

CROATIA



1. Key indicators

			Croatia		EU average	
			2014	2017	2014	2017
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			2.8% ^u	3.1%	11.2%	10.6%
Tertiary educational attainment (age 30-34)			32.1%	28.7%	37.9%	39.9%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			72.4% ¹³	75.1% ¹⁶	94.2% ¹³	95.3% ¹⁶
Proportion of 15 year-olds underachieving in:	Reading		18.7% ¹²	19.9% ¹⁵	17.8% ¹²	19.7% ¹⁵
	Maths		29.9% ¹²	32.0% ¹⁵	22.1% ¹²	22.2% ¹⁵
	Science		17.3% ¹²	24.6% ¹⁵	16.6% ¹²	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)		ISCED 3-8 (total)	62.0%	65.9%	76.0%	80.2%
Adult participation in learning (age 25-64)	ISCED 0-8 (total)		2.8%	2.3%	10.8%	10.9%
Learning mobility	Degree mobile graduates (ISCED 5-8)		:	2.4% ¹⁶	:	3.1% ¹⁶
	Credit mobile graduates (ISCED 5-8)		:	4.4% ¹⁶	:	7.6% ¹⁶
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		4.8%	4.8% ¹⁶	4.9%	4.7% ¹⁶
	Expenditure on public and private institutions per student in € PPS	ISCED 1-2	€3 496	: ¹⁵	€6 494 ^d	: ¹⁵
		ISCED 3-4	€3 342	: ¹⁵	€7 741 ^d	: ¹⁵
		ISCED 5-8	€7 999	: ¹⁵	€11 187 ^d	: ¹⁵
Early leavers from education and training (age 18-24)	Native-born		2.8% ^u	3.1% ^u	10.4%	9.6%
	Foreign-born		:	:	20.2%	19.4%
Tertiary educational attainment (age 30-34)	Native-born		33.3%	29.5%	38.6%	40.6%
	Foreign-born		19.6% ^u	21.5% ^u	34.3%	36.3%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		47.3%	59.1%	70.7%	74.1%
	ISCED 5-8		72.2%	71.6%	80.5%	84.9%

Sources: Eurostat (see section 10 for more details); OECD (PISA).

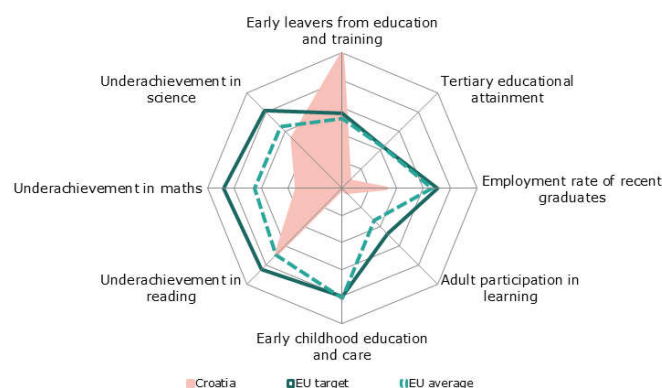
Notes: data refer to weighted EU averages, covering different numbers of Member States depending on the source;

d = definition differs, u = unreliable, 12 = 2012, 13 = 2013, 15 = 2015, 16 = 2016.

On credit graduate mobility, the EU average is calculated by DG EAC on the available countries; on degree graduate mobility, the EU average is calculated by JRC over Eurostat and OECD data.

Further information can be found in the relevant section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to strongest (outer ring) and weakest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2017, UOE 2016) and OECD (PISA 2015). Note: all scores are set between a maximum (the strongest performers represented by the outer ring) and a minimum (the weakest performers represented by the centre of the figure).

2. Highlights

- Ambitious reforms in education and training have been launched, after a period when progress was stalled by political disagreement.
- Curricular reform has been introduced as a pilot project in 2018/2019 to address concerns about the quality and relevance of primary and secondary education.
- Despite the low level of time devoted to civic education and teacher preparation, Croatia's pupils show a solid level of civic competences.
- New legislation on vocational education and training is paving the way for reforms in a sector whose relevance to the labour market and whose quality has been challenged.
- Participation in early childhood education and care remains a significant challenge, but a comprehensive new study lays out evidence to support reforms.
- Amid challenges in tertiary education efficiency, Croatia reports a significant jump in equity of access for disadvantaged students.

