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Education and Training Monitor 2022

Accompanying the document

**Communication from the Commission to the European Parliament, the Council, the
European Economic and Social Committee and the Committee of the Regions**

on progress towards the achievement of the European Education Area

{COM(2022) 700 final} - {SWD(2022) 750 final}

Education and Training Monitor 2022

CROATIA



The Education and Training Monitor's country reports present and assess the main recent and ongoing policy development at all education levels in EU Member States. They provide the reader with more in-depth insight of the performance of countries with regard to the EU level targets agreed within the EEA. They are based on the most up-to-date quantitative and qualitative evidence available.

Section 1 presents a statistical overview of the main education and training indicators. Section 2 focuses on how the Member State has addressed or is addressing one of its education challenges. Section 3 covers early childhood education and care. Section 4 deals with school education policies. Section 5 covers vocational education and training and adult learning. Finally, Section 6 discusses measures in higher education.

The Education and Training Monitor's country reports were prepared by the European Commission's Directorate-General for Education, Youth, Sport and Culture (DG EAC), with contributions from the Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL).

The document was completed on 30 September 2022

More background data at:

<https://op.europa.eu/webpub/eac/education-and-training-monitor-2022/en/>



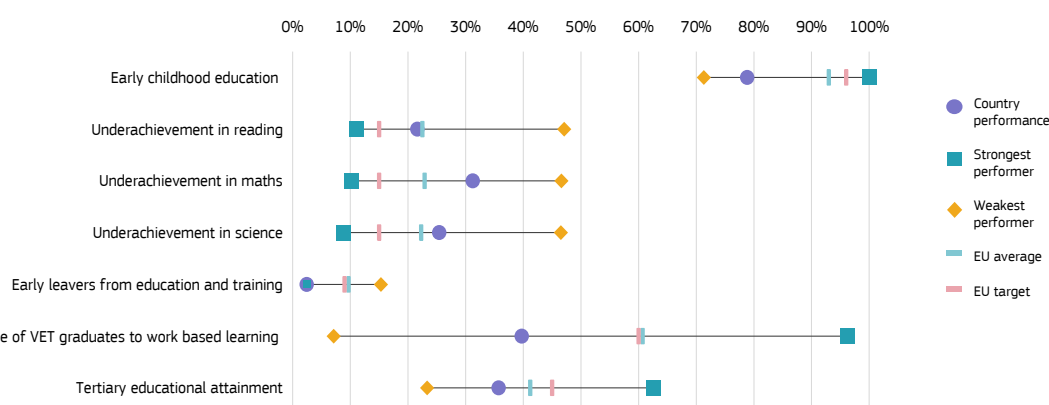
1. Key indicators

Figure 1: Key indicators overview

			Croatia		EU	
			2011	2021	2011	2021
EU-level targets			2030 target			
Participation in early childhood education (from age 3 to starting age of compulsory primary education)	≥ 96 %		67.6% ¹³	78.8% ²⁰	91.8% ¹³	93.0% ²⁰
Low achieving eighth-graders in digital skills	< 15%		35.9% ¹³	:	:	:
Low achieving 15-year-olds in:	Reading	< 15%	22.4% ⁰⁹	21.6% ¹⁸	19.7% ⁰⁹	22.5% ¹⁸
	Maths	< 15%	33.2% ⁰⁹	31.2% ¹⁸	22.7% ⁰⁹	22.9% ¹⁸
	Science	< 15%	18.5% ⁰⁹	25.4% ¹⁸	18.2% ⁰⁹	22.3% ¹⁸
Early leavers from education and training (age 18-24)	< 9 %		5.0%	2.4% ^{bu}	13.2%	9.7% ^b
Exposure of VET graduates to work-based learning	≥ 60 % (2025)		:	39.7%	:	60.7%
Tertiary educational attainment (age 25-34)	≥ 45 %		24.4%	35.7% ^b	33.0%	41.2% ^b
Participation of adults in learning (age 25-64)	≥ 47 % (2025)		:	:	:	:
Other contextual indicators						
Equity indicator (percentage points)			:	13.3 ¹⁸	:	19.30 ¹⁸
Early leavers from education and training (age 18-24)	Native		4.9%	2.2% ^{bu}	11.9%	8.5% ^b
	EU-born		:	:	25.3%	21.4% ^b
	Non EU-born		:	:	31.4%	21.6% ^b
Upper secondary level attainment (age 20-24, ISCED 3-8)			94.9%	96.9% ^b	79.6%	84.6% ^b
Tertiary educational attainment (age 25-34)	Native		24.8%	34.9% ^b	34.3%	42.1% ^b
	EU-born		33.8% ^u	49.6% ^{bu}	28.8%	40.7% ^b
	Non EU-born		13.9% ^u	46.1% ^b	23.4%	34.7% ^b
Education investment	Public expenditure on education as a percentage of GDP		4.6%	5.4% ²⁰	4.9%	5.0% ²⁰
	Public expenditure on education as a share of the total general government expenditure		9.4%	10.0% ²⁰	10.0%	9.4% ²⁰

Sources: Eurostat (UOE, LFS, COFOG); OECD (PISA). Further information can be found in Annex I and at *Monitor Toolbox*. Notes: The 2018 EU average on PISA reading performance does not include ES; the indicator used (ECE) refers to early-childhood education and care programmes which are considered by the International Standard Classification of Education (ISCED) to be 'educational' and therefore constitute the first level of education in education and training systems – ISCED level 0; the equity indicator shows the gap in the share of underachievement in reading, mathematics and science (combined) among 15-year-olds between the lowest and highest quarters of socio-economic status; b = break in time series, u = low reliability, : = not available, 09 = 2009, 13 = 2013, 18 = 2018, 20 = 2020.

