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Education and Training Monitor 2019

Czechia
Volume 2 of the Education and Training Monitor 2019 includes twenty-eight individual country reports. It builds on the most up-to-date quantitative and qualitative evidence to present and assess the main recent and ongoing policy measures in each EU Member State. It therefore complements other sources of information which offer descriptions of national education and training systems.

Section 1 presents a statistical overview of the main education and training indicators. Section 2 briefly identifies the main strengths and challenges of the country’s education and training system. Section 3 focuses on teachers and challenges of teaching profession. Section 4 looks at investment in education and training. Section 5 deals with policies to modernise early childhood and school education. Section 6 discusses measures to modernise higher education. Finally, section 7 covers vocational education and training, while section 8 covers adult learning.
1. Key indicators

<table>
<thead>
<tr>
<th>Education and training 2020 benchmarks</th>
<th>Czechia</th>
<th>EU average</th>
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<tr>
<td>Early leavers from education and training (age 18-24)</td>
<td>5.4%</td>
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<td>Tertiary educational attainment (age 30-34)</td>
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<td>Credit-mobile graduates (ISCED 5-8)</td>
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<td></td>
<td>ISCED 1</td>
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<td>€10 549</td>
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<td>Early leavers from education and training (age 18-24)</td>
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<td></td>
<td>Foreign-born</td>
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<td>Tertiary educational attainment (age 30-34)</td>
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<td></td>
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<tr>
<td></td>
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<td>85.5%</td>
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Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission’s Joint Research Centre from UOE data. Further information can be found in Annex I and in Volume 1 (ec.europa.eu/education/monitor). Notes: EU averages of 2009 PISA do not cover Cyprus; d = definition differs, u = low reliability, := not available, 12=2012, 14=2014, 15 = 2015, 16=2016, 17 = 2017.

Figure 1 Position in relation to strongest and weakest performers

Source: European Commission, Directorate-General for Education, Youth, Culture and Sport (DG EAC) calculations, based on data from Eurostat (LFS 2018, UOE 2017) and OECD (PISA 2015).
2. Highlights

- Czechia continues to make vocational education and training more relevant to the needs of the jobs market.
- Authorities are making good use of EU funds to support reforms.
- Inclusive education is progressing but measures targeted at Roma remain limited.
- The attractiveness of the teaching profession remains low.

3. A focus on teachers

The teaching profession is facing numerous challenges. The 2019 country-specific recommendation addressed to Czechia by the Council of the EU included the following: ‘Increase the quality and inclusiveness of the education and training systems, including by fostering technical and digital skills and promoting the teaching profession.’ (Council of the EU, 2019).

There are demographic challenges. The proportion of teachers under 40 is comparatively low in Czechia, while a high proportion is over 50. The ratio of female teachers is among the highest in the EU. There are increasingly attractive alternative career opportunities for women, putting at risk the attractiveness of teaching to women (Münich D., 2017). Pupils in primary education have increased and these higher numbers are moving into lower-secondary education. In 2017, the pupil-teacher ratio in primary education (19.1 to 1, against the EU average of 14.7) and the student-teacher ratio in tertiary education (18.4 to 1 v 15.4) were both comparatively high. The population of (mostly male) school heads is also ageing and there has been only a single applicant for half of all open posts. Often the incumbent applies for his/her own job again at the end of his/her mandate (CSI, 2018a). The Czech and Moravian Trade Union for Workers in Education (CMOS) reports that school heads feel they lack time to provide pedagogical and professional leadership to teachers due to their administrative burdens. They also refer to the lack of sufficient funds to evaluate and reward staff adequately.

Inspections and surveys among school heads indicate teacher shortages. In the absence of a teacher registry, teacher shortages can only be estimated. Shortages are reported in particular in primary education and to a lesser extent for English, physics, information and communications technology (ICT) and mathematics. Shortages in primary education are partly linked to the current demographic peak in children of that age; as these start entering lower secondary education in the years to come, subject-specific shortages at that level may worsen.

Despite recent pay rises, the salaries of teachers and school heads remain very low, both compared with other tertiary-educated workers and by international standards (see Figure 2 below). In 2016, 85% of 30-49 year-olds with tertiary education had a salary higher than that of primary education teachers of the same age (Münich D., 2017). Salary progression over the career is rather flat (European Commission/EACEA/Eurydice, 2018a). Salaries in the public sector overall increased by more in 2014-2016 than teachers’ salaries, weakening the impact of teacher pay rises in making the profession more attractive (Münich D., 2017). Control of pay awards is shared between central and local levels. Excellent teaching performance may lead to a salary supplement. Compensation for specialised tasks requiring continuing professional development (CPD) may reach up to 50% of the statutory salary. Such tasks include coordinating ICT, contributing to the coordination of school educational programmes, and organising activities related to environmental education.

In 2018, the government has declared that teachers’ and non-teaching staff’s average salaries in 2021 should be brought up to 150% of their 2017 level. To make teaching more attractive, long-term political commitments are necessary.