3. Investing in education and training

Croatia's spending on education and training remains at the EU average, with a strong focus on primary and tertiary education. The percentage of GDP spent on education and training in 2016 increased slightly by 0.1 percentage points to 4.8 % (EU average 4.7 %) and stands just above the pre-crisis high in 2008²¹. This level of investment was not, however, reflected in the annual expenditure on educational institutions per pupil or student. In 2014, Croatia invested among the smallest amounts in the EU, at purchasing power standard, into pre-tertiary education. The investment was fourth-lowest at ISCED levels 1 and 2, and third-lowest at levels 3-4 (the respective figures were 3 496 and 3 342 in Croatia, compared to the EU average of 6 494 and 7 741²²).

Education spending other than salaries has not yet returned to pre-crisis levels. As Croatia adjusted to the 2009 financial crisis, cuts to the education budget primarily targeted investments, equipment and infrastructure. As a result, the proportion of funding for teacher salaries rose from 63.4 % to 72.35 % between 2010 and 2016²³ (Figure 2). Yet, gross salaries across the education sector have only increased mildly in real terms between 2010 and 2017 (by 2.75 %²⁴). The immediate challenge is to restore spending on items that are important for the quality of education while also addressing the attractiveness of the teaching profession²⁵.

²¹ Eurostat. Online data codes: gov_10a_exp, nama_10_gdp.

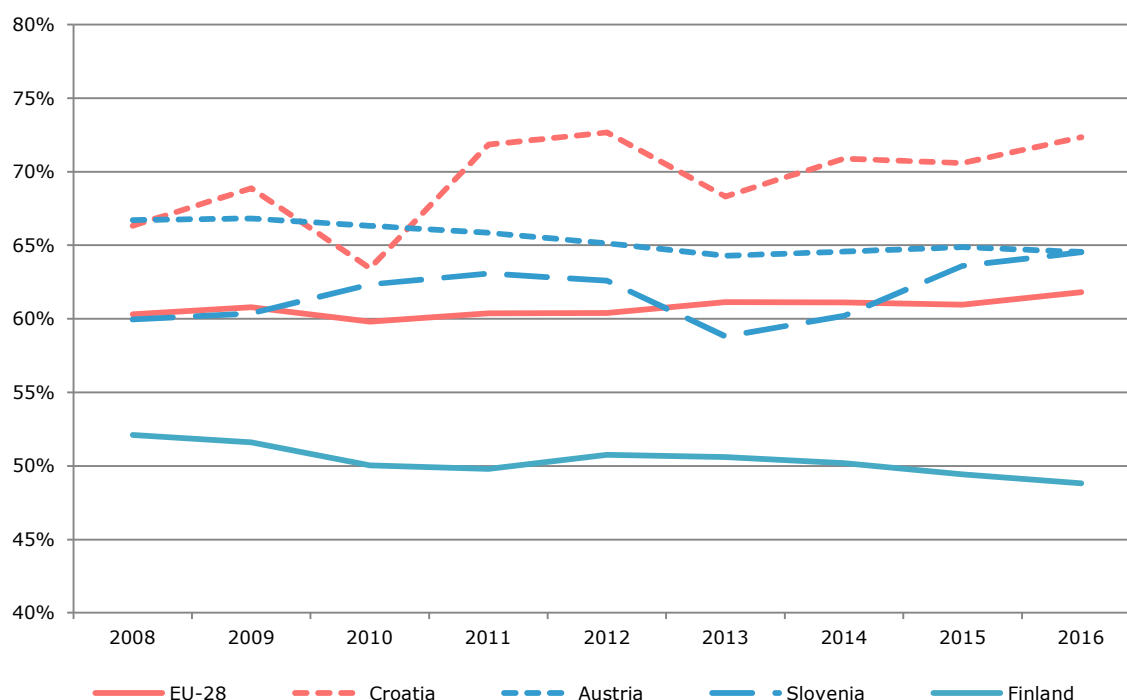
²² Eurostat. Online data code: educ_uoe_fini04. The definition of EU data differs.

²³ Eurostat. Online data code: gov_10a_exp. Additionally, teachers in Croatia at ISCED levels 1-3 do not receive a higher salary than teachers in neighbouring countries (EURYDICE 2016).

²⁴ Salary data: Croatian Bureau of Statistics. Consumer price index data: Eurostat, online data code prc_hicp_aind.

