

# Education and Training Monitor 2019

# Cyprus



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# **Education and Training Monitor 2019**

Cyprus

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.

The Education and Training Monitor 2019 was prepared by the Directorate-General for Education, Youth, Sport and Culture (DG EAC), with contributions from the Directorate-General of Employment, Social Affairs and Inclusion (DG EMPL) and the Eurydice Network. DG EAC was assisted by the Education and Youth Policy Analysis Unit from the Education, Audiovisual and Culture Executive Agency (EACEA), Eurostat, Cedefop and the JRC's Human Capital and Employment Unit, Directorate Innovation and Growth. The Members of the Standing Group on Indicators and Benchmarks (SGIB) were consulted during the drafting phase.



# 1. Key indicators

	Cyprus		prus	EU average		
			2009	2018	2009	2018
Education and training 2020 bend	hmarks					
Early leavers from education and training (age 18-24)		11.7%	7.8%	14.2%	10.6%	
Tertiary educational attainment (age 30-34)			45.0%	57.1%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			84.7%	92.0% 17	90.8%	95.4% <sup>17,d</sup>
Proportion of 15 year-olds underachieving in:	Reading Maths Science		32.8% <sup>12</sup> 42.0% <sup>12</sup> 38.0% <sup>12</sup>	35.6% <sup>15</sup> 42.6% <sup>15</sup> 42.1% <sup>15</sup>	19.5% 22.3% 17.7%	19.7% <sup>15</sup> 22.2% <sup>15</sup> 20.6% <sup>15</sup>
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-8 (total)		81.1%	78.9%	78.3%	81.6%
Adult participation in learning (age 25-64)	ISCED 0-8 (total)		8.3%	6.7%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	35.1% <sup>17</sup>	:	3.6% 17
	Credit-mobile graduates (ISCED 5-8)		:	1.7% 17	:	8.0% 17
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		6.7%	5.7% 17	5.2%	4.6% 17
		ISCED 0	€4 282 <sup>12</sup>	€3 751 <sup>16</sup>	:	€6 111 <sup>15,d</sup>
	Expenditure on public and private institutions per student in € PPS	ISCED 1	€8 228 12	€8 326 <sup>16</sup>	€5 812 <sup>12,d</sup>	€6 248 <sup>15,d</sup>
		ISCED 2 ISCED 3-4	€9 767 <sup>12</sup> €10 055 <sup>12</sup>	€10 849 <sup>16</sup> €11 298 <sup>16</sup>	€6 937 <sup>12,d</sup> :	€7 243 <sup>15,d</sup> €7 730 <sup>14,d</sup>
		ISCED 5-4	€10 055 €9 866 <sup>12</sup>	€11 298 €9 164 <sup>16</sup>	€10 549 <sup>12,d</sup>	€7 730 ···
Early leavers from education and training (age 18-24)	Native-born		7.8%	6.2%	13.1%	9.5%
	Foreign-born		23.0%	13.9%	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born		49.4%	64.1%	33.1%	41.3%
	Foreign-born		36.5%	43.8%	27.7%	37.8%
Employment rate of recent graduates by educational attainment	ISCED 3-4		73.8%	68.4%	72.5%	76.8%
(age 20-34 having left education 1-3 years before reference year)	ISCED 5-8		82.9%	81.3%	83.8%	85.5%

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, , :=not available, 12 = 2012, 14= 2014, 15 = 2015, 16= 2016, 17 = 2017



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

- > 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 under-utilisation 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 the attractiveness of both sectors and participation in them remain low.

### 3. A focus on teachers

The teaching profession remains attractive and has started to become more competitive. Teaching attracts top university students and working conditions remain attractive despite facing specific challenges. Both aspects are key for high-performing systems (European Commission, 2018). The 2018 OECD Teaching and Learning International Survey (TALIS)<sup>1</sup> shows that the proportion of Cypriot teachers who believe teaching is a profession valued by society is the second highest in the EU (43.5% v 17.7% EU average) (OECD, 2019b). 91.2% of teachers are satisfied with their job (EU average: 89.5%), and they remain so after more than 5 years' working experience (91.3%). Job security is considered moderately or highly important by teachers in their decision to join the profession (80.1% v an EU average of 65.5%).

