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Education and Training Monitor 2019

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.

The manuscript was completed on 26 August 2019.

Additional contextual data can be found online (ec.europa.eu/education/monitor)

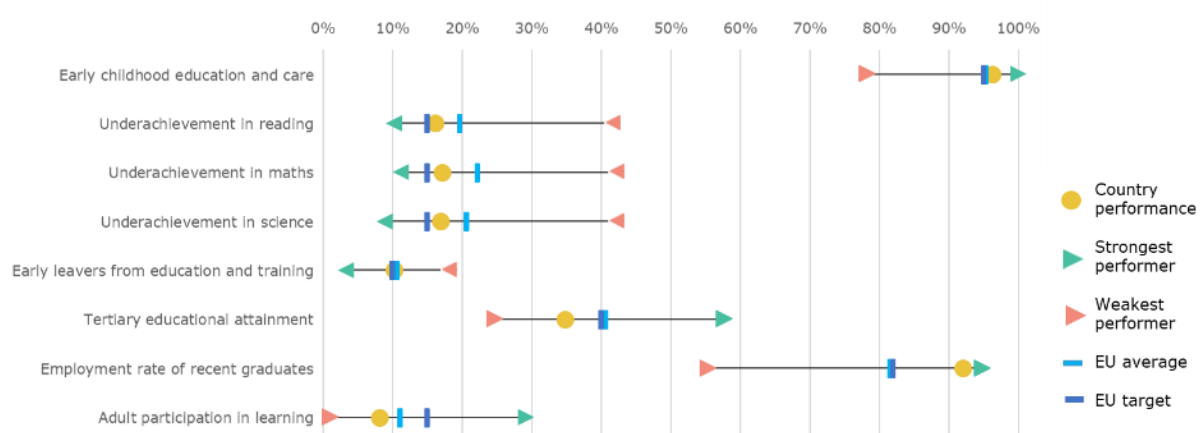
GERMANY

1. Key indicators

			Germany		EU average	
			2009	2018	2009	2018
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			11.1%	10.3%	14.2%	10.6%
Tertiary educational attainment (age 30-34)			29.4%	34.9%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			96.0%	96.4% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading		18.5%	16.2% ¹⁵	19.5% ^{EU27}	19.7% ¹⁵
	Maths		18.7%	17.2% ¹⁵	22.3% ^{EU27}	22.2% ¹⁵
	Science		14.8%	17.0% ¹⁵	17.7% ^{EU27}	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)		ISCED 3-8 (total)	85.3%	92.1%	78.3%	81.6%
Adult participation in learning (age 25-64)		ISCED 0-8 (total)	8.0%	8.2%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	5.1% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)		:	12.8% ¹⁷	:	8.0% ¹⁷
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		4.3%	4.1% ¹⁷	5.2%	4.6% ¹⁷
	Expenditure on public and private institutions per student in € PPS	ISCED 0	€7 371 ¹²	€8 529 ¹⁶	:	€6 111 ^{15,d}
		ISCED 1	€5 843 ¹²	€6 519 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
		ISCED 2	€7 177 ¹²	€8 118 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
		ISCED 3-4	€9 058 ¹²	€9 799 ¹⁶	:	€7 730 ^{14,d}
Early leavers from education and training (age 18-24)	ISCED 5-8		€12 956 ¹²	€12 680 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
	Native-born		9.5%	8.1%	13.1%	9.5%
	Foreign-born		22.0%	24.1%	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born		31.0%	35.4%	33.1%	41.3%
	Foreign-born		23.9%	33.8%	27.7%	37.8%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		81.0%	90.3%	72.5%	76.8%
	ISCED 5-8		92.9%	94.3%	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: The EU's 2009 PISA averages do not include Cyprus; d = definition differs, u = low reliability, : = not available, 12 = 2012, 14 = 2014, 15 = 2015, 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).

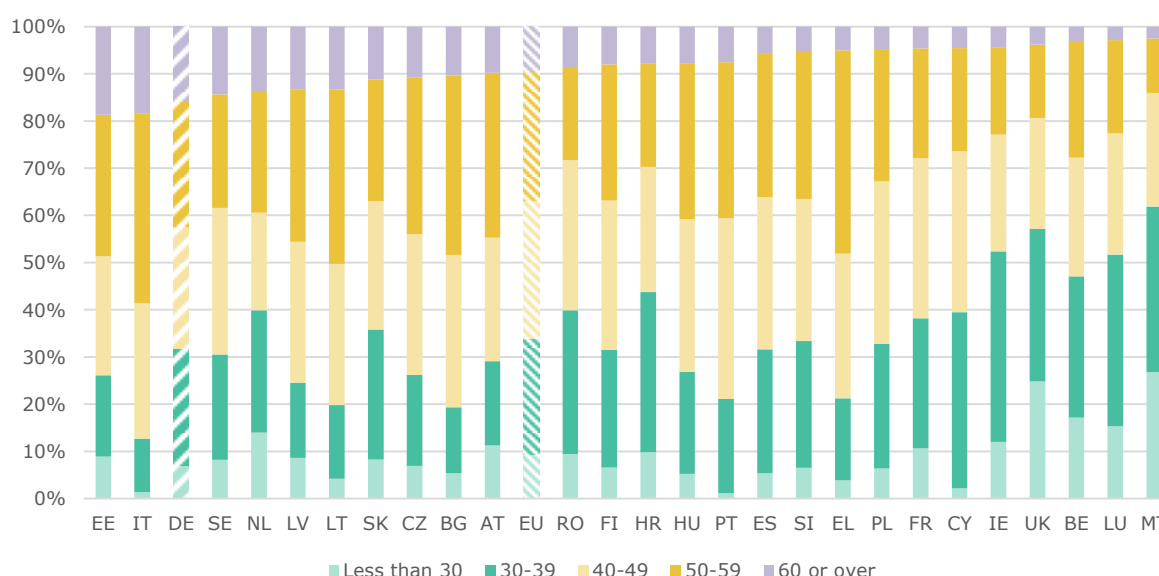
2. Highlights

- Germany has announced significant investment 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 high number of teachers.
- Young people from disadvantaged socio-economic and/or migrant backgrounds continue to lag behind in educational attainment.

3. A focus on teachers

Demand for and supply of teachers varies between regions, in particular between eastern and western Germany. For new teaching vacancies, western Germany has an annual surplus of 3.5%, or 900 teachers, and eastern Germany has a shortfall of 22%, or 1 500 teachers (KMK, 2018). The teaching workforce is comparatively old by EU standards, with 38% in primary and 44% in secondary education aged 50 or older. In early childhood education and care, 30% of teachers are 50 or older. In higher education, Germany has the second youngest academic personnel (after Luxembourg) with only 26% aged 50 or older¹. School teachers in eastern Germany are generally older: 60% are aged 50 or older (Autorengruppe Bildungsberichterstattung, 2018). The differences between eastern and western regions are influenced by negative demographic trends, in particular outward migration from the East.