²⁵ In the 2013 Teaching and Learning International Survey (TALIS, OECD 2014), only 9.6 % of Croatian teachers thought that the teaching profession was valued in society, among the lowest in the survey (the average was 30.9 %)

Figure 2. Teacher salaries as a % of general government expenditure on education and training, 2008-2016



Source: Eurostat. Online data code: [gov_10a_exp](#).

There is potentially room to increase the efficiency of Croatia's spending on education and training, but a lack of capacity and tradition of evidence-based policy making affects reforms. Evidence suggests that Croatia could make more efficient investments in education and training: it ranks among the three EU Member States with the highest number of tertiary education institutions per citizen (European Commission/EACEA/Eurydice, 2018); and it has around 25 % fewer pupils per teacher than the EU average (11.0 HR vs 13.9 EU) and a declining pupil population²⁶. Yet, decisions on teaching staff need to take into account Croatia's numerous mountain and island municipalities which are facing problems attracting teachers. They would similarly need to consider recent emigration rates²⁷ which are affecting regional teaching workforce needs²⁸. While Croatia has been developing a growing evidence base²⁹, comprehensive studies bringing together different evidence streams — such as the recent early childhood education and care (ECEC) study outlined below (Dobrotic, Matkovic, Menger, 2018) — are rare.

Croatia has begun implementing some of the reforms of its strategy on education, research and technology. The Ministry of Education launched some of the reforms outlined in the strategy and its linked documents, such as the curricular reform, vocational education and training (VET) reform, higher education funding agreements and some aspects of the Croatian Qualifications Framework. However, the strategy's full implementation has been the subject of political disagreements, and the government has yet to adopt the national action plan for the specific activities.

²⁶ Eurostat. Online data code: [educ_uoe_perp04](#).

²⁷ Croatian Bureau of Statistics (CBS), Migration of population of Republic of Croatia 2016.

²⁸ The wide differences in emigration rates between regions further complicate decisions in this area.

²⁹ The 2018 studies include, among others, the Eurostudent report, register- and survey-based graduate tracking and the NEET tracking.

4. Citizenship education

Croatian pupils demonstrate an above-average knowledge of civic competences. In the part of the IEA study examining students' civic knowledge, 40 % of Croatian students reached level B, above the average of the countries taking part in the study. Nevertheless, in areas such as community volunteering or campaigning for a goal, Croatian pupils scored below the ICCS average. Furthermore, students from Croatia showed a lower level of trust in public institutions, the government, parliament and political parties and the media in comparison to other countries (IEA, 2017, Table 4.13). This lack of trust increased as citizenship knowledge increased (JRC, 2018).

The level of time devoted to civic education is low and teacher preparation is weak. Croatia delivers citizenship education primarily as a compulsory cross-curricular theme, with the addition at the secondary level of a one-year compulsory separate subject. Croatia and Portugal provide the fewest hours of citizenship education – either as compulsory separate subjects or integrated into other compulsory subjects – in the EU (Eurydice, 2017). As in most other EU countries, there are no specialist or semi-specialist teachers of citizenship education, and in addition there are no national regulations on the pedagogical competences in initial teacher education (ibid.). Croatian teachers also have significantly fewer opportunities to participate in citizenship education trainings, either in initial or ongoing training, as measured in the 2016 International Civic and Citizenship Education Study³⁰ (ICCS) (IEA, 2017, table 2.11).

Expanding citizenship education in Croatia depends on municipal-level initiatives. In 2017, the city of Rijeka experimented with introducing civic education in primary schools as an extra-curricular activity. Following a positive external evaluation, the experimental implementation expanded to 11 other municipalities and now includes the third- and fourth-largest cities in the country.

5. Modernising school education

Croatian schools have a high student completion rate, and reforms have been launched to address challenges in other areas. Croatia remains the EU leader in preventing early leaving from education and training, with a rate of 3.1 % leavers in the 18-24 age group compared to the EU level of 10.6 %³¹. Croatian pupils, however, score below-average in international competence surveys such as the OECD's Programme for International Skills Assessment (PISA) survey, which points to a need to reconsider the quality of the education provided. Croatia has initiated a number of reforms to improve quality. In addition to the curricular reform (see box 1), a proposed reform of the general education law plans several changes. While stopping short of licensing principals, which had been envisioned in the education strategy, anyone applying for the position will be obliged, if the law is adopted, to propose a work programme as supporting documentation. The law also proposes that teachers working on EU-funded projects be rewarded with a 30 % increase in their salary. Separately, the Ministry proposed an updated ordinance on teachers' advancement and reward, which has not been revised in over a decade. This may help increase the prestige of the teaching profession in Croatia, assessed as low by 63.9 % of pupils in a recent survey supported by the European Social Fund (IDIZ 2018).