Figure 2: Position in relation to strongest and weakest performers



Source: DG Education, Youth, Sport and Culture, based on data from Eurostat (LFS 2021, UOE 2020) and OECD (PISA 2018).

2. A focus on demography

Croatia's population is fast decreasing. The 2021 population census puts its population at 3 888 500 inhabitants, 9.5% smaller than 10 years ago and 18.7% smaller than 30 years ago (895 700 fewer inhabitants in total), due to emigration and a declining birth rate. The government is developing a Strategy for Demographic Revitalisation of the Republic of Croatia by 2031, with education as one of the focus areas¹.

Demographic developments create additional challenges in education. Croatia's less developed areas are the most affected, with Vukovar-Srijem County having lost 19.5% of its population in the last 10 years. These areas also offer weaker access to education. They have insufficient infrastructure, a lack of teachers, charge too high fees in early childhood education and care (ECEC) (Education and Training Monitor 2021 and 2020), and have unequal availability of secondary school programmes (Matković, Šabić, 2022). Accessing higher education is also difficult due to the distance to higher education institutions (HEIs) and insufficient student housing². Improving access to education can therefore help to demographically revitalise these areas. Population decline also affects the student population: between 2013/2014 and 2021/2022, the population of primary school pupils in Croatia decreased by 5.25% and of secondary school pupils by 19.2% (by up to 36% in rural areas). As a result, there

¹ https://demografijaimladi.gov.hr/UserDocsImages/Brochure/KOMUNIKACIJSKA%20STRATEGIJA_STRATEGIJE%20DEMOGRAFSKE%20REVITALIZACIJE%20RH_2021.pdf

² Eurostudent, 2018: 34.7% of students whose parents have the lowest education did not receive accommodation, lowering their chances of successful studying.

are schools with a small number of pupils, while in others infrastructure is insufficient for the number of pupils and teaching is organised in shifts (for 60% of primary and 66% of secondary school pupils). To ensure that the new ECEC infrastructure appropriately addresses the needs, the government has developed a database with the mapping of ECEC facilities³ and tied to it criteria for awarding resources for their construction and reconstruction⁴. An assessment of infrastructure investment needs, done with the help of the World Bank, will also form the basis for the construction and renovation of primary schools to make all-day schooling possible. The construction and upgrading of secondary schools will be based on the comprehensive analysis of secondary education needs (CID Annex, 2021, pp. 173-176.), including the effects of demographical changes, the possibilities of increasing the share of pupils in general secondary schools, and labour market relevance.

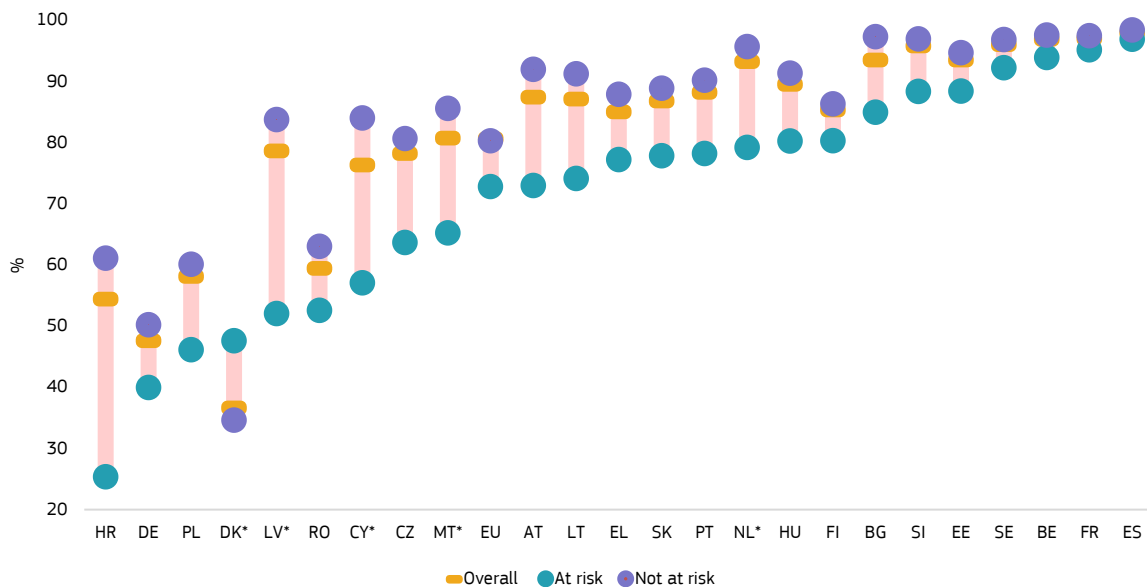
3. Early childhood education and care

Participation in ECEC is low, especially for disadvantaged groups. The participation of children under 3 in formal childcare in 2020 was only 20.4%, but its increase by 4.7 percentage points (pps) from 2019 was the second largest increase in the EU. Participation between 3 and the beginning of