A combination of factors has led to a large supply of candidate teachers. Good working conditions, limited alternative job opportunities and a hiring system favouring candidates' seniority over merit have resulted in long waiting times for candidate teachers to be recruited<sup>2</sup>. This has also contributed to the gradual ageing of the teaching workforce. In addition, between 2008 and 2018 Cyprus saw a large influx of Greek teachers, with 10 327 secondary and 1 287 primary teachers applying for recognition in Cyprus to practice there<sup>3</sup>. The new recruitment system introduced in 2017 and based on competitive exams led to the hiring of 60 permanent and 278 substitute teachers in 2018. Recruitment from the old system will coexist until 2027. Exams for a next round of competitive hiring are scheduled for November 2019.

**Teachers' salaries and working conditions compare favourably to those of European peers.** Minimum and maximum statutory salaries are the same for teachers from pre-primary to secondary level. In 2016<sup>4</sup>, Cyprus reported actual salaries for teachers in primary and secondary education that were among the highest in the EU (European Commission, 2016). Teachers need fewer years in service than most other EU countries to reach the maximum salary. Working overtime<sup>5</sup> or additional responsibilities such as conducting extra-curricular activities are compensated through a reduction in teaching hours. Statutory teaching hours are in line with or (for primary education) slightly above the average for beginning teachers in EU peer countries. However, they decrease progressively<sup>6</sup> with years of service, thus reducing contact time for more experienced teachers. The student teacher-ratio in secondary education is below the EU average, while in primary education it is in line with the rest of the EU.

In 2018, 23 Member States participated in the TALIS survey: 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.

In 2018, the waiting list contained 3 266 pre-primary teachers, 4 060 primary teachers, 35 868 secondary (general) teachers and 5 019 secondary (technical/vocational) teachers.

In the same period 7 secondary and 2 primary teachers moved from Cyprus to Greece. Regulated professions database: http://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=homepage

In PPS. Latest available data as Cyprus did not participate in the 2017 or 2018 data collection.

In primary education, teachers are expected to replace colleagues for 10 teaching periods during a school year and in secondary 7.

From 29 teaching hours in primary education by 2 periods after 14 years and 20 years and from 24 in secondary education by 2 periods after 7, 16 and 20 years.



New teachers currently receive no induction training. Induction training is mandatory but has not been implemented since 2013 due to financial constraints. Previously, mentoring programmes paired new teachers with a senior teacher in their school during the first year of teaching, in addition to afternoon training courses. In view of Cyprus's low performance in basic skills (European Commission, 2017), the absence of induction training seems a lost opportunity given the ample evidence of its impact on the quality of teaching (European Commission, 2018) and student achievements (Ingersoll, 2011).

Continuing professional development (CPD) increasingly responds to the needs of teachers and schools but is insufficiently linked to career development and evaluation. Teachers can opt to attend as many seminars as they wish over the school year which are provided free of charge. One-off training events have limited impact on professional learning and consequently on students' outcomes (European Commission, 2018a). The 'teacher professional learning' framework therefore emphasizes schools-based training and action research methods. Schools select topics based on their assessment of needs, which are then addressed through different school-based training activities. While CPD is taken into consideration in promotions, it is insufficiently linked to career paths and teacher evaluation (see Box 1).

#### **Box 1: A new approach to teacher evaluation**

Effective teacher evaluation can positively impact the quality and job satisfaction of teachers as well as their feelings of self-efficacy (European Commission, 2018a). Cyprus's teacher evaluation system has changed little since 1976. In 2019, the Council of the EU addressed for the third time a country-specific recommendation to Cyprus calling on it to 'deliver on the reform of the education and training system, including teacher evaluation' (Council of the European Union, 2019).

The annual reports of school heads on teachers' performance are a largely administrative task. School inspectors, who observe teachers in the classroom, are formally expected to provide both summative and formative evaluation. So far, there is no link of evaluation to school effectiveness. Meta-level analysis of evaluation data with the purpose of informing and reforming the system is also missing.

A new proposal of January 2019 includes: formative assessment of teachers and of school evaluation; support for novice teachers, contract staff and substitutes; evaluation of evaluators; and continuous support for teachers. The proposal also sets out a new horizontal career step for teachers (Senior Teacher), to better profit from experienced teachers in the system. School heads should play a more substantial role in teacher evaluation. Lastly, the proposal provides for meta-evaluation to continuously improve the evaluation criteria and procedures.