Building on the success of the e-Schools project, Croatia moves to introduce mandatory computer courses in primary and general secondary schools. The e-Schools project to increase the digital maturity of 15 % of Croatian schools, supported by the European Social Fund (ESF) and the European Regional Development Fund (ERDF), was voted among the world's top 12 ICT education projects in a UNESCO contest. Building on the project's success and a general public interest in improving digital skills, the Ministry of Education published in February 2018 the decision to introduce IT in primary and general secondary schools starting in 2018/2019. VET schools rollout is expected in the next phase of the reform.

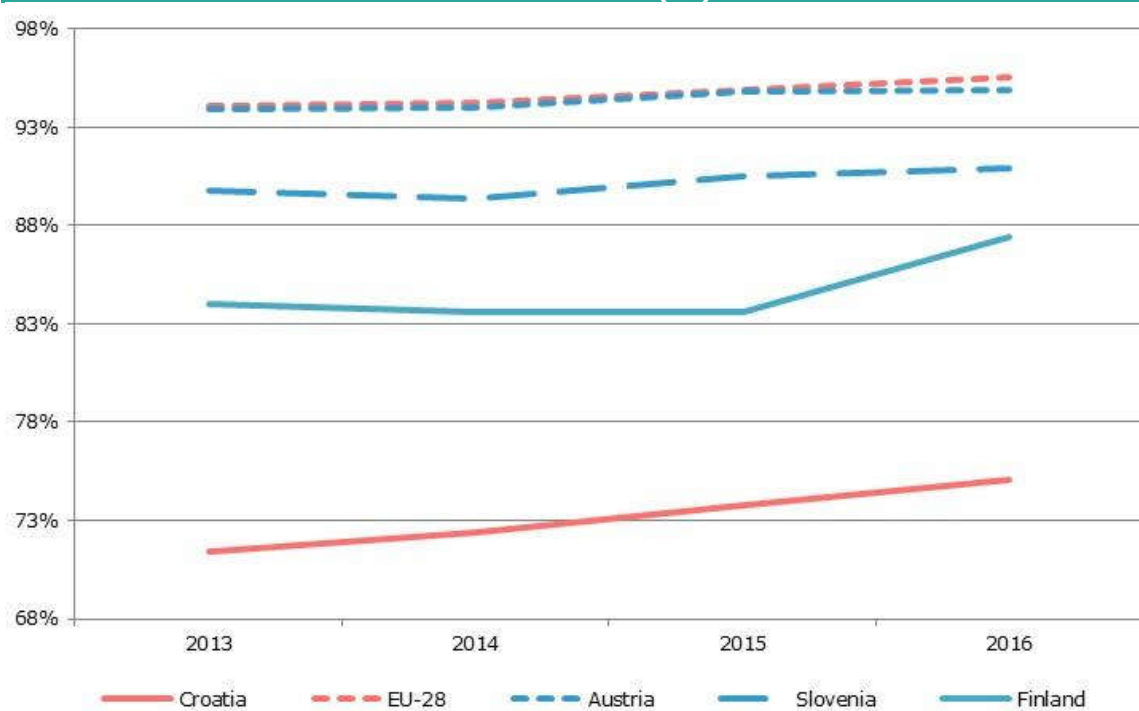
Croatia is facing significant difficulties in increasing ECEC participation, primarily due to the funding model. At 75.1 %, Croatia has the lowest rate of ECEC participation in the EU,

³⁰ ICCS investigates the ways in which young people are prepared to undertake their roles as citizens. 14 EU Member States participated in ICCS: Belgium-Flanders, Bulgaria, Croatia, Denmark, Estonia, Finland, Germany (North Rhine-Westphalia), Italy, Latvia, Lithuania, Malta, the Netherlands, Slovenia and Sweden.