Figure 2 School education (ISCED 1-3) teachers and staff by age group, 2017



Source: Eurostat, UOE, 2017. Online data code: [educ_uoe_perp01](#)

Germany will have to replace a significant share of its teachers within the next 10 years. At primary level, this is estimated to reach 81 000 full-time equivalents by 2030 (Klemm, 2018). There are teacher shortages, particularly in vocational education and training, in special needs teaching and in primary education. Assessments of primary school teacher shortages vary: the Kultusministerkonferenz identifies a need of 15 000 teachers to 2025, but this could increase to 30 000 if initiatives such as the expansion of all-day schools are factored in (European Commission, 2019). Teacher shortages lead increasingly to the recruitment of other academic

¹ Eurostat, UOE. Online data code: [educ_uoe_perp01](#).

personnel that undergoes pedagogical training after recruitment. The share of teachers in schools without initial teacher training has nearly tripled since 2006 to reach 8.4% in 2016, with peaks of 40.1% in Berlin and 50.6% in Saxony in 2018 (Autorengruppe Bildungsberichterstattung, 2018).

Teachers are predominantly women, as in other EU countries. In 2017, 96% of early childhood education and care (ECEC) staff were women. In primary education, 87% were women and for secondary education, 63%. In tertiary education, 39% of staff in 2017 were women, 3 pps below the EU average. A 2015 study of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth identified specific measures to encourage male staff to work in ECEC, including an action plan for the federal level and the regions (BMFSJ, 2015).

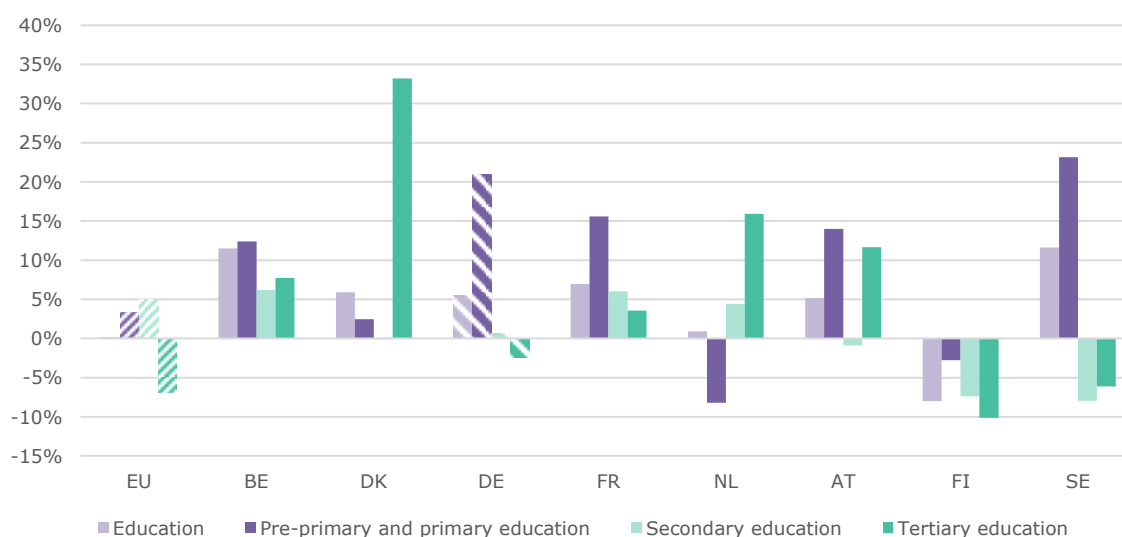
Although teacher salaries are among the highest in the OECD, the profession is not perceived as attractive in Germany. Primary school teachers earn 90% of the average earnings and lower secondary teachers 99% of the average earnings of full-time tertiary educated workers; upper secondary teachers earn 105% (OECD, 2018a). Over their career, German primary school teachers earn about 1.7 times the EU average teacher's career earnings. This mainly reflects high starting salaries, but salaries increase by only 33% over the course of a teacher's career, considerably below the EU average career progression of 61% (European Commission/EACEA/Eurydice, 2018). Continued training is a prerequisite for promotion but it is implemented differently across regions. VET teachers can often attract higher earnings in non-teaching jobs, contributing to a serious shortage in this category. Teaching career prospects have improved due to the teacher shortages, leading to higher salaries and the re-introduction of civil servant status for teachers, particularly in eastern Germany. However, the perception of an unattractive profession and among other reasons an increasingly complex teaching environment has made it difficult to fill vacancies. Several regions have campaigns to encourage young people to choose a career in teaching, notably North Rhine Westphalia (NRW, 2018) and Baden-Württemberg (Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg).

Becoming a head teacher is not an attractive career choice either. It is reported that up to 10% of primary schools lack an appointed head teacher but more thorough research is missing so far. Reasons for this may be related to the lack of preparation and support. An ongoing project on skills required for school management indicates that fewer than half of head teachers received compulsory training before taking up their management position or during their service (Forsa, 2018).

4. Investing in education and training

General government expenditure on education as a proportion of GDP remained stable. It was 4.1% in 2017, below the EU average of 4.6%. The share of government expenditure on education in 2017 was 9.3%, 0.9 pps below the EU average. Education expenditure increased between 2016 and 2017, most notably in pre-primary and primary education, with a small reduction in tertiary education. The National Financing Report of Education 2018 reported a 16.8% increase in public funding between 2010 and 2015. ECEC benefited with a 48% increase, compared with a 6.3% increase for schools and 27.3% for tertiary education. German regions contributed EUR 88.5 billion or 71.4% in 2015, with 21.5% coming from local authorities and 7.1% from the federal government. Eurostat figures show a real-term increase between 2010 and 2017 of 5.6% in education spending overall, 21% in pre-primary and primary education, 0.6% in secondary education and a 2.4% cut in expenditure on tertiary education.

Figure 3 Change in real expenditure on education between 2010 and 2017



Source: Eurostat, COFOG. Nominal data were deflated using 2010 values as a basis.

Germany has announced additional investment in several areas, notably in digitalisation in education and in higher education. The federal authorities agreed with the regions in June 2019 to spend more than EUR 2 billion on higher education and research every year. These funds will be allocated to strengthening the quality of studies and of teaching and promoting innovation in higher education. The fourth agreement for research and innovation will mobilise EUR 120 billion between 2021 and 2030. The 'Digitalpakt Schule' was also finally agreed. It finances digital infrastructure in general and vocational schools and the development of pedagogy and teacher training on digital education. The federal government will invest EUR 5 billion between 2019 and 2024 in digitalisation in education, to be topped up by funding from the regions totalling EUR 555 million.

Demographic trends and expected technological change will require further investment. The share of the population aged 3-18-years old is projected to increase between 2020 and 2030 by 8.0%². The 2018 German Education Report notes a further increase in the birth rate over the last five years. Technological change, including further digitalisation, is expected to have a serious impact on jobs and society, changing the required skills mix. These factors will require continued investment in education, training and adult learning (Deutsche Bank, 2019).

5. Modernising early childhood and school education

96.4% of children between the age of four and the start of compulsory education attend early childhood education and care (ECEC). There are only small differences in participation between the German regions (3.7 pps), smaller than in most EU countries. 30.3% of children under 3 were in ECEC in 2017, a share that rose steadily until 2016, from 18% in 2006 to 32.6% in 2016 before regressing. 28.6% of children from families at risk of poverty were in ECEC (6.9 pps above the EU average), giving a participation gap of 5.4 pps, smaller than in most EU countries.

Progress has been made in expanding the quantity and quality of early childhood education and care but more will be needed. The 2018 German Education Report identifies the need for further expansion and to extend opening hours to meet the needs. 45% of parents want a place for their children below three years old. The report identifies an additional need of 350 000 spaces until 2025. In eastern Germany, three out of four institutions are open for more than 10 hours per day while in western Germany, half the institutions are open for nine hours only. Children from a migrant background still participate a lot less in ECEC, with their share rising only

² Calculations from EUROSTAT baseline projections. Online data code: [proj_15npms](#).

slowly between 2007 and 2017 from 25% to 30% for children aged 3 to 5 years. Over the same period, participation of children who do not speak German at home increased by 54% to 563 000.