While there is no single best model for teacher evaluation (OECD, 2018b), the new framework would provide many valuable measures. These include multiple evaluators, support for professional development, the link to student and school assessment, and evaluation of school heads and inspectors. However, other crucial elements are missing, in particular a clear competence framework for teachers and students. Given that the new system will be implemented by those already involved (inspectors, teachers, school heads), it is important to invest in training evaluators, school heads and teachers to be able to effectively observe and give feedback, and to act on it (European Commission, 2018a). Trust-building measures are also essential, including proper communication, training, pilots and linking teacher evaluation with school improvement (European Commission, 2018a).

# 4. Investing in education and training

**Expenditure cuts during the financial crisis have had most impact on education for the youngest.** Compared to the EU average of 4.6%, Cyprus's public education expenditure as a share of GDP was 5.7% in 2017. While this is 0.2 pps smaller than in 2016, absolute expenditure was higher, reflecting increased GDP. Between 2010 and 2017, expenditure fell by 10.7% in real terms. While research has shown that effective investment in early childhood education and care yields high returns in terms of inclusive education outcomes (OECD, 2018a), the biggest decrease

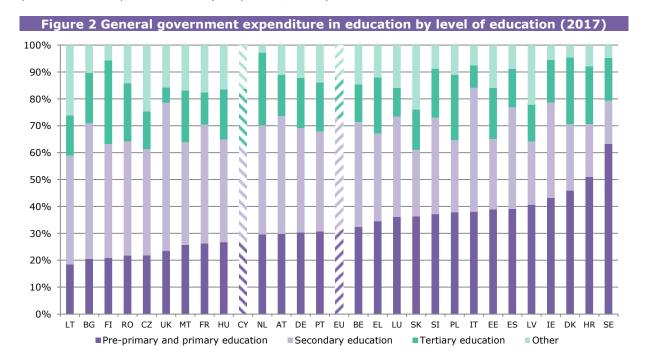
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Since 1 976 no teacher has been deemed unsatisfactory after passing probation, with most teachers scoring between 35 and 37 out of 40 points.



(23.8%) occurred in pre-primary and primary education. By contrast, spending in tertiary education rose by 8%. Teachers' pay constitutes 72.7% of total expenditure on education, higher than the EU average (62%).

**Private tutoring weighs heavily on parents' education spending.** In 2016, private education spending amounted to roughly 26% of overall (public and private) spending on education<sup>8</sup>. While the lion's share of private spending (57%) went on tuition for private education institutions at all levels (ISCED 0-8), a substantial part of it was spent on supplementary tutoring (21%) for pupils. Of this share, 21% was spent for primary education, whereas 47% went to upper secondary students. Socio-economic status is of little relevance: poorer households are almost as likely as high-income families to invest in private tutoring (Lamprianou, 2013). Social mobility in general and high-stakes exams for entry into higher tertiary education in particular are justifications for its prevalence. The ongoing reform of the education system also aims to reduce dependence on private tutoring. However, public tutoring institutions (managed and maintained by the state), which co-exist and compete with private institutions by charging lower fees, appear to validate the phenomenon of private tuition (Lamprianou, 2013).



Source: DG EAC, based on Eurostat data and the Classification of the functions of government (COFOG). Online data code: gov\_10a-exp

# 5. Modernising early childhood and school education

Participation in early childhood education and care (ECEC) is moving towards the EU average but public ECEC is underfunded. In 2017, 92% of children aged 4 to 6 were enrolled in ECEC (EU average 95.4%). Many parents depend on private day care; in 2016/2017, 47% of children attending ECEC went to private facilities and 53% to public ones<sup>9</sup>. Especially for under 3s, of which 28.2% attended ECEC in 2017 (EU average: 34.4%), Cyprus relies heavily on informal settings or private institutions (Rentzou, 2018). Of 220 day care centres in 2016/2017, only 6 were public, while 153 were private and 61 subsidised by municipalities. Curriculum reforms that started in 2016 attest to a growing awareness of the importance of ECEC. In-service training for all kindergarten teachers is being implemented. However, better research into and mapping of parents' needs for affordable, high-quality ECEC provision, including for under 3s, is needed (Rentzou, 2018).

B DG EAC calculation based on Cystat data.

<sup>&</sup>lt;sup>9</sup> Cystat.