³¹ Eurostat. Online data code: edat_ifse_14.

compared to the average rate of 95.3 % in the EU in 2016³² (Figure 3). This leaves a substantial number of children in Croatia, mostly in poorer regions³³ (Dobrotic, Matkovic, Menger, 2018), at risk of lower performance later in their schooling³⁴. The primary barrier to wider coverage is the decentralisation of 99 % of ECEC costs to the municipalities. This policy — only found in two other Member States for children ages 4-6 (Poland and Denmark, Eurydice, 2014³⁵), has created a strong tie between regional budgets and ECEC participation. Given significant differences in regional development — the GDP per capita of Brod-Posavina county is only 32 % of that of the City of Zagreb — higher participation is unlikely without targeted support to fiscally poorer regions. To improve quality, access and infrastructure, Croatia has earmarked investments worth EUR 40 million from the ESF, EUR 70 million from the European Agricultural Fund for Rural Development and a further EUR 9 million from the national funds. Nevertheless, in the absence of a review of the ECEC funding model, and given the trends since 2009, Croatia is likely to remain below the 95 % Education and Training 2020 benchmark.

Figure 3. ECEC participation from 4 years of age to the start of compulsory education 2013-2016 (%)



Source: Eurostat. Online data code: *educ_uoe_enra10*.

Box 1: School for Life initiative kicks off the curricular reform with a pilot year in 2018/2019

After a period of uncertainty in 2016 and 2017, the experimental implementation of the curricular reform was formally launched in March 2018 with the selection of 74 pilot implementation schools (around 6 % of all schools in Croatia). Despite criticism from some stakeholders, the reform helps to address the country-specific recommendation to *'deliver on the reform of the education and training system to improve its quality and labour market relevance*

³² Eurostat. Online data code: *educ_uoe_enra10*.

³³ Only 22 % of children in Brod-Posavina county participated in ECEC in 2014.

³⁴ The OECD (2016) found that pupils who had not attended pre-primary education had three times the chance of being low performers in PISA than those who did attend for more than one year.

³⁵ The report uses data from 2012/2013, but remains relevant for Croatia, which has not undertaken ECEC funding reforms since then.

for both young people and adults, issued to Croatia in 2018 (Council of the European Union, 2018).

During the pilot period, Croatia will invest around EUR 25 million in school equipment upgrades, part of which will come from EU funds, and the reform rollout will include new textbooks to be delivered in both paper and digital format. The pilot reform is supported by the European Commission's Structural Reform Support Service, bringing together experts from across Europe to train the trainers and facilitate the introduction phase.

The new curricula, developed in a comprehensive drafting and assessment process, adopt the learning outcomes approach, which shifts the classroom focus to the pupils' experience. The rollout will be staggered so that the pilot covers grades one, five and seven (covering Biology, Chemistry and Physics) of primary school and the first grade of secondary school.

The pilot will include:

- Curricula and pupil assessment based on the learning outcomes approach
- Teacher training for new curricula and teaching and assessment methods
- Training of school principals
- Framework for teaching pupils with disabilities
- Framework for teaching gifted pupils
- Introduction of cross-subject teaching of key competences.

6. Modernising higher education

While there has been success in increasing equity in tertiary education, attainment rates continue to decline, likely as a result of emigration of recent graduates. The proportion of people in Croatia ages 30-34 with tertiary education declined for a third year in a row and stood at 28.7 % in 2017 (EU average 39.9 %). An analysis of graduation rates in the relevant age cohorts³⁶ together with the relevant migration rates suggests that the decline is likely influenced by increasing rates of emigration³⁷. In terms of equity, access to tertiary education for students with lower socio-economic status appears to be improving, with an increase of 8 percentage points between 2010 and 2016³⁸, among the highest of the countries taking part in the Eurostudent VI survey (Hauschildt, Vögtle, Gwosc, 2018). This could in part be the result of series of reforms, started in 2010, which covered tuition fees, food subsidies, student financial support and accommodation.