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1 Eurostat, UOE, 2017. Online data code: educ_uoe_perp01
2 Eurostat, UOE, 2017. Online data code: educ_uoe_perp04
3 The data on full-time equivalent teachers in Czechia is gathered at aggregated school level and there is no teacher registry. As a number of teachers teach part-time at more than one school, there is no precise information on the number of teachers.
**Box 1: Attractiveness of the teaching profession and teachers’ satisfaction**

The attractiveness of the profession to talented young people remains low. There are indications that graduates of initial teacher education programmes who opt to enter the profession may not be among those who perform best (Münich D., 2017). A study shows, among other things, an increase in the proportion of young teachers with lower reading literacy (Krajcova J., Münich D., 2018). This may contribute to a divergence in the quality of the education received in different classes, schools or regions (ibid.). Many talented young teachers leave the profession early, often for financial reasons (Münich D., 2017). This calls for measures to address the general OECD’s findings that, to promote teaching as a career for top-performing students, job quality matters at least as much as pay (OECD, 2018a).

At the same time, the 2018 OECD Teaching and Learning International Survey (TALIS) finds that the proportion of teachers satisfied with their job is high, at 89.6% (EU average: 89.5%) (OECD, 2019). It remains stable in teachers with 5 years of working experience. Overall, 74.0% of teachers say that if they could decide again, they would still choose to become a teacher (EU average: 77.6%). Fewer teachers with more than 5 years of experience (73.3%) feel this way than novice teachers (77.3%) (respective EU averages: 76.4% and 83.7%). TALIS also found that 16.0% of Czech teachers believe that teaching is valued in society (EU average: 17.7%).

**European Social Fund (ESF) projects are supporting induction programmes for beginning teachers — including training of their mentors — and CPD.** In May 2019, the government

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* In 2018, 23 Member States participated in TALIS: Austria, Belgium fr, Belgium nl, Bulgaria, Croatia, Cyprus, Czechia, Denmark, England (UK), Estonia, Finland, France, Hungary, Italy, Latvia, Lithuania, Malta, the Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden. TALIS 2018 covers lower secondary teachers and school leaders in mainstream public and private schools.
approved an amendment to the Act on pedagogical staff to introduce a two-year induction period for beginning teachers. This has happened in the absence of a career system for teachers, after one was prepared but then abandoned in 2017. Such strengthened support for beginning teachers could help reduce the high rate of those who drop out in the first few years.

Box 2: Support for the Professional development of teachers and headmasters (SYPO) project

The goal of this project, co-financed by the European Social Fund (ESF), is to design a new system promoting systematic professional development with a view to improving educational outcomes. It aims to be needs-based, practically-oriented and based on the latest scientific findings, and to promote sharing of experience.

SYPO involves the creation of peer networks focusing on didactics of different subjects. They will be piloted at national, regional and local levels. A network of regional ICT methodological workers will be set up too.

The project was launched at the beginning of 2018 and will run until 2022, supported by EUR 13.5 million from the ESF.

In the highly decentralised Czech education system, CPD is essentially governed at school level, where the staff’s CPD plan is defined. Participation in CPD is a professional duty. While no minimum number of compulsory hours is laid down, the law provides for up to 12 working days a year for CPD (European Commission/EACEA/Eurydice, 2018b). The Czech School Inspectorate found in 2017-2018 that 78% of basic school teachers inspected had attended CPD. The CPD mainly covered subject-related content (52%), then teaching methods (39%), teaching for key competencies (28%) and implementation of inclusive education (see section 5 below) (24%) (CSI, 2018b). The 2018 OECD Teaching and Learning International Survey (TALIS) found that half of Czech teachers believe that CPD is restricted by schedule conflicts (50.8% v EU average of 52.4%). Overall, compared to the EU average a relatively low proportion of teachers believe that CPD is hindered by barriers. For instance, 22% of Czech teachers consider that the CPD offer is not relevant (EU average: 38.9%) and only 15.1% complain about a lack of employer support (EU average: 26.4%).

4. Investing in education and training

General government expenditure on education as a share of GDP was 4.6% in 2017, similar to the EU average. The increase in real (inflation-adjusted) government expenditure on education over 2010-2017 was comparatively high at 3.4% (EU average: 0.2%)5. Spending varied between education levels, largely linked to the demographic changes in intakes by age group, in a system of (mostly) per capita-based funding. This increase happened over a period of particularly strong GDP growth and the share of government expenditure on education did not evolve much, oscillating between 11.3% and 12% in 2013-20176. Government expenditure on education as a share of GDP decreased from 5.1% in 2013 to 4.6% in 2017. The 2019 budget for the reform to make education more inclusive increased from 2018 (see section 5 below).

The reform of the funding system for regional education has been delayed again until January 2020 aiming at a better preparedness. The reform aims to switch from per-capita funding to funding based on the number of hours taught, and it increases the possibilities to split classes (European Commission, 2018).