**Early school leaving is declining again.** In 2018, 7.8% of 18-24 year-olds left school early compared to 8.5% in 2017. While the 2018 school dropout rate was 6.2% for native-born people, it was 13.9% for the foreign-born population. The gender gap increased somewhat, with a higher rate among males than in 2017 (9.9% v 9.4%) and a lower rate among females (6% v 7.7%).

The student assessment reform seeks to ease the transition between education levels. A new unified and comprehensive student assessment system from pre-primary to upper-secondary education will be gradually implemented as of September 2019. A shift to formative assessment at all levels is envisaged. A dialogue between the Ministry of Education and Culture and school stakeholders on the proposal has started.

Continuity and equity in schools suffer from frequent teacher changes. In Cyprus's centralised education system, the Ministry allocates teachers to specific schools. With occasional exceptions, no teacher can stay more than 6 years at the same school in primary education and 8 years in secondary. Credits based largely on years of service determine transfers to other schools. As remote and/or disadvantaged schools are the least preferred, the majority of their staff are novice teachers. In general, student outcomes and the school climate both tend to be better at schools with more experienced teachers (OECD, 2018b). Research also shows that countries where schools enjoy more autonomy in selecting teachers have seen greater improvements in student outcomes (OECD, 2018b).

**Digital skills need to be further strengthened.** In the labour force, i.e. individuals aged 25-64 who are employees, self-employed or family workers, the proportions of those with low digital skills (32%) or only basic digital skills (34%) are higher than the EU average (25% and 30%). By contrast, those reporting above-basic digital skills are fewer in Cyprus (22%) than across the EU (36%). This is of concern given the growing importance of digital technologies and artificial intelligence at the workplace (OECD, 2019a). Moreover, Cyprus has one of the lowest proportions of science, technology, engineering and maths (STEM) graduates in the EU.

#### **Box 2: Digital education – challenge and chance for schools**

The proportion of Cypriot schools with a high provision of digital equipment (laptops, desktop computers, cameras, whiteboards) per number of students and a high broadband speed is lower than the EU average at both primary and secondary level. (European Commission, 2019). Comparatively few schools provide strong digital support: 21% at primary, 40% at lower secondary and 59% at upper secondary level compared to 32%, 54% and 84% respectively across the EU.

TALIS shows that the majority of teachers (61.8%) feel well or very well prepared for using information and communications technology (ICT) for teaching (EU average 39.4%). A relatively low proportion of teachers (10.8%) report a high need of professional development in this area (EU average 16.1%) (OECD, 2019b).

Several initiatives are underway to boost digital education at schools. The European Computer Driving Licence certification programme for secondary students has been successfully implemented. In February 2019, an 18-month pilot programme was launched providing 250 tablets to primary and secondary schools for work in the classroom and at home. At primary level, an ICT lesson was introduced and robotics in selected schools. Some 205 robots were acquired for secondary schools to support robotics lessons and organisation of robotics competitions (NRP, 2019).

**The reform of special needs education has advanced.** New draft legislation has been consulted on with stakeholders with the aim of completing both the law and the new regulations by the end of 2020. The bill provides for transforming special needs schools into resource centres, which will both empower mainstream schools and provide education and support to children with multiple and severe support needs. Teaching special needs students ranks highest among training needs for Cypriot teachers (27%) (OECD, 2019b).

**Integrating newly arrived migrants is a long-term mission**. In 2018, 7 765 new asylum applications were lodged, significantly more than in 2017 (4 600), among them 1 090 applications



by people under 18<sup>10</sup>. For school education, a comprehensive policy on integrating students with migrant backgrounds, including those newly arrived, is in place. However, no such policy guidance exists for providing post-secondary education for young migrant adults, even though the proportion of recently arrived refugees aged 18-34 is especially high at 62%<sup>11</sup>. In school education, initial assessment, teacher allocation and monitoring all pose challenges. In addition, the inclusion of migrants needs to be supported through training for teachers and school heads in particular. TALIS shows that the proportion of teachers (48.5%) who feel well or very well prepared to teach in multicultural and/or multilingual settings is the highest in the EU (EU average 23.8%). However, Cypriot teachers also report a greater need for CPD in this area (19.6%) than the EU average (13.4%) (OECD, 2019b).