³ <https://app.powerbi.com/view?r=eyJrjoiODU5NDNhY2EtNzQ4Zi00MzA2LWE4ODYtZTNIOTljMzQ0ZGQ4IiwidCI6IjJjMTFjYmNjLWI3NjEtNDVhYi1hOWY1LTRhYzZc3ZTk0ZTFkNCIsImMiOj9h9;>
<https://app.powerbi.com/view?r=eyJrjoiMTc2YWNhMzYtYTEzMi00Yzk0LWE3MDktZWJkMjYyYTBiYzJlIiwidCI6IjJjMTFjYmNjLWI3NjEtNDVhYi1hOWY1LTRhYzZc3ZTk0ZTFkNCIsImMiOj9h9.>

⁴ <https://mzo.gov.hr/UserDocsImages/dokumenti/EUfondovi/Nacionalni-plan-oporavka-2021-2026/Prva-izmjena-dokumentacije/Upute-za-prijavitelje-SZPIPEU-C3.1.%20R1-11.1-NPOO-1-izmjena.pdf>

Figure 3: Participation of children in formal childcare or education between 3 and the minimum mandatory school age by AROPE, 2020 (%)



Source: Eurostat (EU-SILC), special extraction. Notes: * = Data with low reliability; Data for IE, IT, LU not available. The AROPE rate is the share of the total population at risk of poverty or social exclusion.

compulsory primary education is 78.8%, 0.6 pps less than in 2019⁵ and substantially below the 93% EU average and 96% EU-level target. It is much lower for disadvantaged groups (e.g. only 24% for Roma children (FRA, RS 2021)). At 35.7 pps, the gap between children who are at risk of poverty or social exclusion (AROPE) and children who are not is the highest in the EU⁶. Displaced children from Ukraine are offered ECEC upon parents' request if the spatial conditions, organisation and financial capabilities of ECEC providers allow it (MZO, 2022). The Croatian Association of ECEC Teachers is putting together a book using symbols, with translation into Ukrainian and Croatian, to aid communication in ECEC. The share of children with developmental difficulties in regular ECEC is 7.7%⁷.

The Croatian recovery and resilience plan (RRP) supports large-scale infrastructure investments to increase participation in ECEC.

In recent years, Croatia has been investing in ECEC using EU funds for infrastructure and other measures to improve participation (European Commission, 2021). In 2021, around EUR 15 million were invested in ECEC infrastructure. The planned RRP funding for ECEC infrastructure is aiming to create 22 500 new places and help increase participation to 90% by 2026. As the RRP also states, the availability of ECEC for each child would require the reduction of regional differences in the quality and cost of pre-school education, enough teachers, the upgrading of existing nurseries and the construction of new kindergartens (RRP, 2021, p. 870.). In April 2022, the Ministry of Education published a new database with data on ECEC that will enable better monitoring of the situation and progress towards meeting the needs and targets in this area⁸.

⁵ Eurostat, [educ_uoe_enra21].

⁶ Eurostat (EU-SILC), special extraction.

⁷ <https://app.powerbi.com/view?r=eyJrjoiODU5NDNhY2EtN2Q4Zi00MzA2LWE4ODYtZTNIOTljMzQ0ZGQ4IiwidCI6IjJmMTFjYmNjLWI3NjEtNDVhYi1hOWY1LTRhYzc3ZTkoZTFkNCIsImMiOj9>

⁸ <https://app.powerbi.com/view?r=eyJrjoiODU5NDNhY2EtN2Q4Zi00MzA2LWE4ODYtZTNIOTljMzQ0ZGQ4IiwidCI6IjJmMTFjYmNjLWI3NjEtNDVhYi1hOWY1LTRhYzc3ZTkoZTFkNCIsImMiOj9>

Targeted measures are planned to improve disadvantaged children's and Roma participation in ECEC.

In line with the EU Roma strategic framework for equality, inclusion and participation for 2020-30, in June 2021 Croatia adopted the National Plan for the Inclusion of Roma 2021-27 (NPUR) and set national targets. Its 2027 ECEC target is to increase Roma participation in ECEC from 23% to 54% (NPUR, 2021, p. 60). Roma participation in ECEC, negatively affected by the distance to the nearest ECEC facility, varies regionally, with participation lowest in central Croatia (80% of 3-6-year-olds living over 3km away from the nearest ECEC facility) (Klasnić et. al., 2020). Besides increasing ECEC infrastructure, measures will be taken to reduce segregation by co-financing participation fees, providing transport to ECEC facilities for children in isolated or segregated areas, and promoting participation in ECEC (AP-NPUR, 2021, pp. 22-27). Similar measures are planned to increase the participation of children from low socio-economic backgrounds: areas without ECEC facilities given priority in creating new facilities; state financing to help municipalities with lower fiscal capacity cover maintenance costs; and European Social Fund+ subsidies to reduce the parental contribution for socially disadvantaged children (RRP, 2021).