Croatia's system of admission into tertiary education is leading to labour market issues and inefficiencies. Universities in Croatia are autonomous in determining their enrolment quotas and academic programmes, with the role of national authorities limited to setting rules covering tuition fee subsidies (EUA, 2017). This lowers the labour market relevance of tertiary education, including in the areas of strategic importance. For example, to meet the existing labour market needs for ECEC teachers, Croatia would need to double the admission quotas in corresponding programmes (Dobrotic, Matkovic, Menger, 2018). The actual increase of just 12 % between 2009 and 2017 (ibid.) therefore creates the risk of a shortage, limiting Croatia's ability to meet its ECEC quality and participation ambitions. At the same time, programmes with weak labour market prospects, as defined by the Croatian Employment Service, have seen only small changes in admissions numbers³⁹. Croatia has been trying to encourage enrolment in priority subjects through performance funding agreements, but the impact on admissions numbers has been limited. The introduction of Science, Technology, Engineering and Mathematics (STEM) scholarships supported by the ESF aims to create an incentive for students. But without a review of the current admissions

³⁶ On average, it takes an estimated 3.5 to 5 years to finish a first cycle tertiary education degree in Croatia, which implies a graduation age of 22-24 years. To analyse the education makeup of people ages 30-34, the relevant graduation years are therefore 2009-2011.

³⁷ It is worth noting that no data exists on the education profile of people ages 30-34 who are part of outgoing migration.

³⁸ From 50 % to 58 %.

³⁹ The Croatian Employment Service (CES) has been issuing annual guidelines on the need for qualification profiles. Reductions have been recommended for programmes in economics and business administration (CES 2012-2018), yet the number of first-year enrolments in these programmes remained the same, relative to the total number of first-year students, between 2012 and 2016 (source: CBS).

policy, Croatia's ability to strategically guide the tertiary education skills landscape will remain limited.

Croatia is launching a new round of performance-based funding agreements. After two cycles of performance-based funding agreements with relatively limited impact and many lessons learned on both sides of the negotiation table, the national authorities and higher education institutions are aiming to strengthen the link between funding and the achievement of agreed objectives. For the first time, research funding is an integral part of the funding agreements.

Box 2: EU funds help increase equity in tertiary education

The improved access to higher education for students with low socio-economic status in Croatia, visible from the Eurostudent VI study, was supported in part by two actions from the ESF and the ERDF:

- The ERDF action Modernisation, improvement and expansion of accommodation infrastructure in higher education to improve access and completion for disadvantaged students aims to provide 2 270 additional students with improved access to dormitories by renovating or building 5 000 new beds across Croatia, thus helping to reduce the cost of student accommodation. The action supported improvements in 14 towns and cities in Croatia for a total amount of EUR 160 million.
- The ESF action Provision of scholarships to students from lower socio-economic background will grant 22 000 scholarships over 5 years with a total budget of EUR 36 million, of which 85 % is EU funds. The scholarships help students pay on average a third of their expenses in an academic year (Hauschildt, Vögtle, Gwosc, 2018).

The actions show how using evidence-based planning of policy interventions can be beneficial. When Croatia first joined the Eurostudent survey in 2008, it only had access to limited data on the socio-economic makeup of the student population. After the results pointed to insufficient levels of direct student support and high accommodation costs, Croatia was able to target the ESF and ERDF support for 2014-2020.

7. Modernising vocational education and training

Croatia is progressively implementing a comprehensive curricular reform in VET. The share of VET students at upper secondary level remained stable at 70 % in 2016, among the five highest in the EU. However, the employment rate of recent VET graduates decreased from 70.3 % in 2016 to 59.4 % in 2017, pointing to the urgency of modernising the sector. Amendments to Vocational Education and Training Act were adopted in March 2018 allowing the introduction, in July 2018, of the new national VET framework curriculum, the development of modular, outcome-based sectorial curricula and greater autonomy of VET schools in the design school-level curricula. Further, at the end of 2017, the Agency for Vocational Education and Training and Adult Education (AVETA) launched an ESF-funded project to develop sectorial curricula in VET and to better enable VET schools to introduce and implement new curricula. Particular focus is on work-based learning and the learning-outcomes approach and on updating and redesigning teaching materials.

Regional centres of competences in VET and a pilot of dual VET education complement VET reforms. In May 2018, Croatia adopted the national network of regional centres of competences in VET whose purpose is to designate, with ESF and ERDF support, places of excellence that will implement programmes of regular vocational education and training, lifelong learning and other forms of formal and informal education. In July 2018 25 VET schools were appointed to the Regional Centres of Competences in VET in the sectors / sub-sectors Tourism and Hospitality, Mechanical Engineering, Electrical Engineering and Computing, Agriculture and Health, the aim being to achieve a balance between regional presence and high levels of quality. In addition, the Ministry presented a model of Croatian dual education and experimental programme "Dual Education in VET" for 4 qualifications in June 2018. The programme is to be delivered in 11 VET schools in Croatia and address challenges with inadequate practical training and insufficient attention to entrepreneurial competences. It is based in part on cooperation between the Ministry

of Education and the Swiss Federal Institute for VET, the German-Croatian Industrial and Trade Chamber and the Austrian Embassy. VET graduate tracking is not covered by the VET Act, and data is collected by schools on a voluntary basis. The recent programme for the development of the VET system refers to the importance of tracking students after they finish secondary education. Through this programme, the Agency for VET plans to implement a tracking model as part of a wider project. A separate inter-institutional project aims to establish a system of monitoring persons not in employment, education or training.

