I: Overview of the VET system

VET pathway enrolment share out of all upper secondary (%)	69.7 in the school year 2019/2020
Program enrolment share out of all VET pathway (%)	The rates vary across programmes. At 0.2 percent, a strong minority follows a one-to-two-year programme. At 66.4 percent, the highest proportion enrolls in a four-year programme. Complete data material can be found in Table 6.
Number of curricula/qualifications	279 in the school year 2019/2020
Ø Share of time spent in workplace (vs. classroom)	The so-called work-based learning also varies a lot depending on the programme: The five-year care nurse programme has a WBL share of 60 percent, while this number is below 10 percent in four-year programmes such as "commercialist". Complete data material can be found in Table 6.
Work contract (Yes/No)	Yes , within: Apprenticeship-programmes, JMO-Programmes, New Model of Dual Education. Placement and apprenticeship contract with a licenced apprenticeship provider has to be ensured in the first semester. Contract prescribes the employer obligation to pay monthly compensation to the learner, bonus might be paid as well. The legal basis for this was created with the Regulation on Minimum Conditions for Apprenticeship Contracts. The Ministry of Entrepreneurship and Craft is responsible for this.
Ø Share of vocation-specific content (vs. general) in classroom education <ul style="list-style-type: none"> • Zahlen aus den PET-System Programmen einfügen? <ul style="list-style-type: none"> ○ Siehe Cedefop 2019! 	Ratios differ depending on programmes: One to two years: 60-80% Three years: numbers differ from JMO to industrial programmes. Within industrial programmes numbers differ according to the attended school year. <ul style="list-style-type: none"> • JMO: ~ 80% • Industrial: 60-80% during first and second year, 60-75% during third year. Four years: 30-60% during first year, 60-80% during second year, 60-70% during third and fourth year. Five years: 100% general education during first and second year, 100% VET during third, fourth and fifth year.
Classroom/workplace sequencing (Alternating, Sequentially)	Depending on the programme
Frequency of workplace learning (Annually, Semi-annually, quarterly, monthly, weekly)	Depending on the programme, example here is shown through the relatively New Dual Model of Education : 1 st year: work-based learning mostly in VET schools; during the following years most work-based learning in business entities. By following this approach, the Unified Model of Education (JMO) programme has similarities to the so-called <i>Fachmittelschulen</i> established in the Swiss education system.
Program duration (Years)	1-5 years per programme. More details can be found in Table 6.
Involved Actors	VET: Ministry of Science and Education (MoSE), Agency for Vocational and Adult Education (ASOO), VET Council and many others (see Chapter 3.3.2) PET: MoSE, Agency for Science and Higher Education (ASHE), National Council for Higher Education.

Reform Years	<p>2000: Establishment of Parliamentary system & Legislative changes within the education system.</p> <p>2009: VET Act</p> <p>2013: EU accession</p> <p>2013: Adoption of law on National Qualifications Framework (CROQF)</p> <p>2014: Strategy of education, science and technology</p> <p>2016: A major education reform fails again; leads to nationwide demonstrations with international media coverage.</p> <p>2016-2020: VET system development programme</p> <p>2022/2023: Redesign of the VET System</p>
Reforms Summary	<ul style="list-style-type: none"> • Constitutional changes (2000) led to more decentralized education policies • VET Act (2009 and later amendments) strengthened cooperation between ministries, social partners, chamber of trades and crafts as well as other various stakeholders. • EU accession as 28th EU-Member (2013) led to the creation of common goals as possible between the supranational organisation and Croatia. These goals aim to attain the greatest possible degree of opportunity in education, training and the labour market. • NQF Act (2013) aims to encourage human potential development and to stimulate competitiveness and achieve Croatia's strategic goals • The main vision of the strategy (from 2014) is a Croatian society in which quality education has an impact on the life of every individual, on relationships in society and on the development of the economy. It advocates for a democratic, tolerant and innovative society in which the potential of each individual can be realised. VET System Development Programme (2016) aimed to more accurately implement the objectives of the 2014 strategy and to integrate EU policies and tools for VET development. Such incorporated European policies are in particular the European Qualifications Framework (EQF) and the European Quality Assurance for VET (EQAVET). These instruments are intended to create increased transparency and better performance monitoring. A key role in the implementation is played by highly qualified teachers who are constantly supported in their professional development. • Redesign of the VET System (2022/2023) as a whole should change from an input-oriented system to an outcome-oriented system that responds to current demand and faces the future.

Sources: own table based on Eurydice (2021), Cedefop (2020; 2019; 2016), Croatian Parliament (2013a), UNESCO (2011), Croatian Ministry of Entrepreneurship and Craft (2014)

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