## 6. Modernising higher education

**Tertiary educational attainment has risen further.** After Lithuania, Cyprus has, at 57.1%, the second-highest tertiary educational attainment rate in the EU (the average is 40.7%). Women, at 64.4%, have a considerably higher attainment rate than men (49.2%). At 20.3 pps, a large attainment gap exists between foreign-born and native-born students. Outward degree mobility is, at 13%, second only to Luxembourg. Short term educational stays abroad are made possible exclusively through EU programmes. The student-teacher ratio is, at 17.7 to 1 in 2016, around that of European peers.

**More recent tertiary educated graduates are entering the labour market.** In 2018, the employment rate of recent tertiary educated graduates grew by 6.2 pps from 2017 to 81.3% (EU average: 85.4%). However, forecasts suggest that the majority of future jobs will be in low- or medium-skilled occupations (Cedefop, 2019). This means the rising provision of highly-qualified workers poses a long-term risk that such skills will be underutilised.

**Monitoring of the higher education system is weak.** Systematic data gathering, analysis and use of data to inform policy on the social dimension or to monitor performance is underdeveloped. Of five structural indicators for higher education, Cyprus applies only one: quantitative targets for widening participation<sup>12</sup> (European Commission, 2018). Whereas graduate tracking is implemented for vocational education and training students, it does not exist for tertiary graduates, who constitute the vast majority of graduates in Cyprus.

**Quality assurance in higher education has been upgraded**. The Cyprus agency of quality assurance and accreditation in higher education, DIPAE, became a full member of the European association for quality assurance in higher education (ENQA) in 2019. Since its establishment in 2015, DIPAE has evaluated nearly 300 study programmes and 6 higher education institutions (HEIs). It expects to evaluate 740 programmes and all 53 HEIs by end 2020 (ENQA, 2019). As the agency develops its capacity it is advised to progressively shift from a control-oriented approach to more quality-improvement support to HEIs (ENQA, 2019).

# 7. Modernising vocational education and training

**Participation in VET remains low.** In 2017 only 16.7% of students in upper secondary education were enrolled in VET, well below the EU average of 47.8%. This reflects the strong preference of young Cypriots for tertiary education and the low attractiveness of VET for employers. Students enrolled in VET had limited exposure to work-based learning — none of the VET educational programmes are reported to be combined school and work-based programmes. However, the employment rate among recent VET graduates has risen to 64.3% in 2018 (EU average 77.5%).

**VET reforms continued in 2018.** Apprenticeship programmes were linked with evening technical school education to make it easier for apprenticeship graduates to gain formal qualifications. A programme of fast-paced training in practical professions for the unemployed was initiated, with priority given to the young. The construction of new 'technical and vocational schools of education

<sup>11</sup> For 2018.

Eurostat.

The other indicators refer to monitoring of students' socio-economic background; recognition of informal or non-formal learning in entry to higher education; completion rates as a criterion in external quality assurance; performance-based funding mechanisms with a social dimension focus.



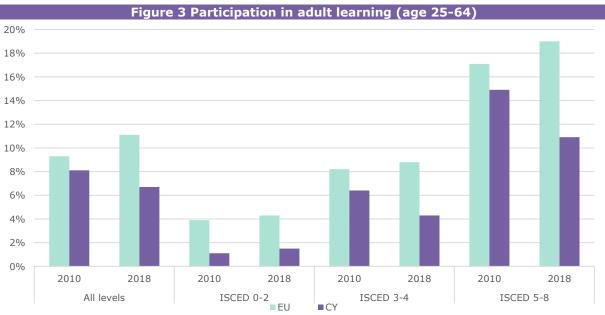
and training' and the expansion and upgrading of some existing ones is underway. VET curricula have been revised in cooperation with industry with the aim to reduce skill mismatches in the labour market. A comprehensive review of the apprenticeship system was completed in 2018. Areas identified for reform include: updating legislation; increasing the role of the Apprenticeship Board; improving guidelines; improving the quality of training in the workplace; and making apprenticeships more attractive to employers.