5 Eurostat, Classification of the functions of government (COFOG).
6 European Commission, Directorate-General for Education, Youth, Sport and Culture (DG EAC) calculations based on Eurostat, gov_10a_exp and nama_10_gdp

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6 European Commission, Directorate-General for Education, Youth, Sport and Culture (DG EAC) calculations based on Eurostat, gov_10a_exp and nama_10_gdp
Morava. It is estimated that only about 34% of Roma from the age of 4 attend ECEC (FRA, 2016). Figure 3 shows the participation rates for children between 3 and 6 in 2016, by socio-economic background. While a right to attend ECEC for all children aged 3 and over in their catchment area was established in 2018, its practical implementation depends on the availability of places. The full support of municipalities is, therefore, vital to ensure this right is implemented and to increase attendance rates. Participation by children under 3 remains, at 6.5% in 2017, far below both the 34.2% EU average and the 33% target set by EU leaders in 2002. This is partly due to insufficient capacity. The previously announced entitlement to a place for children aged 2 from 2020 was abandoned in 2018.

![Figure 3 Participation in formal childcare or education of children between 3 and minimum mandatory school age, by socio-economic background (2016) - % over the population aged 3 to minimum mandatory school age](image)

Czechia has been using support from the European Social Fund (ESF) to substantially increase ECEC places, but major inequalities in provision have emerged. Public kindergartens run by municipalities and so-called children groups and micro-crèches (currently co-funded by the ESF and run by the Ministry of Labour and Social Affairs), which partly target children from similar age groups, operate under very unequal conditions. The children-to-adult ratio is much more favourable in the latter (24 children to 3-4 adults) than in the former (up to 28 to 1). Funding per child in children groups is CZK 90 000 compared to CZK 51 000 in kindergartens (respectively around EUR 3 500 and EUR 2 000). The Czech School Inspectorate argues that classes with up to 28 children per adult do not allow individual needs to be met, especially those of children with special needs (CSI, 2018b). The Long Term Policy Objectives of Education and Development of the Education System 2019-2023 plans a gradual decrease in the number of children in kindergartens, to 20 per class. The 2020 funding reform (see section 4) is likely to motivate a reduction in the children-to-adults ratio in ECEC as kindergartens will not be funded on a per capita basis any more, but rather based on the number of hours taught.

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7 Eurostat, UOE, 2017. Online data code: educ_uoe_enra17
The rate of early school leaving declined to 6.2% in 2018, after an increase over previous years. This rate was lower than the 10.6% EU average, while still above the national Europe 2020 target of 5.5%. The rate and its evolution varied widely between regions, the most notable case being Severozápad where the 2017 rate of 13.8% further increased to 15.6% in 2018. A study showed that young people dropping out of school are attracted by the current easy access to paid employment (Bičáková, A. and Kališková, K., 2018). However, they often end up in low-paid, low-quality and short-term jobs. Incentives to attract young people back to education, as well as prevention measures, are under discussion. A study supported by the EU’s structural reform support programme was launched in 2019 to explore how to reduce regional inequalities in education. It will make recommendations focusing on improving communication between families, schools and other service providers.

The authorities are continuing to take action to reduce inequalities in educational outcomes linked to pupils’ socio-economic backgrounds (European Commission, 2018). For pre-primary education, actions include ESF-supported teacher training, extra-curricular activities, promotion of cooperation with parents, and career counselling (Eurypedia, 2019a). In line with the 2016 reform to make education more inclusive, the authorities adopted a second action plan for inclusive education, covering 2019-2020. The plan aims to implement desegregation measures for schools where more than half the pupils are Roma, introduce anti-bullying measures and strengthen monitoring by the School Inspectorate. It will guide the implementation of ESF-supported projects. Tackling regional disparities through tailored measures will be key to its success.

Positive initial results of the inclusive education reform still need to be confirmed, in particular for the education of Roma children. The Ministry of Education, Youth and Sports is focusing on ensuring that compulsory education from age 5 is applied, in particular in deprived areas. The ministry is also working on further harmonising diagnostic tools used in counselling centres across the country. The 2019 budget for inclusive education was increased from CZK 5.4 billion in 2018 to 7.2 billion, a substantial increase which, however, may not be sufficient to cover all requests from schools. The authorised number of assistants per class will decrease.

While more teacher resources are being allocated to high-need schools, there are no measures to allocate experienced teachers to disadvantaged schools. At the same time, the OECD notes a significant positive association between teacher experience and science performance in Czechia (OECD, 2018a).

The National Institute for Education is revising the framework curricula for pre-primary, primary and secondary education (NUV, 2019). One aim is to better focus on skills needed for future jobs. Another is to strengthen the guidelines from central level by defining expected learning outcomes at more educational stages than before. This will strengthen central governance in a still highly decentralised system (Eurypedia, 2019b). Revised curricula will build on the strategy for education 2030 which will define expected competences of pupils after 2030.

The proportion of young people aged 16-19 who report they have above-basic digital skills improved substantially between 2015 (41%) and 2017 (52%), nearly reaching the EU average (57%). An EU-funded call to support implementation of the strategy for digital education of 1 was launched in autumn 2018. It will enable the creation of new resources, the provision of methodological and technical support for the use of digital technologies in education, training of teaching staff and the promotion of innovative teaching methods (Eurypedia, 2019b). The digital education strategy faced delays in equipping schools with digital infrastructure and providing support materials and training for teachers (European Commission, 2019).