Measures to tackle the shortage of ECEC teachers and legislative changes targeting participation might also affect quality.

According to the RRP, 5658 additional ECEC teachers would be needed to reach the target on inclusion of children from the age of 3 to compulsory school in ECEC by 2030. This would require increased enrolment in ECEC teacher training programmes, and additional immediate measures (RRP, 2021). On 13 May 2022, Croatia amended the ECEC Act. The amendments establish a national network of ECEC facilities that

should contribute to the monitoring and planning of ECEC capacities and an electronic ECEC enrolment system. They also oblige municipalities to provide a place in ECEC 1 year before school entry. ECEC providers are required to provide an attendance certificate, which becomes mandatory for enrolment in primary schools, making obligatory attendance more enforceable. The amendments also contain a provision allowing primary school teachers to be recruited as ECEC teachers. They would need to complete a re-qualification programme at a higher education institution (HEI) within 2 years, and work alongside a qualified ECEC teacher until then. Critical reactions to the amendments (including protests of ECEC teachers and parents) have raised their concern that the changes for increasing ECEC participation may diminish the quality of ECEC.

4. School education

Continuing comprehensive education reform is important for improving pupils' basic skills.

The basic skills of 15-year-olds in 2018 PISA cycle were low: 21.6% of them underperformed in reading, 31.2% in maths and 25.4% in science, all much higher than the 15% EU-level target and for maths and science among the highest in the EU. Comprehensive education reform, originally envisioned in the 2014 Strategy of Education, Science and Technology⁹, is being continued through the RRP. The RRP aims to provide funding for infrastructure investments to increase the number of schools, required for changing to teaching in one shift and for introducing all-day schooling. A related reform, begun in May 2022, introduces national exams in primary schools. Until now the only national exam has been the State Matura at the end of secondary education. In 2021/2022, national exams were introduced in 81 sample primary schools in 8th grade. In 2022/2023 they will be introduced in 5th grade, to test pupils' knowledge at the beginning and end of lower secondary

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<https://app.powerbi.com/view?r=eyJrjoiMTc2YWNhMzYtYTEzMi00Yzk0LWE3MDktZWJkMjYyYTBiYzJlIiwidCi6JjJmTFYmNjLWI3NjEtNDVkyi1hOWY1LTrhYzc3ZTkoZTFkNCIsImMiOjh9>.

⁹ <https://mzo.gov.hr/istaknute-teme/odgoj-i-obrazovanje/vrednovanje-i-osiguranje-kvalitete-u-sustavu-odgoja-i-obrazovanja/141>.

education in order to improve monitoring and education outcomes¹⁰. Eventually, all 5th and 8th grade primary school pupils will be taking these exams.

Pupils have low civic competencies and do not trust political institutions. The Institute for Social Research periodically examines students' political literacy and values in their final secondary school year. Compared to the 2015 cycle the 2021 cycle shows weaker understanding of basic political terms (e.g. only 57.7% know what the constitution is), though overall political knowledge has slightly increased. Socio-political attitudes of young people are somewhat more democratic. However, pupils' trust in political institutions and the legal system is low (only 16.8% trust the government), as it is in sources of information. Political knowledge strongly depends on the type of secondary school, reflecting many schools' continued lack of civic education (Baketa et al., 2021). Civic education was introduced nationally in 2019 as a mandatory transversal subject in primary and secondary schools. From 2022/2023 some towns and regions will introduce it as an optional subject in primary and/or secondary schools (Zagreb¹¹, Pula¹², Primorsko-goranska county). These local initiatives follow the opinion of 2020 report of the Ombudsman for Children stating that civic education as a transversal subject is not enough¹³.

Early leaving from education and training is low, but much higher among Roma. The 2021 share of early leavers from education and training (2.4%), the lowest in the EU (9.7%), has increased 0.2 pps since 2020. The risk of leaving education

and training early is higher for socio-economically disadvantaged and Roma pupils. According to the 2021 Roma Survey, only 39% of Roma aged 20-24 have completed at least upper secondary education (vs 96.9% of the general population), and there is a marked gender gap (women 33%, men 45%). The National Plan for the Inclusion of Roma 2021-27¹⁴ and its action plan¹⁵ contain a measure to improve Roma educational attainment through various actions at lower education levels and several financial assistance actions and incentives at secondary school level. The city of Zagreb also has a scholarship programme for Roma secondary school pupils and higher education students. In 10 years, the number of beneficiaries has increased from 6 to 86 (14 of whom are higher education students), a testament to its success¹⁶.