## 8. Developing adult learning

**Participation in adult learning remains low.** At 6.7%, adult participation in learning remains below the EU average (11.1%). At 10.9%, it is highest among those with tertiary education (ISCED 5-8), but even for them it is significantly below the EU average of 19%. Upskilling and reskilling opportunities are most crucial for low-skilled adults (ISCED 0-2), who currently take least advantage of adult learning. The proportion of low-qualified adults in employment in Cyprus was 62% in 2018 (EU average: 56.8%) and higher than in 2017. During 2017, only around 50 adults aged 25 or above acquired an upper-secondary qualification, highlighting the need for a more substantial upskilling and reskilling effort. So far, a single legislative framework for adult learning does not exist. The main actions in adult education are being taken under the 2014-2020 national lifelong learning strategy.

A distinct professional identity for adult educators has not been articulated, despite a shortage of qualified people in the sector. The 'Trainer of vocational training' certificate can be obtained after short (14 hours), medium-length or long (around 77 hours) training courses or master's programmes in adult education. Clearly defined qualification requirements for adult educators are lacking as well as training programmes adjusted to the needs of adult educators working in different fields. While demand for adult educators is high at all levels of education, the supply of qualified people remains insufficient.

**Selected measures to promote adult learning are ongoing.** Additional professional standards were developed and three new 'evening schools of technical and vocational education' were established. The multi-company training scheme for the long-term unemployed was expanded to all registered unemployed. In October 2018 the national action plan to establish validation of nonformal and informal learning was approved, to be fully implemented by 2020. The implementation of the qualification framework is still at an early stage and a comprehensive approach to how different stakeholders will cooperate is needed. The National Qualifications Authority, the competent authority for assessing and validating qualifications acquired through formal, non-formal and informal learning, is now operational. However, its mandate and institutional role need to be expanded and made more concrete.



Source: Eurostat, Labour Force Survey. Online data code: trng\_lfse\_03



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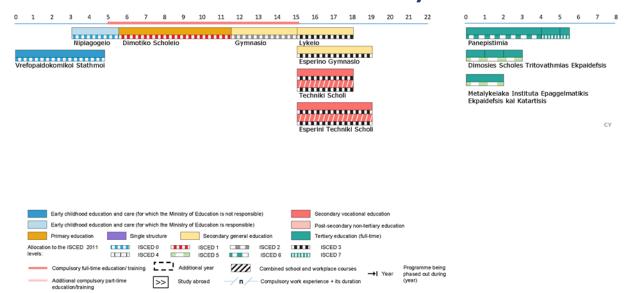
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# **Annex I: Key indicator sources**

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				

## **Annex II: Structure of the education system**



Source: European Commission/EACEA/Eurydice, 2018. The Structure of the European Education Systems 2018/19: Schematic Diagrams. Eurydice Facts and Figures. Luxembourg: Publications Office of the European Union.

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# **Executive summary**

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





## 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  $60\%^{13}$  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

<sup>13</sup> 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 socioeconomically 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



target of less than 15% by 2020<sup>14</sup> remains a challenge, particularly for pupils from disadvantaged socio-economic backgrounds. Failing to achieve basic mathematics, reading or science tasks at the age of 15 impacts on individuals' chances to continue studying, find and maintain employment later in life, cope with fast-paced technological change, and develop as citizens. Between 2012 and 2015, the EU has actually moved further away from meeting this target. Approximately one fifth of pupils in the EU cannot complete basic reading tasks, and the share is slightly higher for science and maths (2015 data). Despite less favourable or sometimes adverse background conditions, around a quarter of socio-economically disadvantaged pupils born in another country are considered academically resilient. Individual factors associated with higher resilience include high academic expectations, and not repeating grades; while disengagement from school (for example skipping classes, and abusing substances) has a negative association with resilience. At school level, the use of school evaluations, connecting the students' test results to teachers' performance, adequate provision of study rooms and being surrounded by pupils with higher socio-economic status are all factors correlating positively with resilience.

Over the years, there has been limited growth in the share of adults participating in education and training during the last 4 weeks in the EU – from 9.5% in 2008 to 11.1% in 2018. In addition, in practically in all EU countries people with little or no qualifications in education – those most in need of access to learning – are the least likely to benefit from it. Age and educational attainment matter when it comes to adult participation in learning. Young adults (25-34) are more than four times more likely to participate in learning as those aged 55-64. Similarly, those with a tertiary degree are more than four times more likely to participate in learning than those holding at most an upper-secondary diploma.

#### **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<sup>15</sup>. 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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Data for this benchmark come from the OECD PISA survey. Students scoring below level 2 are considered underachievers.

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.

#### Treland

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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