6. Modernising higher education

The past decade has seen a rapid rise in the tertiary education rate together with an increase in the dropout rate. In 2018, the proportion of 30-34 year-olds with tertiary education was 33.7% (EU average: 40.7%), above Czechia’s 32% national target under Europe 2020. Getting each generation to reach a higher education level is challenging. Only 18% of children whose parents did not attain tertiary education obtain a tertiary degree (OECD, 2018b). The projected increase in population within the age span concerned by higher education will, within a few years, require efforts on funding and capacity if growth is to be continued. 37% of students in bachelor programmes drop out in their first year — although a proportion register in another
programme later — and more than one third of students do not complete their studies (MEYS, 2015). The authorities are taking measures to reverse the trend. Among the funding criteria for higher education institutions, in 2018 the Ministry of Education, Youth and Sports introduced a new criterion linked to degree completion (European Commission, 2018). Positively, this is triggering remedial action from such institutions. The employment rate of recent tertiary graduates remains very high at 89.6% in 2018.

The National Accreditation Agency established with the 2016 higher education reform has already granted a number of institutional accreditations. Stronger internal quality assurance is becoming a reality in the institutions concerned. The reform also aimed to broaden the range of programmes offered, including by encouraging the creation of professionally-oriented study programmes. Nearly 15% of programmes newly accredited or in the process of accreditation by end-2018 were such professionally-oriented programmes, showing that there is some demand for them.

7. Modernising vocational education and training

Total enrolment in upper secondary VET declined very slightly to 72.4% in 2017 but was still well above the 47.8% EU average. The employment rate among recent VET graduates in 2018 increased to 87.7%, well above the EU average of 79.5%.

Czechia is continuing to make VET more flexible and more relevant to the needs of the jobs market. The 2018 Amendment of the School Act obliges schools and to cooperate with employers in designing curricula, providing practical training, participating in final examinations and providing placements in companies for teaching staff. The ESF-funded Modernisation of vocational education and training project, launched in 2017, has so far introduced 365 modules with the aim of improving transferability between various pathways in initial and continuous VET and with qualifications in the National Register of Qualifications. In 2017/2018 a pilot project including elements of dual training has started in the Moravia-Silesia Region. A revision of the vocational parts of upper secondary curricula is on-going.

In October 2018 the government adopted the Digital Czechia strategy. The implementation will build on the strategy for digital education 2020. The latter focuses on opening education to new learning methods using new technologies, improving pupil’s competences to work with information and digital technologies and improving pupils’ computational thinking.

8. Developing adult learning

The likelihood of adults in Czechia frequently updating their knowledge and skills through adult learning is rather low. In 2018, only 8.5% of adults aged 25-64 had had a learning experience in the last 4 weeks (EU average: 11.1%). However, only 6.1% of Czech adults had at most a low qualification (EU average: 21.9%). In 2017 around 5 300 adults aged 25 or above acquired an upper-secondary qualification. This represents less than 0.02% of the nearly 367 000 25-64 year-olds with only a low level of educational attainment. At the same time, there are few job opportunities for low-qualified people — in 2017 there were 287 000 jobs in elementary occupations. The 52.2% of low-qualified adults in employment in 2017 was below the EU average of 58.4%.

A number of projects focus on general upskilling and the digital skills of adults. The project UpSkilling CZ (now going through an approval process) will address the implementation of the 2016 Council Recommendation on upskilling pathways. The project will develop an online tool to assess basic skills and a tool offering relevant learning opportunities. Close cooperation will be ensured between the key players, i.e. the Ministry of Education, Youth and Sports, the Ministry of Labour and Social Affairs and the public employment services. E-learning courses, guidebooks and other methodological materials will be developed. The updated Digital Czechia strategy also includes measures for adults. These seek notably to improve adults’ digital literacy, digital skills in small and medium-sized businesses and support for teleworking by using digital technologies and addressing digital exclusion. In addition, the strategy defines the goal of ‘readiness of citizens for labour market changes, education and development of digital skills, retraining of the workforce, necessity to further educate workers and the creation of new education programmes’.
There are important developments in continuing VET too. People with vocational certificates and 5 years of professional experience will have the option of taking an exam leading to a master craftsman qualification. It is planned to develop about 45 such qualifications. The Chamber of Commerce will have a key role in facilitating cooperation between professional craft associations and vocational schools that will participate in the new system.

9. References


Annex I: Key indicator sources

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<td>Underachievement in reading, maths, science</td>
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Learning mobility:
- Degree-mobile graduates
- Credit-mobile graduates

JRC computation based on Eurostat / UIS / OECD data

Annex II: Structure of the education system


Comments and questions on this report are welcome and can be sent by email to:
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Executive summary

Highlights of the cross-national analysis
Highlights of the country analysis
Executive Summary

Highlights of the cross-national analysis

Among all factors in the school environment, teachers are considered to have the greatest impact on students’ learning outcomes. At the same time, more than 60% of public expenditure in education in the EU is spent on teachers. Any policy effort seeking to improve educational outcomes – or the efficiency of education and training – is bound to take a close look at the role of teachers and look for ways to help teachers excel in their demanding profession. New evidence from the OECD TALIS survey sheds more light on teachers. The recent survey data inform the 2019 Education and Training Monitor, which contains a dedicated analysis of school teachers in the EU. Being a unique source of information on teachers’ motivations, lifelong learning and careers, the new evidence from TALIS 2018 can help policy-makers harnessing the full potential of teachers by preventing and addressing challenges.