One third of pupils do not get a meal at school. According to national statistical data, at the end of 2019/2020, 34% of public primary schools did not offer school meals¹⁷, although all children at risk of poverty have the right to free school meals. Research of the initiative 'Every Child has a Right to a School Meal' shows a 17% increase in the number of pupils who needed a free school meal in 2021 due to COVID-19 and the earthquakes. School principals (85%) confirm the need for free school meals, but say local funding is insufficient.

E-enrolment is enabled for all education levels. Since March 2022 e-enrolment in most educational institutions has been available on the government e-services portal e-Građani. E-enrolment, part of the digital transformation of

¹⁰ <https://www.ncvvo.hr/nacionalni-ispiti/>

¹¹ <https://www.zagreb.hr/grad-zagreb-ce-skolama-ponuditi-dva-programa-uz-gr/176856>

¹² <https://www.glasistre.hr/pula/ove-godine-se-pokrece-predmet-gradanski-odgoj-i-obrazovanje-u-svih-11-osnovnih-skola-na-podrucju-pule-768065>

¹³ https://www.sabor.hr/sites/default/files/uploads/sabor/2021-03-31/123003/IZVJ_PRAVOBRANITELJICA_ZA_DJECU_2020.pdf

¹⁴ <https://pravamanjina.gov.hr/UserDocImages/NPUR%202021-2027/Nacionalni%20plan%20za%20uklju%C4%8Divanje%20Roma.pdf>

¹⁵ <https://pravamanjina.gov.hr/UserDocImages/NPUR%202021-2027/Akcijski%20plan%20za%20provedbu%20NPUR-a%20za%202021.%20i%202022..pdf>

¹⁶ <https://www.edusinfo.hr/aktualno/iz-obrazovanja/50274>

¹⁷ <https://podaci.dzs.hr/2021/hr/9955>

the education system, automatically gathers the necessary documents from various institutions. As part of the e-Schools project, local computer networks have been designed at 1328 of 1511 school locations, and e-services put in place to enhance teaching and school governance. A study of teachers' self-efficiency in the use of information and communication technology suggests that older female teachers should be given targeted support (Šabić et al., 2022).

Maths teachers are scarce. According to the 2020 Employment Service survey, Croatia lacks 294 maths teachers, while the number of university maths students remains low. Almost 15% of primary school maths teachers are not adequately qualified. In July 2021, the Parliamentary Committee for Education and Science recommended taking several actions to address the lack of science, technology, engineering and maths (STEM) (specifically maths) teachers, notably to establish a national scholarship system for students studying to become STEM teachers, to increase the number of instruction hours in STEM subjects in schools, and increase teachers' salaries to make the profession competitive by 2026.

Displaced children from Ukraine are being immediately integrated into schools and given assistance. They are immediately enrolled in schools according to their abilities, final grades, certificates, and previously attended secondary school' programme¹⁸, and given preparatory classes in parallel (70 lessons, with the possibility of extension). Some attend Ukrainian classes online. The Croatian Agency for Education has given teachers guidelines on how to inform pupils about the situation in Ukraine and to help them help Ukrainian children to integrate and overcome trauma (AZOO, 2021a and AZOO, 2021b). Croatian Academic and Research Network (CARNET) is distributing laptops to schools for students from Ukraine to enable their participation in distance learning lessons from Ukrainian schools.

¹⁸ <https://mzo.gov.hr/vijesti/ukljucivanje-djece-i-ucenika-izbjeglica-iz-ukrajine-u-odgojno-obrazovni-sustav-republike-hrvatske-4826/4826>



Box 1: Targeted COVID-19 support for 286 Roma students

UNICEF Croatia, the Ministry of Science and Education, the Office for Human Rights and the Rights of National Minorities, the Roma Youth Association of Croatia and seven primary and lower secondary schools provided targeted support for Roma pupils with increased risk of dropout due to irregular schooling caused by the earthquakes and COVID-19. In 2021, eleven mentors helped 286 Roma pupils to improve their learning routines, strengthen positive learning experiences, improve their educational outcomes and lift their educational aspirations. None of the pupils who received the mentors' support repeated a grade or dropped out of school. The Roma mentors had a support network led by two university professors and a Roma advisor.

5. Vocational education and training and adult learning

Croatia is taking measures to make vocational education and training (VET) more relevant to the labour market. The share of students in upper secondary vocational education¹⁹ is one of the largest in the EU (69.3% vs the EU average of 48.7% in 2021). However, the employment rate of recent VET graduates (69.9%)²⁰ is lower than the EU average (76.4%). The 2021 employment rate of low-skilled workers (42.1%) lags considerably behind those of medium-skilled (67.1%) and high-skilled workers (84.1%)²¹. This indicates a high level of skills

¹⁹ Eurostat [educ_uae_enrs05]

²⁰ Eurostat [edat_lfse_24]

²¹ LFSA_ERGAED 20- 64

mismatches²², contributing to severe labour shortages. To improve the quality of VET, in June 2022 Croatia adopted amendments to the VET Act (ZID ZSO, 2022) aiming to strengthen the model of dual education by regulating work-based learning. They regulate the establishment of cooperation between vocational schools and employers, including the rights and responsibilities of both mentors and students. To make the skills acquired in VET schools more relevant to the labour market, ESF and ESF+ funds new vocational curricula based on the occupational and qualification standards in line with the Croatian Qualifications Framework (CROQF).