Fees for ECEC vary widely between regions and municipalities. Hamburg and Mecklenburg provide a free service for all age groups; Berlin as of the age of one. 11 regions provide partial or full fee waivers for certain age groups. In 2015, on average 14% of the cost of childcare was covered by public contributions nationwide, though it varies widely (Rauschenbach et al., 2017).

Since 2015, there is an agreement between the federal and the regional level on ECEC financing and quality standards. However, there are no set minimum or harmonised children/staff ratios. These range, for under-3-year-olds, from 3 in Baden-Württemberg to 5.9 in Saxony (Autorengruppe Bildungsberichterstattung, 2018). According to the German Education Report, 70% of pedagogical staff are qualified as educators, 13% as nannies but only 5% with a tertiary academic education. The report identifies a future lack of staff of up to 309 000 by 2025, based on higher birth rates and improvements in children/staff ratios; this exceeds the current capacity for initial teacher education.

It remains crucial to enable successful transitions between educational levels in order to improve fairness and inclusion. Teachers in ECEC and in primary school know very little about each other's work and pedagogical practices, according to (OECD, 2017). This leaves them unprepared to facilitate the first crucial educational transition (OECD, 2017). 44% of students transferred in 2017 from primary school to an academic secondary education ('Gymnasium'), a 8.5 pps increase compared with 2001. Notwithstanding that some regions have extended the educational offer in vocational education, the share of pupils moving from primary schools to a vocational secondary education (Hauptschule) fell by 20 pps between 2001 and 2017. Socially disadvantaged groups and children from a migrant background continue to choose vocational tracks more often than their German peers (Autorengruppe Bildungsberichterstattung, 2018).

The early school leaving rate remains relatively stable since 2015 at 10.3%. It remains a challenge to achieve Germany's Europe 2020 target of 10%. The gender gap of 2.4 pps is below the EU average of 3.3 pps in 2018. The rate among native-born pupils has remained stable at 8%; among foreign-born pupils it is three times higher (24.1%), marginally higher for non-EU-born pupils than for EU-born pupils. Rates vary regionally between 7.2% in Bavaria and 9.3% in Sachsen-Anhalt. They are high in the metropolitan areas of Berlin and Düsseldorf, both above 13%. Between 2010 and 2018, rates fell by 2.2 pps in cities and by 0.9 pps in rural areas, with no change in towns.

Education outcomes of pupils from a disadvantaged socio-economic background still trail behind. The share of young people from a disadvantaged socio-economic background achieving solid PISA scores rose from 25% in 2006 to 32% in 2015, indicating that resilience has improved. The share of low performers in mathematics PISA tests has fallen since 2000 but remains significant at 17.2% in 2015 (Anger et al., 2018). The socio-economic background of parents continues to have an important influence on education outcomes. Although the number of young people from disadvantaged backgrounds transferring into academic upper secondary education has slightly improved, their education results over time lag behind those of students from better-educated families (Horneber and Weinhardt, 2018).

The number of young people from a migrant background is increasing but their education outcomes are not improving appreciably. In 2016, 23% of the overall population had a migration background. Among pupils, the share is about 37% for the under 10s, 34% for 10-15 year olds and 30% for 15-20 year olds. The share has increased in recent years. It also varies between regions: from 42% in western Germany and Berlin to 11% in eastern Germany. One third of pupils with a migrant background are second generation, born in Germany. Children from a migrant background are four times more likely to show multiple risk factors (Autorengruppe Bildungsberichterstattung, 2018). 16 to 30 year olds with a migrant background leave school early more often, participate less intensively in education than native-born pupils, and choose more frequently vocational and non-academic school types. German regions are taking measures to increase inclusion in the education system (BMW, 2019). There are numerous initiatives at local level that support the integration of refugees, mainly focusing on formal and non-formal education and training.

The 2019 European Semester country-specific recommendation to Germany included the following recommendation: *'Focus investment-related economic policy on education; and improve educational outcomes and skills levels of disadvantaged groups.'* (Council of the EU, 2019).

The recent 'DigitalPakt Schule' between the federal level and the regions aims to improve digital skills. Although better than the EU average, the digital skills of 16 to 19 year-olds did not improve between 2015 and 2017. Skill levels measured among the 16-74 population and the labour force did not improve either. This lack of progress in an area crucial to Germany's economic and social future underscores the need for investment in education and training in this area (European Commission, 2019).

6. Modernising higher education

Tertiary attainment of people aged 30-34 is increasing slowly, at 34.9% in 2018, having increased by 5.5 pps since 2009. Germany has a very low gender gap of 0.9 pps. The number of new entrants to higher education at bachelor's level is broadly unchanged since 2013, (+1.36%). New entrants to master's level programmes increased by 18% and decreased at PhD level by 26%. Tertiary attainment varies considerably between regions, partially linked to the economic situation: 50.7% in Oberbayern and 20.5% in Sachsen-Anhalt. Participation of students from socially disadvantaged backgrounds is increasing but their attainment rate remains unchanged at 33.8%, slightly below the average attainment rate. Over the last decade, the participation of foreign-born students increased by 10 pps to 33.8% in 2018 but it varies between those born within the EU (37.6%) and those born outside (31.6%). Germany has the highest proportion of STEM graduates in the EU with 35.6%: 34.8% at bachelor and 45.7% at PhD level. Tertiary graduates integrate rapidly into the labour market (94.3%), marginally higher than recent VET graduates (ISCED 3-4) at 92.4%³.

German graduates frequently complete studies abroad and Germany is an attractive study destination. 17.8% of 2017 German graduates have gone abroad during their studies. Most mobility is at master's level, 6.9 pps more than at bachelor's level. The highest share of full degree mobility is at doctorate level, with 8.7%. Regarding incoming mobility to study, Germany attracts graduates from abroad in particular at doctorate (18.5%) and master's levels (11.9%). While a high proportion of foreign graduates come from within the EU (24.3%) or non-EU European countries (12.1%), a significant share comes from Asia (36.9%) and, to a lesser extent, from Africa (6.4%) and the Americas⁴.

Box 1: Recent agreements ensure continuity and qualitative improvements in higher education funding.

In June 2019 the federal government and the regions signed the permanent 'Zukunftsvertrag Studium und Lehre stärken'. This agreement aims to improve study conditions and the quality of teaching in all publicly financed German higher education institutions. It will ensure as of 2021 additional annual funding of EUR 2 billion. A recent second agreement between these parties mobilises additional annual funding of EUR 150 million to establish new entities in existing institutions entirely dedicated to supporting innovation in higher education. The 2018 German Education Report identified the need to increase staff in higher education as a precondition to improve quality. Germany also has a new law as of January 2019 that seeks to increase access to higher education for socially disadvantaged students by offering higher grants (Bafög). However, the planned increase might not be sufficient to cover real cost increases (Autorengruppe Bildungsberichterstattung, 2018).

³ Eurostat, Labour Force Survey, edat_lfse_24. Employment rate of recent graduates.

⁴ Calculations by the European Commission's Joint Research Centre, based on UOE; 2017.