After the teacher-dedicated part, the 2019 Monitor sets to analyse the existing targets adopted by the Council of the European Union under the strategic framework for European cooperation Education and Training 2020 ('EU benchmarks'). This part of the report presents latest data on participation in early childhood education and care; early leaving from education and training; tertiary educational attainment; underachievement in basic skills; employment rate of recent graduates; adult learning; and learning mobility in higher education. Next, the 2019 Monitor offers analysis on education indicators used in other well-established or emerging priorities, including entrepreneurship education; digital education; multilingualism. The report concludes with a section analysing public investment in education and training.

At the core of learning: the teachers

Across the entire EU, education systems are confronted with a number of challenges relating to teachers. Several countries already face or are about to face shortages of teachers, either across the board or in particular subject areas (typically science, technology, engineering and maths); or in particular geographical areas. In view of the proportions of teachers aged 50 or plus, the 23 EU countries participating in TALIS 2018 will have to renew about one third of their teaching population in the next decade or so. At least five EU countries will have to renew around half of their secondary school teachers in the same period (Italy, Bulgaria, Lithuania, Estonia, Greece and Latvia; and the same applies to primary school teachers in the former three countries).

Successfully renewing the teachers’ population requires acting upon key factors such as the number of students deciding to embark on teacher education, the number of new teachers starting in the job and the number of teachers stopping to work. To address this challenge, there is a need to improve the attractiveness of the profession and offer good working conditions for sustained professional activity.

According to survey data, only 18% of lower secondary school teachers in the EU consider their profession as valued by society; and their proportion lowers with longer years of teaching experience. Similarly, the share of teachers would still choose to work as teachers, declines significantly, in several EU countries, among more experienced teachers. Overall, there is a specific challenge in attracting men into teaching; and particularly so for primary and pre-primary education, where the proportion of female teachers reaches 85% and 96% respectively.

Salaries of teachers do not always compare favourably to salaries of other equally qualified professionals. Among EU countries with available data, in four countries (Czechia, Slovakia, Italy and Hungary) teachers at all education levels earn less than 80% of what other tertiary-educated workers do. In most Member States, primary (and especially pre-primary) teachers earn less than secondary level teachers. In secondary education, teachers’ statutory salary tends to be higher at upper-secondary level than at lower-secondary level.

There are also shortages of teachers with specific profiles. Nearly 40% of principals in lower secondary schools in the EU declare that the shortage of teachers teaching students with special

* DG EAC calculation on Eurostat’s general government finance statistics, reference year 2017 (gov_10a_exp).
needs hinders the quality of instruction at their school. Principals also point to shortages of teachers who have competences in teaching in a multicultural or multilingual setting (the largest shortages are in France, Italy and Portugal); and competences in teaching students from socio-economically disadvantaged homes (largest shortages in France, Italy, and Portugal). This second type of shortage is driven by change (technology; diversity in classrooms) and points to a need to improve training (initial and continued).

Furthermore, against an evolving technological and demographic background, teachers need new skills more than ever, including for dealing with cultural and linguistic diversity in the classroom, teaching in a technology-rich environment, and adopting collaborative teaching practices. While 92% of teachers report regular participation in professional development, 21% of them declare a further need for training on teaching students with special needs; 16% report a further need for training on the use of information and communication technology (ICT) for teaching; and about 13% report a further need for training in teaching in multilingual and multicultural environments.

**Growing participation in education and educational attainment: main achievements in the last decade**

In the last decade, the EU experienced a massive increase in tertiary educational attainment and met its target of having at least 40% tertiary graduates in the 30-34 year-old population – up from 32% in 2009. Despite this increase, there are clear patterns of inequalities in educational attainment. For example, on average, women's tertiary educational attainment (45.8%) is higher than men's (35.7%) – and the gap has been continuously increasing over recent years. Typically, women complete tertiary education earlier than men do. Also, young adults born in the reporting country or elsewhere in the EU, graduate more than their peers from non-EU countries (41.0% against 35.8% respectively). Yet, an overview of policy measures to broaden tertiary educational attainment shows that less than half of EU countries set specific targets to support participation in higher education of under-represented groups, such as, for example, people with disabilities, migrants or students from disadvantaged background.

The attendance of children from the age of 4 in early childhood education has expanded, and is, by now, almost universal. There are also high rates of participation in early childhood education by children from the age of 3. Yet the 90% participation rate for the general population decreases to 77.8% in the group of children at risk of poverty or social exclusion. Experiencing education in the early years of life has been found to be beneficial for better learning outcomes later on in life, and particularly so for children from socio-economically disadvantaged homes. The challenge of ensuring equal access to education in the early years needs to be addressed.