The analysis of secondary education needs provides data for policy measures. It was conducted to support measures to increase the share of students enrolled in general secondary education programmes, reduce the share of students enrolled in surplus vocational programmes and align vocational programmes with labour market needs (CID Annex, 2021). It will identify county-level inequalities: much needed given the highly pronounced social stratification in secondary education (e.g. three-year vocational schools are mostly attended by children from lower socio-economic backgrounds, while students from families of highly educated parents are more likely to attend grammar schools). There are regional inequalities in access to work-based learning in vocational programmes, which is generally low (39.7% vs 60.7% EU in 2021).

The participation rate in adult education in the last 4 weeks, at 5.1%, remains

²² The macroeconomic skills mismatch shows the relative dispersion of employment rates across population groups with different educational attainment levels: low (ISCED 0-2), medium (ISCED 3-5) and high (ISCED 6 and above). It compares the composition of employment (as a proxy for labour demand) with that of the working age population (as a proxy for supply) in terms of educational qualifications. Macroeconomic skills mismatches are high if the employment rates of low- and/or medium-skilled workers are low compared to those of high-skilled workers, while the former also make up a significant share of the working age population.

significantly lower than the EU average of 10.8%. In December 2021, the Croatian Parliament adopted the new Adult Education Act (ZOO, 2021), aimed at improving the quality of the educational programmes implemented and enabling the recognition of previous non-formally and informally acquired knowledge and skills. A quality assurance system for adult education is also being developed through the implementation of the Programme for the International Assessment of Adult Competencies (PIAAC), the development of quality assurance models, and the introduction of self-evaluation and external evaluation of adult education institutions. Quality assurance will also be implemented by aligning formal adult education programmes with the CROQF to fully meet the needs of the labour market and provide a skilled workforce. To further promote lifelong learning, many campaigns were organised in 2021, offering various activities and attracting a variety of stakeholders. Croatia has set a 2030 target of 55% of adults a year in training, more than doubling the 2016 rate of 26.9%.

Learning vouchers were introduced on 1 April 2022. They can be used by both employed and unemployed people for reskilling and upskilling, with a particular emphasis on developing green and digital skills. Over the next 4 years, 30 000 people should benefit from the scheme, which also aims to target vulnerable groups in the labour market. Currently 51 accredited institutions offer 39 programmes, including the newly developed curriculum for basic skills. The voucher system addresses the very big skills gaps in the Croatian labour market. Its effectiveness will be externally assessed after a certain period of implementation. Based on this system the ESF+ will broaden the offer of vouchers as well as introduce building blocks for potential implementation of Individual Learning Accounts in the future. In the meantime, foreign workers could fill labour and skills shortages. This may require improvements in the system of recognition of foreign qualifications.

6. Higher education

Tertiary educational attainment (TEA) is below the EU average and shows significant gaps. In 2021 TEA was 35.7%, far below the EU average of 41.2% and EU-level target of 45%. Above EU average gaps are present between genders (16.6 pps vs EU 11.1 pps), foreign and native born, and along the urban and rural lines (24.4 pps vs EU 21.8 pps). The TEA of foreign-born (47.1%) is much higher than that of native-born (34.9%), even for people from non-EU countries (46.1%).

The choice of studies is greatly affected by gender and socio-economic background. Women are much more likely to study education (81%), arts and humanities (68%) and social sciences (72%). Only 30% study engineering and 22% information and communication technology (ICT). Socio-economic background influences the choice of studies more than secondary school results, except for the two STEM faculties, where the choice primarily depends on the achievement (Puzić et al., 2021).

Recent graduates' employment rate is low and even lower for women. In 2021, the employment rate of recent tertiary graduates was 80.9%, 3.7 pps higher than in 2020, but still one of the lowest in the EU (the EU average is 84.9%). Research done by the Higher Education Agency shows that while women complete higher education (HE) with a higher average grade than men (4.06 vs 3.83), they have more difficulty finding a job (58.8% find it vs 62.5% of men), have lower incomes and are less satisfied with their job. Most unemployed respondents graduated from biotechnical sciences (24%) and humanities (23.8%). Technology graduates have the highest incomes and humanities or interdisciplinary studies graduates the lowest. The number of graduates working in their profession is decreasing, from 78% in 2017 to 64% in 2018/2019 (Glunčić, 2022).