7. Modernising vocational education and training

Although the employability rate is increasing, fewer students are enrolling in formal VET programmes. In 2017, 450 535 new students started formal VET programmes, a 2.7% drop since 2016. The number of places in VET programmes that did not attract an applicant in 2018 increased to 57 700 in 2018 from 49 000 in 2017. Regional imbalances in qualifications and jobs appears to be increasingly pronounced (BIBB 2019). Total enrolment in upper secondary VET in 2017 fell by 4% since the previous year, with 45.6% of all students at that level attending vocational programmes, just below the EU average of 47.8%. VET students have a high exposure to work-based learning; most educational programmes include solid practical modules in the curriculum. The employability rate of recent VET graduates in 2018 increased to 92.4%, up from 91.3% in 2017, far above the EU average of 79.5%.

Measures to address this mainly focus on modernising and adjusting VET to labour market developments in the field of digitalisation, automation, technology and sustainability. The Federal Ministry of Education and Research (BMBF) announced in 2018 the 'Vocational Training Pact', a comprehensive agenda to modernise VET. Regarding higher VET and excellence, in 2019 the Federal Cabinet agreed to update the Vocational Training Act (Berufsbildungsgesetz) introducing three C-VET levels with harmonised terms of C-VET occupations. The changes are expected to come into force on 1 January 2020. In January 2019, a new federal initiative INNOVET 'Shaping the future Innovation Clusters for VET Excellence' was launched, initially with a budget of EUR 80 million, to support the development and testing of innovative approaches. Demand for training contracts has risen for the second year in a row. Germany also continued efforts to boost dual VET, including by declaring 2019 as the 'Year of Vocational Training'.

The federal government and the regions are running the second phase of the 2013-23 quality initiative geared to improving teaching and addressing potential skills shortages. It includes 48 projects in 58 establishments (2019-2023)⁵ and runs campaigns to attract vocational teachers in subjects such as machine technology, electrical engineering, social pedagogy and health.

Box 2: ESF project – Green up your future

Since 2016, an open exhibition has travelled to 19 places in Germany. The goal is to give young people career advice and encourage them to find green and sustainable jobs. It includes making multimedia stories and a detailed job database available online. The body responsible, 'BIOKON – Bionik-Kompetenznetz', receives EUR 1.6 million in EU funding to run a four-year project.

The exhibits, in the form of outdoor portals and indoor exhibits, aim to be 'door openers' to more attractive professions linked to environmental sustainability. The physical exhibition space uses augmented reality and virtual stories, communicated also through social media, to inform young people about green economy issues and to make the environmental aspect of different occupational profiles part of their career considerations. Young people see how they can become part of a sustainable future.

For more information see: <https://green-up-your-future.de/>

8. Developing adult learning

In Germany, 13.4% of the adult population have not acquired at least an upper-secondary qualification, compared with an EU average of 21.9% (2018). The share of low-qualified adults in employment, at 61%, is above the EU average of 56.8% (2018). Participation in adult learning, at 8.2%, is well below the EU average of 11.1% (2018). Nearly 6.11 million adults (aged 25-64) in Germany have only a low-level or unknown level of educational attainment, though there are just 3.2 million jobs in elementary occupations (2017). This highlights the need for more widespread up-skilling and re-skilling targeted to adults with low skills.

⁵ Bundesministerium für Bildung und Forschung.

Efforts are ongoing to boost adult learning and additional measures aim at upskilling. *The Qualifications Opportunities Act (Qualifizierungschancengesetz)* passed on 1 January 2019 will improve access to and financial support for further education of employees whose occupational activities are at risk of being replaced by new technologies, for employees affected by structural change, or those in jobs with a shortage of skilled workers. A new *National Continuing Training Strategy* presented to the public on 12 June 2019 responds to the digital transformation of the world of work. The adult learning programmes run by federal and state governments, to align them with the needs of employees and companies and to establish a new adult learning culture. Furthermore, the government plans to reform the upgrading training assistance act, with an additional EUR350 million to be spent in the current legislative term to support individuals attending C-VET courses at higher levels. In addition to ongoing measures linked to the Upskilling Pathways Council Recommendation⁶, the BMBF launched a new funding priority in 2018 to focus on strengthening literacy skills and basic education of adults, as part of the National Literacy Decade 2016 – 2026.

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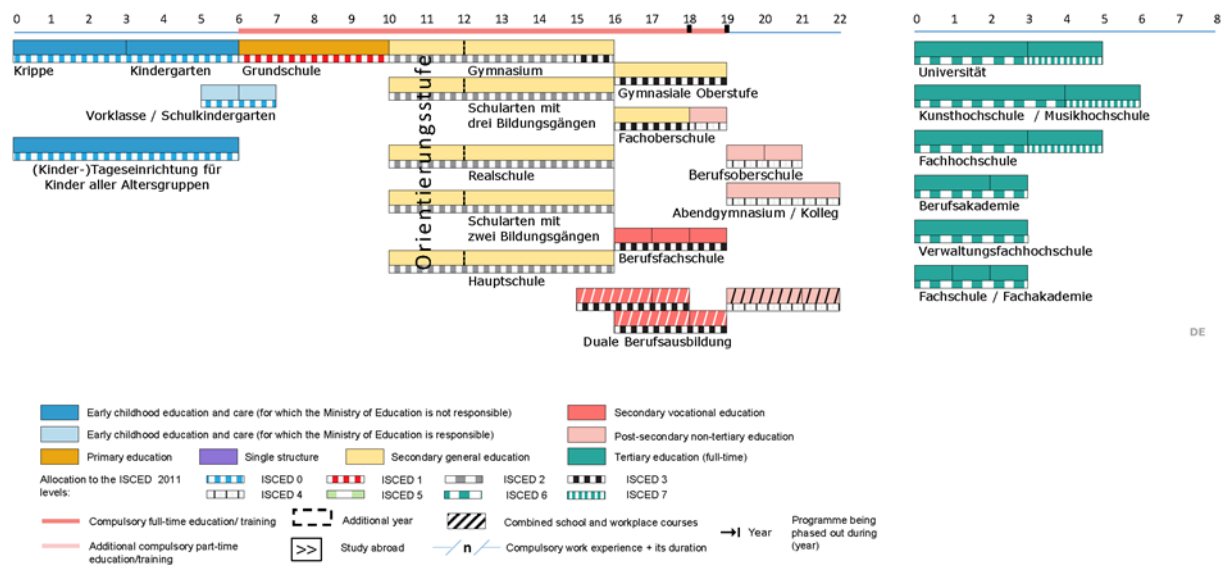
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Annex I: Key indicator sources

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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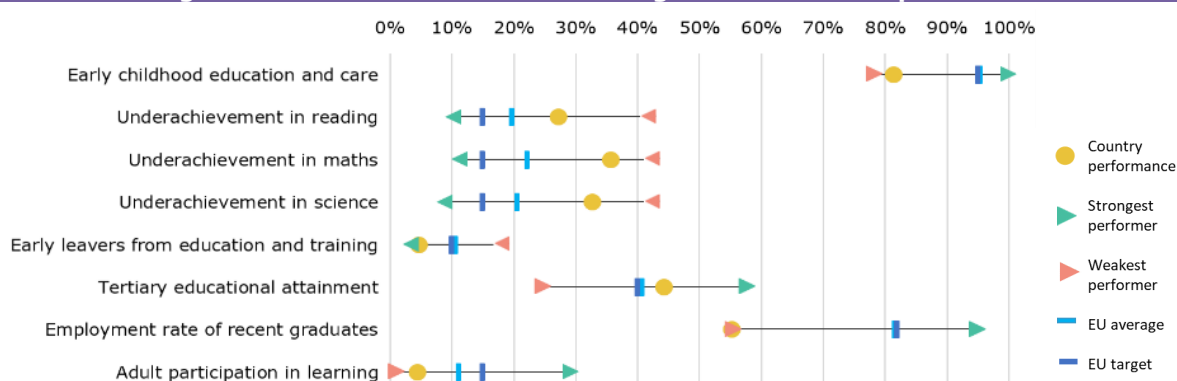
GREECE