Since the EU cooperation framework in education and training started in 2009, the proportion of young adults leaving education and training without obtaining at least an upper secondary qualification has considerably reduced. Nonetheless, at EU level this process came to a halt after 2016. Comparing 2016 and 2018, there was progress on this indicator in large countries such as Spain or Poland, as well as in other countries such as Romania, the Netherlands and Portugal. However, this was countered by negative developments in other countries – for example, Italy, Sweden, Denmark, Slovakia, and Estonia (in descending order by size of population). Furthermore, in the past 2 years, early school leaving rates increased for both young adults born in the EU (between 2016 and 2017) and those born outside (between 2017 and 2018). Reducing early leaving remains a priority and a target of the EU, as those who leave education and training before obtaining an upper-secondary diploma will struggle with lower employment rates and lower rates of participation in adult learning.

**The main challenge for the next decade: improving learning outcomes at school, and increasing adult participation in learning**

Participation in education can be measured by data on enrolments, qualifications, or performance test. The latter show that reducing the number of underachieving 15-year-olds to meet the EU
Developing competences for future life and employment

Research has long established the positive outcomes of being able to study abroad. Transnational learning mobility is associated with future mobility, higher earnings, and lower risk of unemployment. ‘Making learning mobility a reality for all’ is one of the objectives of the European Education Area. In 2017, 11.6% of higher education graduates ‘were mobile’, meaning that they studied partially or entirely abroad. About 8% of them were abroad for short-term periods, while 3.6% graduated in another country. The Erasmus+ programme supported about half of the short-term study periods spent abroad by EU graduates. Overall, Luxembourg, Cyprus, the Netherlands, and Finland (in descending order) have high shares of mobile graduates. As to inward mobility, capturing the volume of students coming into a country for a period of study, it can be read as a measure of the attractiveness of the education system. On this indicator the United Kingdom leads the way – both in percentage of inward graduates and in absolute numbers.

There are a number of key competences (or combination of knowledge, skills and attitude) that can support an individual’s life chances and also easier transition to the labour market and career job prospects. For example, participation in entrepreneurship education increases the likelihood of engaging in entrepreneurial activities later in life by 35% on average. Of this 35%, a 7 percentage point increase is due to improved self-perceptions by participants of their entrepreneurial skills. However, available data show that participation in entrepreneurship education in the EU is mostly optional, and only a handful of countries make it compulsory.

Furthermore, the potential of digital technologies in improving educational practices is being held up by challenges that education systems still face. To successfully undergo digital transformation, schools need to support teachers’ digital competence for pedagogical use, design innovative pedagogical approaches, and provide digital equipment as well as better connectivity. Capacity

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9 Data for this benchmark come from the OECD PISA survey. Students scoring below level 2 are considered underachievers.

10 In November 2017, EU leaders met in Gothenburg to discuss the social dimension of Europe, including education and culture. As part of the debate on the Future of Europe, the Commission set out its vision and concrete steps to create a European Education Area by 2025. One of the main objective of the European Area of Education is ‘making mobility a reality for all’, by building on the positive experiences of the Erasmus+ programme and the European Solidarity Corps and expanding participation in them, as well as by creating an EU Student Card to offer a new user-friendly way to store information on a person’s academic records. Other measures to boost mobility under the European Education Area include initiating new processes to ensure the mutual recognition of diplomas; improving language learning; creating a network of European universities; and supporting teachers and their mobility.
building for digital assessment needs to be implemented for learners, teachers, schools and education systems.

Moreover, speaking several languages can increase individuals' employment prospects. Overall in Europe, between 2005 and 2015, the number of pupils who experienced compulsory language learning grew both in primary and secondary education. As to the former, 83.7% of primary school children learned at least one foreign language in 2014, against 67.3% almost a decade before. At lower secondary level, 59% of pupils learned two languages in school in 2015, against 46.7% in 2005.

After reaching the lowest point in 2013 (75.4%), the employment rate of recent graduates has been continuously increasing in the EU. With 81.6% in 2018, the rate is now close to the pre-crisis 2008 level of 82%. However, some countries still suffer from the effects of the crisis on employability of recent graduates – in particular Greece and Italy, where employment rates of recent graduates are around 55%. As compared to secondary graduates holding a vocational qualification, those with a general orientation qualification have a less easy transition into the labour market (66.3% against 79.5%). The employment rate of tertiary graduates was at 85.5% in 2018.

**Public investment in education**

In 2017, EU Member States invested, on average, 4.6% of their gross domestic product (GDP) in their education systems. This proportion has been slightly but continuously decreasing in the last few years, down from 4.9% in 2014. On average, EU countries spend about one third of their public expenditure for education on pre-primary and primary education; 41% on secondary education; and 15% on tertiary education. Looking at different education sectors, real expenditure on secondary and post-secondary education decreased (-1.3%, between 2016 and 2017) and increased in pre-primary and primary education (+ 1.4%), as well as tertiary education (+ 1.7%). So far trends in education expenditure have been largely independent from demographic developments, with the partial exception of expenditure on tertiary education. Due to the predicted school-age population decline in many EU countries, even constant spending on education is likely to result in an increase in spending per student.
Highlights of the country analysis

**Austria**
To avoid teacher shortages, Austria needs to attract enough students into initial teacher education and improve continuing professional development. Investment in higher education aims to improve the study environment. Improving digital competence is a priority in the education and training system. Discontinued recent reforms may weaken efforts to integrate students with migrant backgrounds and to improve education outcomes of students from a socially disadvantaged background.