Share of STEM graduates is high and growing, even more so for female graduates. The share of ICT graduates is also above the EU average (4.7% vs EU 3.9% in 2020) and has

increased by 0.6 pps since 2015. In 2020, Croatia had a high share of STEM graduates in the total number of graduates (28.5% vs EU 24.9%), up by 4.6 pps from 2015. Women are also more likely to choose STEM studies: 18.1% (vs the EU average of 14.1%) of all female graduates were STEM graduates in 2020, and women made up 38.6% of all STEM graduates (vs the EU average of 32.5%)²³, although there are no specific incentives for them. The share of female STEM graduates has increased by 2.6 pps since 2015, the highest increase in the EU, making Croatia one of the best performers in 2020 (11% vs EU 8.1%). Since 2017/2018, Croatia has awarded 3 400 STEM scholarships annually, co-financed by the ESF, to 5.83% of all students. However, a national evaluation shows that the rise in interest in STEM had started before and that the scholarship scheme did not really affect the beneficiaries' choice of studies or their completion. The evaluation concludes that a slightly different focus, e.g. on students of STEM studies who are socio-economically disadvantaged or at risk of dropout, or additional measures in secondary education, might produce better results (MRMSOSP, 2021).

The internationalisation of higher education is low, but efforts for improvement are ongoing. While the outward mobility rate in 2019/2020 was at the EU level (4.2%), inward degree mobility rate (2.9%) was the third lowest in the EU. Only 3% of students in 2019/2020 were from abroad (vs the EU average of 8.1%)²⁴, with 46.8%²⁵ of them from Bosnia and Herzegovina. Croatia has ratified the Global Convention on the Recognition of Qualifications in Higher Education²⁶, and has increased significantly its number of studies in English to improve internationalisation. A new Act on Recognition and Assessment of Foreign Education Qualifications, containing also provisions on automatic recognition, entered into force in June 2022. The ENIC/NARIC office has

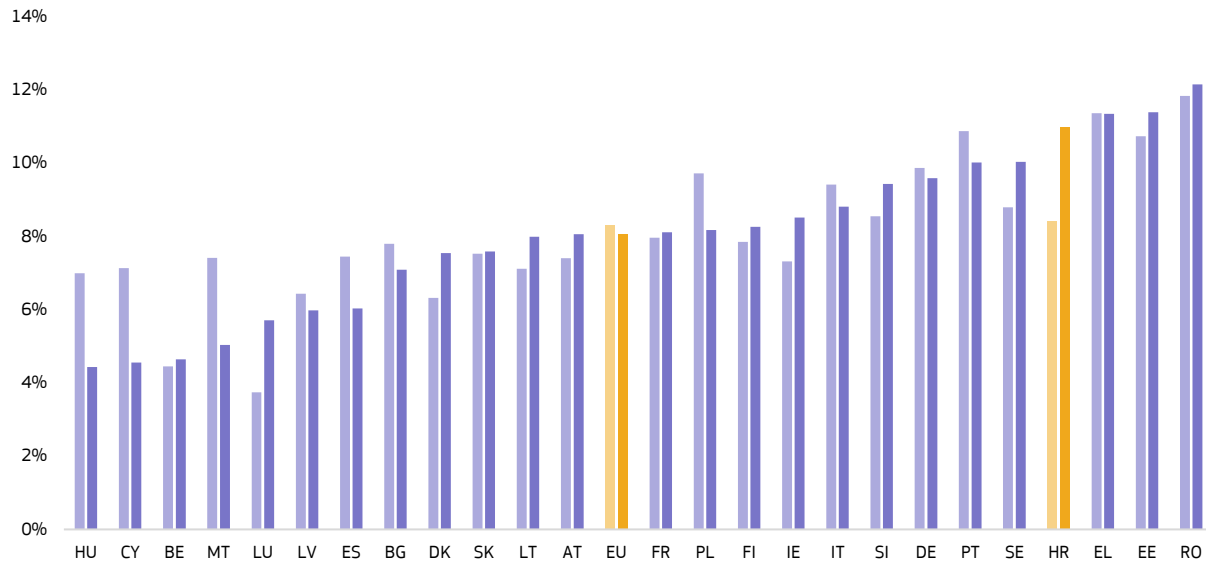
²³ Eurostat [educ_uae_grad02].

²⁴ Eurostat [educ_uae_mobs03].

²⁵ Eurostat [educ_uae_mobs02].

²⁶ https://narodne-novine.nn.hr/clanci/medunarodni/2021_10_7_50.html

Figure 4: Female STEM graduates as a proportion of total tertiary graduates in 2015 and 2020 (%)



Source: Eurostat (UOE), [educ_uae_grad02].

created a webpage for Ukrainian refugees with information on the recognition procedures for enrolling in HE, continuing their studies or entering the labour market. If they have the necessary documents, they can start the recognition procedure; if not, the new Act on Recognition stipulates the assessment procedure resulting in a background document. Currently 36 HEIs receive students from Ukraine²⁷.

The repair of educational infrastructure damaged by the earthquakes is starting.

After a significant delay using the Solidarity Fund to repair infrastructure damaged by the earthquakes, two calls for tenders were published for the repair of HEIs, with the 2nd also including schools and preschools. The first call will provide for the repair of 27 HEIs and research institutions. The second is still being contracted.