1. Key indicators

		Greece		EU average	
		2009	2018	2009	2018
Education and training 2020 benchmarks					
Early leavers from education and training (age 18-24)		14.2%	4.7%	14.2%	10.6%
Tertiary educational attainment (age 30-34)		26.6%	44.3%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)		:	81.5% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading	21.3%	27.3% ¹⁵	19.5%	19.7% ¹⁵
	Maths	30.4%	35.8% ¹⁵	22.3%	22.2% ¹⁵
	Science	25.3%	32.7% ¹⁵	17.7%	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-8 (total)	65.2% ^b	55.3%	78.3%	81.6%
Adult participation in learning (age 25-64)	ISCED 0-8 (total)	3.5%	4.5%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)	:	12.1% ¹⁷	:	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	4.1%	3.9% ¹⁷	5.2%	4.6% ¹⁷
	ISCED 0	:	:	:	€6 111 ^{15,d}
	ISCED 1	€3 794 ¹²	€4 281 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
	ISCED 2	€5 005 ¹²	€4 956 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
	ISCED 3-4	:	:	:	€7 730 ^{14,d}
	ISCED 5-8	€2 640 ¹²	€2 389 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born	9.6%	3.9%	13.1%	9.5%
	Foreign-born	43.8%	17.9%	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born	29.7%	48.1%	33.1%	41.3%
	Foreign-born	10.3%	15.1%	27.7%	37.8%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	60.8%	49.1%	72.5%	76.8%
	ISCED 5-8	68.1%	59.0%	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.

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

- The teaching profession is highly attractive 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.

3. A focus on teachers

The teaching profession remains attractive despite setbacks in recent years. Teachers in Greece are public servants. Despite salary and hiring freezes over the past decade of financial crisis, the number of candidate teachers still far outstrips demand. In 2018, over 120 000 applied for 20 000 posts as substitute teachers. The announced hiring of 15 000 permanent teachers over the next 3 years is expected to attract a similarly high number of applicants. This high level of interest coexists with relatively high emigration by teachers. Over 2008-2018 the number of secondary teachers who applied for recognition in another EU country to practice there on a permanent basis⁷ rose to 14 869 from just 594 during the preceding 10 years. This is the second highest number in the EU after Spain and the highest for regulated professions in Greece⁸. Salaries for teachers were cut by up to 28% in real (inflation-adjusted) terms between 2009 and 2017 (OECD, 2018a). Nevertheless, since 2016, there have been small annual salary increases, in particular for teachers with master's or PhD degrees, as part of the wider public policy objective of raising the salaries of public servants with higher qualifications. While statutory salaries in 2016/2017 were lower than the EU average, for both starting and maximum salaries (European Commission, 2018c), they are generally higher than in EU countries with a similar GDP per capita⁹. Despite the importance of the profession, data about teachers and monitoring of teaching is scarce. To assess the state of teaching in the country, Greece would benefit from taking part in the future OECD Teaching and Learning International Survey (TALIS)¹⁰.

Teachers have comparatively short teaching time and small classes. Teachers teach 660 hours per year at primary level and 609 hours at lower secondary level, below the EU23 averages of 771 and 665 hours (OECD, 2018a). A new law limits class size to 22 students in primary education. Statutory teaching hours decrease progressively and rather rapidly according to teachers' years of service, resulting in less contact time for more experienced teachers. The practice of rewarding teachers in this way for years of service exists in other EU countries but is usually coupled to a minimum age limit, except in Cyprus.

Teachers are highly educated but lack opportunities to develop their pedagogical competences, especially in secondary education. Since 2010, subject teachers are required to obtain a certificate of pedagogical and teaching competence after their subject-related degree. However, since no permanent teachers have been hired since 2009, this regulation has had no effect. No competence framework for teachers exists to inform and shape initial teacher education. A small-sample study among secondary teachers in Greece and other countries finds that the knowledge profile of Greek participants was especially strong on assessment (evaluating and diagnosing students, data use, research). It was comparatively weak on learning (relating to the cognitive, motivational and emotional dispositions and learning of students) and poorest on instruction (teaching methods, lesson planning and classroom management). Of all participating

⁷ See the Regulated Professions Database: <http://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=homepage>

⁸ The second is medical doctors (8 690).

⁹ With the exception of Portugal this is the case for Slovakia, Poland, Hungary, Romania, Estonia, Lithuania, Latvia. GDP per capita measured in PPS, Eurostat, reference year 2016.

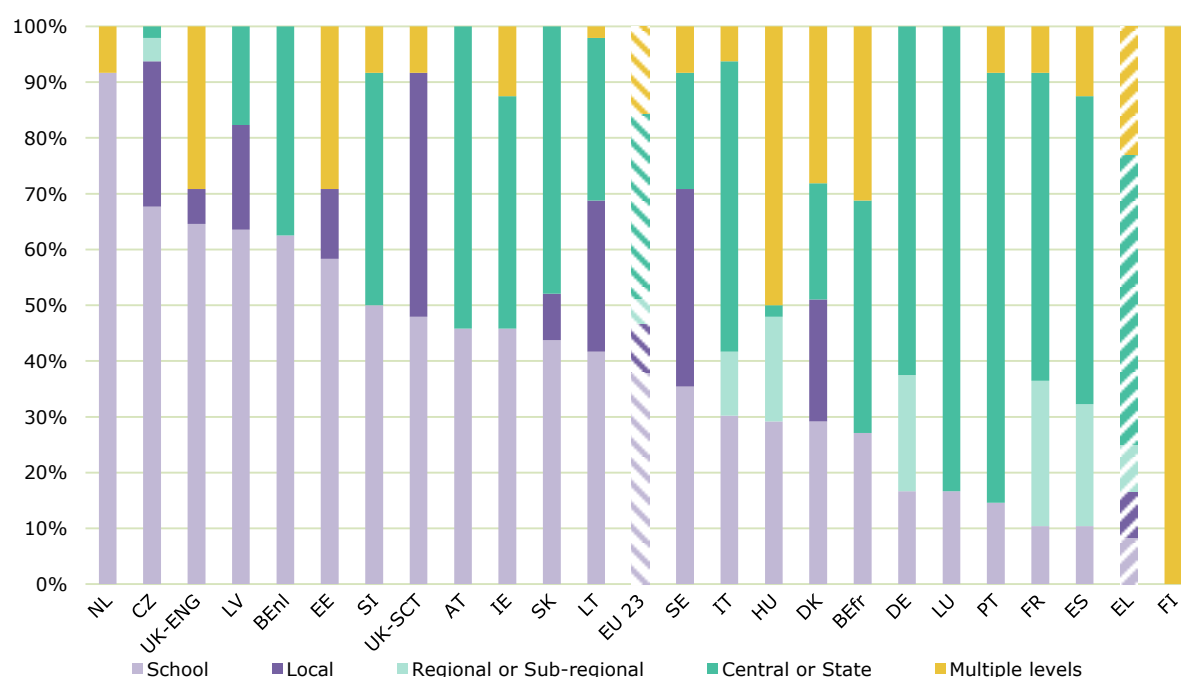
¹⁰ In 2018, 23 Member States participated in TALIS: Austria, Belgium fr, Belgium nl, Bulgaria, Croatia, Cyprus, Czechia, Denmark, England (UK), Estonia, Finland, France, Hungary, Italy, Latvia, Lithuania, Malta, the Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden. TALIS 2018 covers lower secondary teachers and school leaders in mainstream public and private schools.

countries, Greek secondary teachers and teacher candidates had the fewest opportunities to learn about pedagogical methods (Sonmark et al., 2017).