**Belgium**
The Flemish Community (BE fl) will implement reforms at all levels of education, including dual learning, starting in September 2019. The French Community (BE fr) will also implement school reforms, starting with changes to governance, then the new extended common curriculum and reforming initial teacher education from September 2020. Education spending in Belgium is among the highest in the EU, but educational outcomes are comparatively low, suggesting room for increased efficiency and effectiveness. To reduce inequality and improve outcomes, teachers need more support to manage diversity in the classroom. Tertiary educational attainment is high but disparities remain between regions and groups.

**Bulgaria**
The modernisation of the education and training system continues while quality, labour market relevance and inclusiveness remain challenging. Demographic trends and rising skill shortages suggest that Bulgaria needs to invest better in the skills of its current and future workforce. The need to upskill and reskill the adult population is high while participation in adult learning is low. The status of the teaching profession is low, and the teacher workforce is ageing. Salaries are being increased as a means to boost the attractiveness of the profession. Steps have been taken to increase the labour market relevance of vocational education and training (VET).

**Croatia**
Pilot implementation of curricular reform and ambitious preparations for full implementation are under way. Reforms are under way in vocational education and training. Participation in early childhood education and care is held back by shortages of teachers and places. Plans to expand the very short average instruction time could help to improve low education outcomes.

**Cyprus**
The teaching profession is highly attractive. Reforms to upgrade it are promising but need to be sustained and expanded. Reforms are implemented to foster high-quality public early childhood education and care. However, provision is insufficient for the early years. Tertiary education attainment has risen further but underutilisation of skills remains a challenge given the specific features of the Cypriot labour market. Measures have been taken to upgrade vocational education and training and adult learning, but attractiveness of both sectors and participation in them remain low.

**Czechia**
Czechia continues to make vocational education and training more relevant to the needs of the jobs market. Authorities are making good use of EU funds to support reforms. Inclusive education is progressing but measures targeted at Roma remain limited. The attractiveness of the teaching profession remains low.

**Denmark**
Changes to university education are making it more flexible and labour market friendly, but the need for more STEM graduates remains. The number of apprenticeships has been increased and measures are being taken to promote adult learning. Reduced education spending is having an impact on schools and universities. There is considerable local variation in the education performance of young people from migrant backgrounds.

**Estonia**
Estonia is developing an education strategy for 2021-2035, aiming to bring gradual changes to the system to respond to changes in the labour market and society. Due to demographic trends and
the limited responsiveness of the education and training system to labour market needs, aligning skills supply and labour demand remains a challenge. The ageing of the teaching population coupled with the low attractiveness of the teaching profession are a long-term challenge for the functioning of the education system. Participation in adult learning has reached a record high but the need for upskilling and reskilling remains high.

**Finland**
While teaching is a prestigious and attractive profession, there are teacher shortages for kindergarten and special needs education. There has been some growth in education inequalities, and spending on education has fallen. New policy measures aim to improve the quality, effectiveness and internationalisation of higher education. Demand for graduates in Information and Communications Technology (ICT) is high and difficult to meet. Implementation of vocational education and training reform is ongoing, and reforms are planned to foster adult learning.

**France**
Work continues on improving educational outcomes and reducing inequalities, with support for teaching staff and funding measures. A new law on education extends the length of compulsory education and training to 3-18. Authorities are faced with the challenge of combining the rapid pace of reforms with the need to consult stakeholders to ensure good ownership and optimal impact. Implementation of the vocational education and training reform is in full swing.

**Germany**
Germany has announced significant investments in digitalisation, higher education and research in the decade ahead, but as well in school education. Germany is preparing for fundamental change in the skills of its workforce by carrying out digital initiatives and by refocusing the system of adult learning. The teaching workforce is aging and Germany faces a challenge to replace a large number of teachers. Young people from disadvantaged socio-economic and/or migrant backgrounds continue to lag behind in educational attainment.

**Greece**
The teaching profession is highly attractive in Greece but opportunities and incentives to improve professionalism are lacking. Education expenditure is lower than in most EU countries and largely spent on salaries. Early school leaving has been further reduced, particularly in rural areas. Finding employment after education remains difficult, including for highly qualified people. Measures to tackle the brain drain of tertiary graduates are being implemented but internationalisation of Greek universities is underdeveloped.

**Hungary**
Recent measures have raised the qualification levels of staff in early childhood education and care. Measures to reduce performance gaps between pupils have been strengthened. Admission conditions for entry to higher education have been made more restrictive. A new medium-term strategy aims to modernise vocational education and training and adult education.

**Ireland**
Ireland has a strong framework to ensure highly qualified teachers and further plans to meet emerging needs, including teacher shortages. Early school leaving has continued to decline, and participation in early childhood education and care is to be supported by new national schemes. Despite increased public spending on education, investment in higher education has not kept up with rising student numbers. Ireland implements initiatives aimed at upskilling and increasing adult participation in learning and training but the numbers of low-skilled adults in the population remain sizeable.