Box 2: State scholarships for students of lower socio-economic status

To ensure equal access to higher education (HE), 10 000 state scholarships are to be annually awarded to students from a low socio-economic background or with disabilities over a period of 5 academic years (50 000 in total during May 2017 – December 2022, of which 29 000 financed from ESF). Postgraduate students with disabilities and in alternative care without other financial support are also eligible for these scholarships. The aim is to make higher education more socially inclusive and increase its completion rate. The share of students who are awarded scholarships and complete their studies or are enrolled in the 4th year of them is much higher (21.15%) than that of students with similar characteristics who do not receive such support. The conditions for obtaining a scholarship are specified in the Ordinance on the Conditions for and Manner of Exercising the Right to a State Scholarship based on Socio-economic Status. So far, 49 196 scholarships have been awarded.

<https://mzo.gov.hr/istaknute-teme/odgoj-i-obrazovanje/visoko-obrazovanje/drzavne-stipendije/drzavne-stipendije-za-studente-nizeg-socio-ekonomskog-statusa/1563>

²⁷ <https://www.azvo.hr/en/enic-naric-office/ukrajina>

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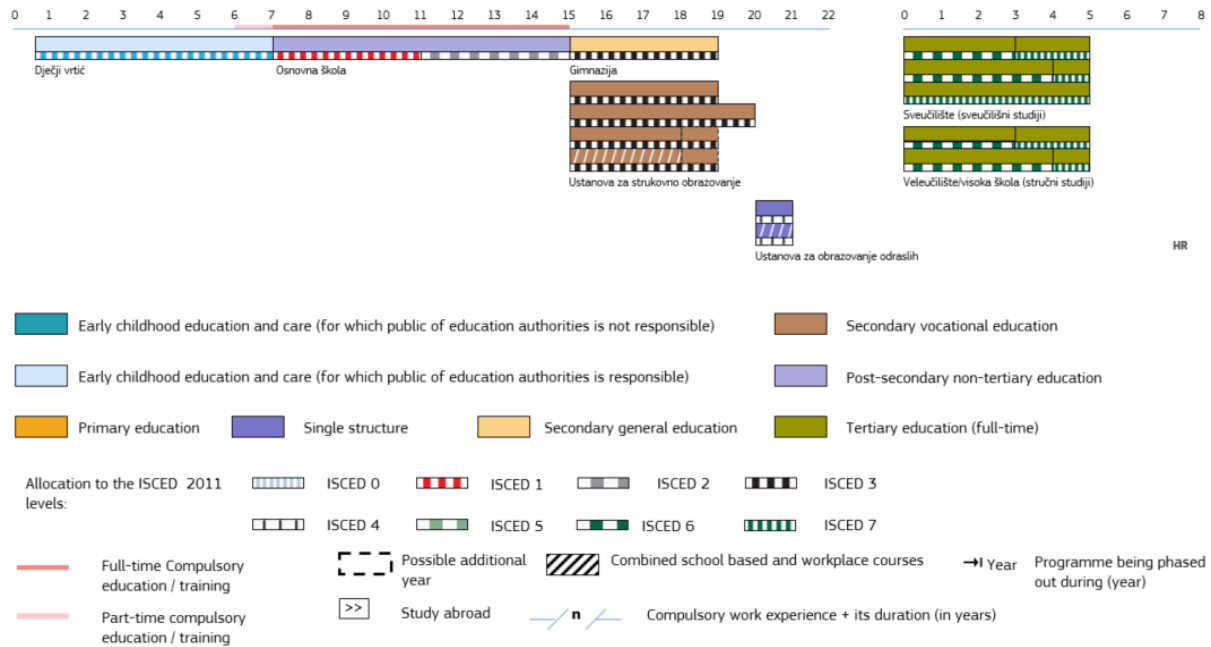
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Annex I: Key indicators sources

Indicator	Source
Participation in early childhood education	Eurostat (UOE), educ_uae_enra21
Low achieving eighth-graders in digital skills	IEA, ICILS
Low achieving 15-year-olds in reading, maths and science	OECD (PISA)
Early leavers from education and training	Main data: Eurostat (LFS), edat_lfse_14 Data by country of birth: Eurostat (LFS), edat_lfse_02
Exposure of VET graduates to work based learning	Eurostat (LFS), edat_lfs_9919
Tertiary educational attainment	Main data: Eurostat (LFS), edat_lfse_03 Data by country of birth: Eurostat (LFS), edat_lfse_9912
Participation of adults in learning	Data for this EU-level target is not available. Data collection starts in 2022. Source: EU LFS.
Equity indicator	European Commission (Joint Research Centre) calculations based on OECD's PISA 2018 data
Upper secondary level attainment	Eurostat (LFS), edat_lfse_03
Public expenditure on education as a percentage of GDP	Eurostat (COFOG), gov_10a_exp
Public expenditure on education as a share of the total general government expenditure	Eurostat (COFOG), gov_10a_exp

Annex II: Structure of the education system



Source: European Commission/EACEA/Eurydice, 2022. The Structure of the European Education Systems 2022/2023: Schematic Diagrams. Eurydice Facts and Figures. Luxembourg: Publications Office of the European Union. *Notes:* Start of primary education (ISCED 1) depends on child's birthday. Children born between January and April start primary school in calendar year in which they turn 6; those born from April to December when they are 7 years old.

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