8. Promoting adult learning

An upcoming law on adult education aims to address Croatia's persistent challenge in this field. The adoption of the new Adult Education Act in 2018 has the potential to address one of the lowest rates of adult participation in learning in the EU, which further dropped from 3 % in 2016 to 2.3 % in 2017. In 2015, according to the Continuing Vocational Training Survey, 55.4 % of Croatian companies (compared to an EU-28 average of 72.6 %) provided vocational training to their employees and 28.7 % of employees participated in this training (EU-28 average, 40.8 %). In 2015, the majority of Croatian enterprises indicated that team working skills and technical, practical and job-specific skills were the main skills needed to develop a business. The changes in the Adult Education Act include measures for self-assessment, external evaluation of adult education institutions and a professional licensing system for teaching staff. Implementation should help increase quality and access to education, provide support to upskill and reskill workers and ultimately lead to increased employment rates for vulnerable groups, in line with the objectives of the EU Council Recommendation on upskilling pathways. The new Act also envisages the development of adult education programmes in line with the Croatian Qualifications Framework Act. In 2016, 55 % of the population had at least basic digital skills, close to the EU average of 56 %.

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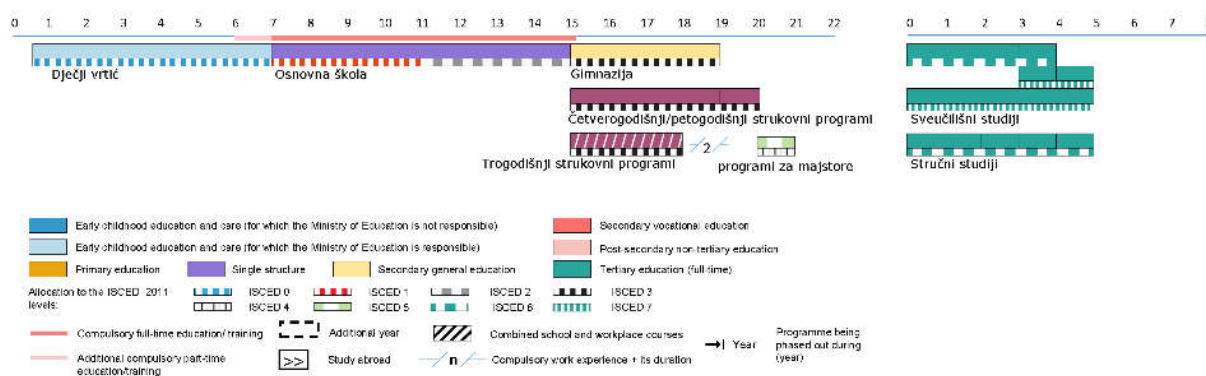
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10. Annex I: Key indicator sources

Indicator	Eurostat online data code
Early leavers from education and training	edat_lfse_14 + edat_lfse_02
Tertiary educational attainment	edat_lfse_03 + edat_lfs_9912
Early childhood education and care	educ_uoe_enra10
Underachievement in reading, maths, science	OECD (PISA)
Employment rate of recent graduates	edat_lfse_24
Adult participation in learning	trng_lfse_03
Public expenditure on education as a percentage of GDP	gov_10a_exp
Expenditure on public and private institutions per student	educ_uoe_fini04
Learning mobility: Degree mobile graduates	JRC computation based on Eurostat / UIS / OECD data
Credit mobile graduates	educ_uoe_mobc02

11. Annex II: Structure of the education system



Source: European Commission/EACEA/Eurydice, 2017. *The Structure of the European Education Systems 2017/18: Schematic Diagrams*. Eurydice Facts and Figures. Luxembourg: Publications Office of the European Union.

Comments and questions on this report are welcome and can be sent by email to:
EAC-UNITE-A2@ec.europa.eu