**Italy**
Italy invests well below the EU average in education, particularly in higher education. The share of teachers satisfied with their jobs is among the highest in the EU, but only a small share believe that theirs is a valued profession. Compulsory work-based learning in vocational education and training could help provide more structured training for apprentices and ease the transition from education to work. The level of tertiary educational attainment is low, and the transition from education to work remains difficult, even for highly qualified people.
**Latvia**  
Latvia has already met and exceeded its Europe 2020 education targets. Latvia should achieve further improvements in learning outcomes through the new competence-based curriculum, a stronger individual approach to students at risk and support for inclusion of students with special educational needs. Enrolment in vocational education and training (VET) is increasing and the employment rate of VET graduates is improving, although both remain below the EU average. In higher education, a gradual increase in investment and incremental changes in quality assurance are welcome, but the sector remains fragmented and international competitiveness low.

**Lithuania**  
Current trends in student population and teacher workforce call for a comprehensive strategy to manage teacher supply and demand. Improving key competences and relevant skills remains a priority at all levels. Further development of monitoring and evaluation systems may help improve the quality of education and training. Measures have been put in place to increase the education system’s overall efficiency, but further efforts are needed to ensure their implementation. Policy measures to address low participation in adult learning are lacking.

**Luxembourg**  
In 2018, more flexible entry requirements for the recruitment competition for early childhood and primary education teachers attracted more candidates. Pupils’ performance is heavily influenced by their ability to cope with the trilingual system. A reform of the orientation process at the end of primary education may have stopped a trend whereby many pupils were being guided to the lowest track in secondary education. Employment rates among recent graduates from all types of education are significantly higher than the EU average.

**Malta**  
Work is underway to improve the quality of teaching and the attractiveness of the profession. Improving the quality of investment in education and developing monitoring and assessment are key challenges. Increased participation in early childhood education and care and the new secondary system may help reduce the number of early school leavers. While participation in tertiary education is increasing, its labour market relevance is still a challenge.

**Netherlands**  
The early school leaving rate is below the Europe 2020 national target but has slightly increased. The Netherlands faces an increasing shortage of teachers, both in primary and secondary education. The 2019-2022 Quality Agreements aim to improve the quality of vocational education and training. Dutch tertiary education increasingly attracts foreign students.

**Poland**  
Early school leaving continues declining and participation in early childhood education and care among children under 3 remains low. The higher education reform has been launched, bringing major changes to the functioning of higher education institutions. Implementing the 2017 school system changes is causing organisational, financial and curricular challenges. Further challenges relate to teachers’ pay, emerging shortages, and initial and continuing training. Participation in adult learning remains low.

**Portugal**  
Teachers are satisfied with their jobs, but the ageing teacher population, the high proportion of non-permanent staff and weaknesses in induction and continuing professional development remain challenging. Investment to upgrade infrastructure is insufficient, particularly for early childhood education and care in metropolitan areas. Regional disparities in education outcomes, grade repetition and early school leaving rates are improving. Tertiary educational attainment has grown but business demand for ICT specialists exceeds supply. There is a significant proportion of low qualified adults while participation in adult learning remains low.

**Romania**  
Concrete ideas have been presented for major reform of the education and training system. Clear steps need to be taken for the implementation of the reform. Public spending on education is low in EU comparison, while the sector’s investment needs are high. Any major reform is likely to require additional funding linked to stronger equity and efficiency mechanisms. Better support for teachers – in particular by redesigning initial teacher education and strengthening continuing professional
development – can help improve quality and equity. Efforts were made to expand dual education. Participation in adult learning remains low despite the high need for upskilling and reskilling.

**Slovakia**
Slovakia is improving early childhood education and care, which is particularly positive for children from deprived families. Slovakia is taking a more strategic approach to lifelong learning, upskilling and reskilling. The early school leaving rate has continued increasing since 2010, approaching 14% in Eastern Slovakia. Investment in education and training is insufficient, and this is reflected in teachers’ still low salaries despite recent increases.

**Slovenia**
Enrolment in early childhood education and care is approaching the EU benchmark. The proportion of Slovenian upper secondary students enrolled in vocational education and training is one of the highest in the EU, and the employment rate of such graduates is high. There are enough new entrant teachers but large numbers are approaching retirement and shortages already exist in certain categories. Tertiary educational attainment is high, but the differences between men and women and the native-born and foreign-born population are large.

**Spain**
The teaching profession is attractive, but working conditions differ among regions and between public and private education systems. Private spending in education is significant, while public spending is static compared to GDP. Planned reforms, reflecting political uncertainties, have been slowed down. The process to modernise vocational education and training is ongoing. Adult participation in education is slowly rising.

**Sweden**
Tertiary educational attainment and graduate employment rates are high. The population’s digital skills are among the best in the EU. There is a serious teacher shortage, and a large number of teachers lack formal qualifications. School segregation and inequality are serious and growing concerns.

**United Kingdom**
Efforts are being made to tackle the high proportion of teachers leaving the profession. In England, school academies are growing in number but many are facing financial pressures. The consequences of Brexit for UK higher education are unclear but policy responses to address the potential loss of EU research funding and reduced student inflows will be needed. England will introduce new qualifications as part of ongoing reforms of upper secondary VET.
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