Teacher evaluation has not yet taken root. Teaching competences, in the absence of in-service appraisal, are not rewarded in the Greek system. Effective teacher evaluation as part of a general supportive framework can improve teacher quality, job satisfaction and feelings of self-efficacy (European Commission, 2018a). However, punitive measures linked to teacher evaluation in the past continue to dominate the argument. An understanding has yet to emerge that teacher evaluation and a democratic school culture are not mutually exclusive (Stamelos, 2012). School self-evaluations, which have been legislated for but not yet implemented, could help build the necessary trust.

School leader posts involve little autonomous decision-making. In recent years, academic knowledge and additional educational qualifications are increasingly valued in the selection of school leaders. However, their tasks and responsibilities remain largely clerical — literally so, as administrative support staff are scarce in schools — which is also due to Greek schools having one of the lowest levels of autonomy within the OECD. While the opinion of the school's teachers is considered when the school leader is being selected, school leaders have no role in hiring teachers as teacher allocation is administered centrally by the ministry.

Figure 2 Decisions taken at different government levels in public lower secondary education, 2017



Source: OECD (2018a), Table D6.1. See Source section for more information and Annex 3 for notes: <http://dx.doi.org/10.1787/eag-2018-36-en>

Box 1: Changes in the teacher appointment system

Law 4589/2019 changes the conditions for appointing teachers. The new hiring system abolishes the previously obligatory exams on subject and pedagogical knowledge. Instead, it relies solely on a credit-point system based on academic credentials, years of service and social criteria, such as the number of children in the household.

The certified pedagogical and teaching proficiency that was previously mandatory for taking teacher appointment exams can now be acquired up to 2 years after appointment. Credit points for additional and post-graduate degrees in the teaching subject or in pedagogy were provided for in the previous law but never implemented. No specific requirements for recognition of additional degrees are now necessary.

The new law in effect focuses on regularising the situation of substitute teachers¹¹ rather than on modernising teacher recruitment. A large number of substitute teachers have been serving in the system, sometimes for many years.

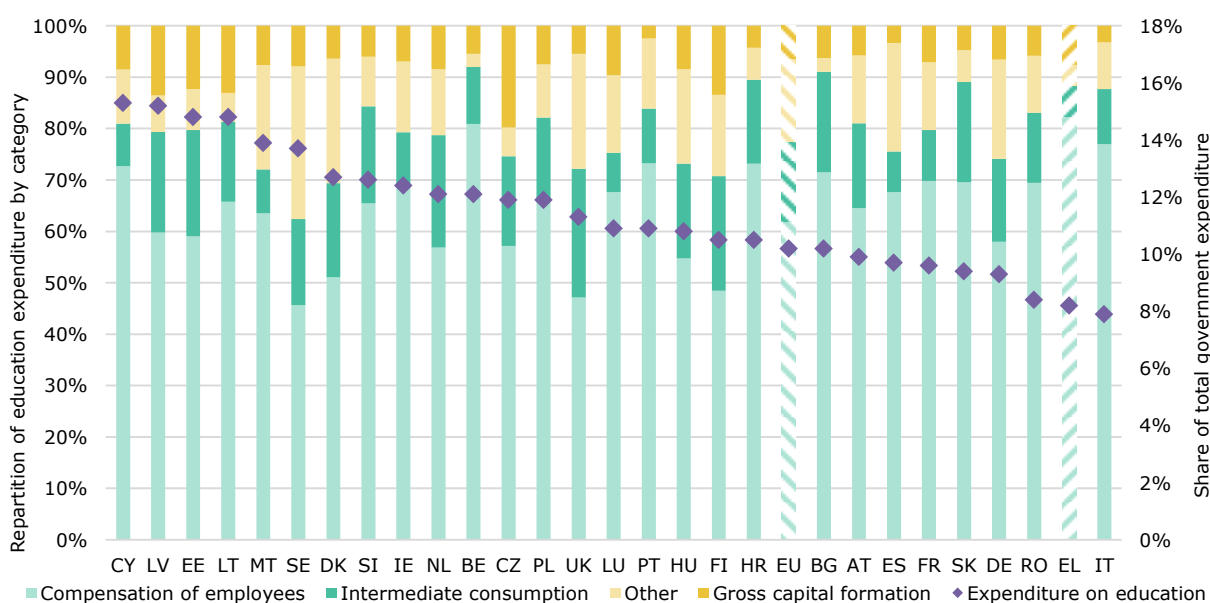
In addition, fundamental equity challenges persist in the central teacher appointment system. Very often, newly appointed and hence less experienced teachers and school leaders serve in the most disadvantaged and therefore least desirable schools and areas. Teacher transfer is based on credit points, with bonuses for serving in remote areas. The combination of centralised appointment and transfer systems undermines the continuity and quality of teaching at disadvantaged schools. Furthermore, the lack of accountability and monitoring has led to the paradox of teachers having almost limitless freedom regarding practice at school level despite strong normative input by the authorities (Stamelos et al., 2012).

4. Investing in education and training

Public expenditure on education is among the lowest in the EU and spent largely on salaries. Public education expenditure as a share of GDP was 3.9% in 2017 (EU average: 4.6%). As a share of total government expenditure, Greece spent 8.2% - less than most other EU countries (EU average: 10.2%). In real (inflation-adjusted) terms, education spending has contracted by 2.1% since 2016 and by a cumulative 14.3% since 2010. The biggest decrease (25.8%) was for 'intermediate consumption', i.e. teaching materials, heating and electricity. This was followed by 'gross capital formation' (-20.4%), e.g. investments in computers, buildings etc. Spending on teachers' pay fell by 12.5%. In 2017, 82.5% was spent on compensation of employees, more than in any other EU member state (EU average: 62%). In 2019, the Council of the EU addressed a country-specific recommendation to Greece calling on it to invest in education and skills (Council of the EU, 2019).

Greece might have almost one fifth fewer school children within 20 years. It is estimated that the proportion of children aged 3-18 will shrink by 12% by 2030 and by almost 20% by 2040¹². This could provide an opportunity to improve the quality and efficiency of the education system. In addition, Greece will need to invest in providing lifelong learning opportunities to address low skills levels across the population.

Figure 3 Share of total government expenditure dedicated to education and spending by category, 2017



Source: Eurostat, COFOG.

¹¹ For a description of their working conditions see: European Commission (2018b).

¹² Eurostat projections.

5. Modernising early childhood and school education

The provision of affordable quality early childhood education and care (ECEC) for under-4s is insufficient. Participation in ECEC by children aged between 4 and school entry age increased from 79.8% in 2016 to 81.5% in 2017, but remains below the EU average (95.4%). In 2017, 20.5% of children up to 3 attended formal childcare facilities — a remarkable rise of 11.6 pps since 2016, yet still below the Barcelona target of 33% set in 2002. Data collection on childcare facilities is scarce but a large gap between demand and supply is apparent (Nikolaidis, 2017). A curriculum and teacher guidance are implemented for kindergartens. For childcare facilities, standards for infrastructure, a framework for goals, staff categories, and responsible monitoring authorities were legislated in 2017. Initial education of childcare staff was extended to 4 years. In 2018, the starting age of pre-primary education was lowered to 4 years with a phase-in until 2021. This shift does not abolish the dichotomy between care-oriented childcare facilities and learning-oriented kindergartens in favor of an integrated approach to ECEC (Rentzou et al, 2018).

Early school leaving has been much reduced in rural areas but remains high among foreign-born people. The proportion of young people aged 18-24 who have left school early is, at 4.7% in 2017, among the lowest in the EU (average: 10.6%). The gender gap was 2.1 pps, with the proportion of men (5.7%) higher than that of women. While early school leaving has declined further since 2016 from 5.4% to 3.9% among native-born people, it has increased among the foreign-born population from 16.9% to 17.9%, thus further widening the gap between the two. Since 2010, Greece has managed to lower early school leaving in rural areas by 12 pps, putting it among the best performers in the EU for that category.

Changes aim to foster a more collaborative school culture, but an integrated approach is lacking. Training has started for staff serving in the educational support centres (PEKES), legislated for in 2018. The 2018 law also provides for the creation of teams of teachers with shared fields of expertise within each school in order to cooperate and exchange ideas and teaching material, and to assess educational outcomes. Initiatives to lessen the high degree of prescriptive centralisation include the thematic week, during which teachers design their own programmes instead of following the central one. Networks across schools have been piloted between nine upper secondary vocational schools, and their extension to general primary and secondary schools is provided for in the 2018 law. However, a comprehensive, research-based approach to teacher professionalisation and school development which allows for monitoring and accountability is still lacking.

The digital school is not yet a reality and digital skills are underdeveloped. An impressive amount of digital educational content has been developed in Greece in recent years and information and communications technology (ICT) features in curricula of all levels. High broadband speed (>100 mbps) exists in 11% of Greek primary schools, 15% of lower secondary and 19% of upper secondary schools¹³. However, infrastructure impediments related to connectivity and up-to-date equipment exist. The share of schools with both strong policy and support in digital education is lower in Greece at all levels compared to the European average (European Commission, 2019a). Thus, digitally trained teachers are still likely to encounter difficulties in using their skills in the classroom. Among the general population, 46% of people aged 16-74 reported to have at least basic digital skills, below the EU average of 57% (European Commission, 2019b). Among the rest, 31% of individual do not have digital skills at all (EU average: 17%). ICT specialists, especially women, and ICT graduates are fewer than on average in the EU¹⁴. The National Coalition for Digital Skills, launched in June 2018, has set up several initiatives to upgrade digital skills among the public, SMEs and civil servants.

Integration of recently arrived migrants into education has so far primarily focused on schools. In 2018/2019 substantial efforts were made to provide schooling for 12 867 refugee children, 8 290 of them in mainstream classes with parallel educational support and 4 577 in separate afternoon schooling facilities. Some 30 kindergartens exist in refugee camps, including those on islands. 690 teachers received dedicated training. Interpretation was provided to assist the enrolment of refugee children and psychologists recruited to support refugee students, families

¹³ National data.

¹⁴ Out of total employment, female employment and total graduates.

and educators. However, integrating refugee children into education remains an uphill struggle, considering that an estimated 28 000 refugee and migrant children reside across Greece (UNICEF, 2019)¹⁵. Particular challenges relate to: allocating teachers qualified for multilingual and diverse settings; teacher training; and resources and access to education for older children and young adults, including at post-secondary and tertiary levels (Tzoraki, 2019). To assess refugees' higher education qualifications, Greece has been part of the Council of Europe project to create the European Qualifications Passport¹⁶.

6. Modernising higher education

Employment prospects have improved for recent tertiary graduates. At 44.3%, the proportion of 30-34 year olds with tertiary education rose further in 2018 (43.7% in 2017). It is above the EU average (40.7%) and the national target for 2020 (40%). At 51.3%, women's tertiary educational attainment is 13.8 pps higher than men's. Among the native-born population, 48.1% had tertiary education, three times more than for foreign-born people at 15.1%. The employment rate of recent tertiary graduates was 59% in 2018, 10 pps higher than in 2015 but still the lowest in the EU. Nevertheless, having a degree improves employability: the equivalent rate for graduates from upper secondary and post-secondary education was, at 49.1%, considerably lower.

New legislation is reforming access to higher education. Each year, the Ministry of Education assigns first-time students directly to higher education departments based on their performance in national university entrance exams and study preferences. While the system is considered very fair, it produces study mismatches and inefficiencies as quite often neither students nor universities achieve their preferences. In addition, upper secondary education is primarily focused on preparing for university entrance exams. After several measures to upgrade upper secondary education (European Commission, 2018), the new university entrance system, enacted in 2019, allows access to low-demand departments without prior exams. Central allocation based on competitive exams is kept for departments facing high demand.

Graduate mobility is mostly outward. In 2017, outward degree mobility — the proportion of graduates obtaining their degrees abroad — was at 12.1%, more than three times above the EU average (3.6%). For master-level graduates, it was five times higher (25.8% v EU 5%). The proportion of graduates from abroad is, at 1.6%, far below the EU average (10.8%) and largely composed of Cypriots. While Greek universities score comparatively well on research, international orientation is underdeveloped and so are knowledge transfer, teaching and learning, and regional engagement (U-Multirank, 2019). The low provision of English-taught programmes at bachelor level and the lack of a coherent national plan for internationalising higher education, are contributing to the low degree of internationalisation (British Council, 2019).

The restructuring of higher education seems not to reflect projected labour market needs. Legislation passed in spring 2019 provides for upgrading the remaining technical education institutions (TEIs) into universities under the process begun in 2018. New departments and degree-level study places will be created. Prior impact assessment has been largely missing, no study by the higher education quality assurance agency or other independent bodies was commissioned. More than 500 new academic staff positions have been earmarked to smooth the transition, but doubts have been raised over the readiness of former TEIs to provide university-level programmes, facilities and staff, given the speed of the transformation. In addition, labour market projections predict an over-supply of high-qualified workers until 2030 but a shortage of medium-qualified workers (Cedefop, 2018). Therefore, together with the generally low attractiveness of vocational education and training (VET), the restructuring appears to be exacerbating the existing skills mismatch.

¹⁵ In 2018, 21 770 registered asylum applications in Greece 2018 were for children.

¹⁶ See: <https://www.coe.int/en/web/education/recognition-of-refugees-qualifications>

Box 2: Several initiatives are tackling brain drain in the tertiary sector

Greece has always experienced emigration but it increased during the economic crisis, especially among the highly skilled. The high proportion of small companies in the economy and the related low level of research and innovation, especially in the private sector, have limited the potential to absorb highly educated people (Labrianidis, 2017).

The Hellenic Foundation for Research and Innovation, established in 2016, supports young scientists and seeks to reverse the outflow of leading scientists abroad. The foundation grants scholarships for doctoral and post-doctoral studies; funds high-quality research projects, researchers and faculty members; finances the purchase of research equipment; enables HEIs and other stakeholders to access innovative research programmes; and supports the creation and operation of start-ups which exploit research results. It is estimated that the budget of EUR 240 million for 2017-2019 will create more than 4 000 jobs for young scientists by end-2019.

The 'Research, create, innovate' programme supports the creation of jobs for highly qualified staff in the research and development departments of innovative businesses. It also finances the collaboration of these departments with public universities and research centres. The first phase of the programme, financed with EUR 332 million, created 3 400 full-time jobs. The second phase will be funded with EUR 200 million. Research suggests putting an equal focus on interconnecting permanent expatriates with the Greek economy as on 'return and retain' policies (Labrianidis, 2017).

7. Modernising vocational education and training

Important reforms have been adopted but the attractiveness of the sector is still low. The proportion of upper secondary pupils enrolled in VET was 28.8% in 2017 (EU average: 47.8%) and has been slowly but steadily declining since 2013 while the EU average has been relatively stable around 48%. The employment rate for VET graduates, though still low, has risen from the all-time low of 37.5% in 2015 to 50.5% in 2018 (EU average: 79.5%). The 'New beginning at EPAL' programme has been expanded to all 401 upper secondary vocational schools. The optional fourth apprenticeship year with a strong work-based learning component for upper secondary VET graduates was expanded. Demand for apprentices is increasing but, overall, apprenticeship offers by companies are still low at 48% of all offers.

Training of VET teachers and trainers is a key challenge. The 2017 'Apprenticeship quality framework' stipulates the creation of a register of certified in-company trainers and requires them to attend training programmes designed by the national employment service, chambers and education institutions. The second phase of teacher training on apprenticeships, in May 2019, targeted 1 500 teachers. From September 2019 the certification of teaching competences of VET teachers and adult trainers will become a prerequisite for their enrolment in state-funded non-formal training programmes in initial VET and continuing VET (Law 4485/2017). A partnership for VET, led by the Central Union of Chambers and planned for end-2019, aims to raise awareness and train in-company trainers.

8. Developing adult learning

Regulatory initiatives to build up adult learning are ongoing but implementation is lagging. Participation in adult learning in 2018 remained very low at 4.5% (EU average: 11.1%). During 2017, around 1 000 adults aged 25 or above acquired an upper-secondary qualification out of nearly 1.5 million adults with low educational attainment. Two new laws were passed in 2018 on the definition of key concepts in adult learning and on the validation of programmes offered by municipal lifelong learning centres. The process of selecting adult educators for these centres ended recently after 2 years. Municipalities have launched a public call for interest for course offers in 145 different subjects so that the centres can become operational in 2019. Adult learning will also be available in all prisons.

The process of accrediting adult educators has undergone several changes since 2012. The National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP) is responsible for the accreditation of adult educators. It has developed an adult educator occupational profile which serves as the framework for the accreditation process. Since March 2019, the Greek adult educators' community has its own European Platform for Adult Learning.¹⁷

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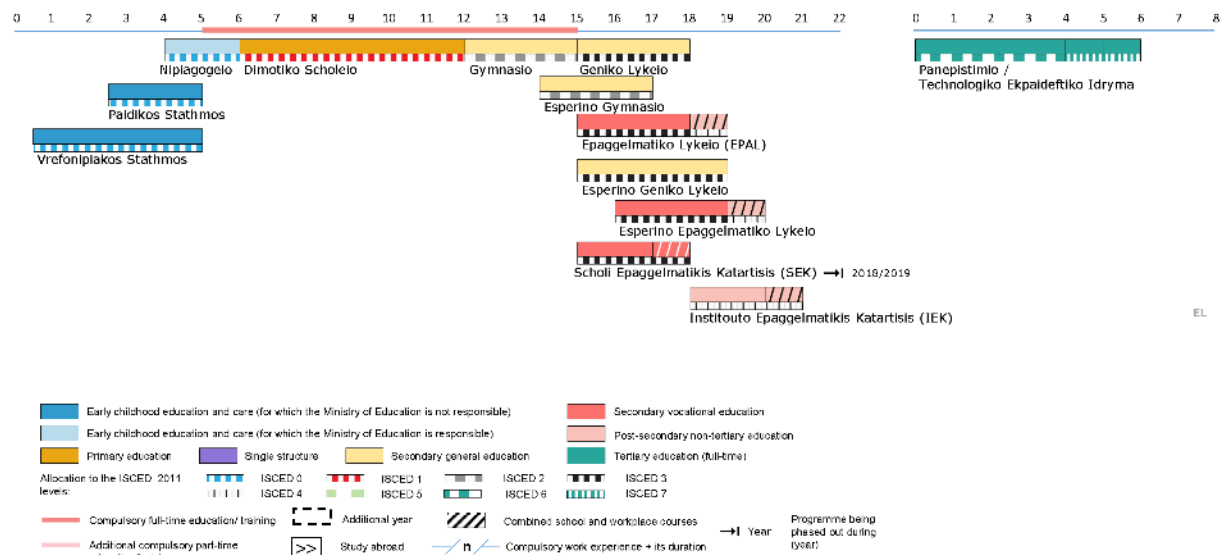
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¹⁷ See: www.iky.gr/el/epale

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, 2019. 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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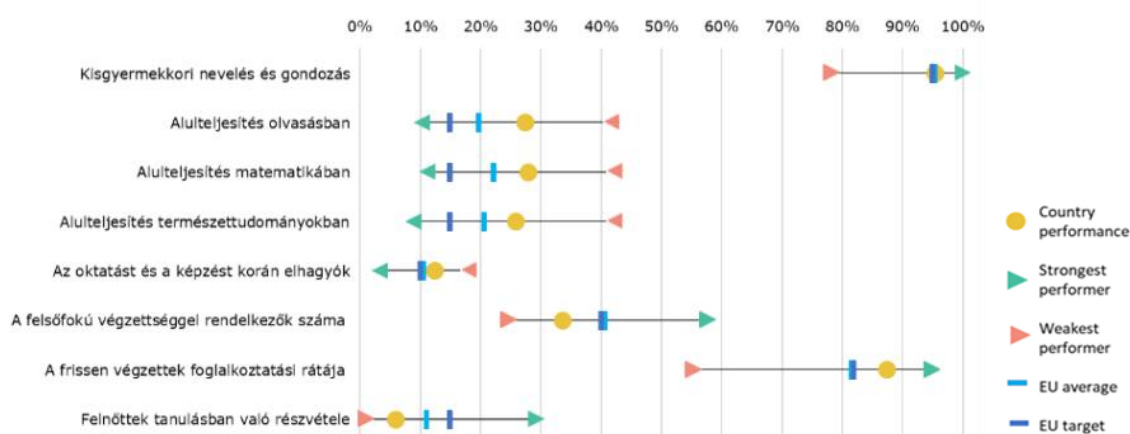
HUNGARY

1. Key indicators

			Hungary		EU average	
			2009	2018	2009	2018
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			11.5%	12.5%	14.2%	10.6%
Tertiary educational attainment (age 30-34)			24.0%	33.7%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			94.8%	95.6% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading		17.6%	27.5% ¹⁵	19.5% ^{EU27}	19.7% ¹⁵
	Maths		22.3%	28.0% ¹⁵	22.3% ^{EU27}	22.2% ¹⁵
	Science		14.1%	26.0% ¹⁵	17.7% ^{EU27}	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)		ISCED 3-8 (total)	75.5%	87.5%	78.3%	81.6%
Adult participation in learning (age 25-64)		ISCED 0-8 (total)	3.0%	6.0%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	4.1% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)		:	3.8% ¹⁷	:	8.0% ¹⁷
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		5.4%	5.1% ¹⁷	5.2%	4.6% ¹⁷
	Expenditure on public and private institutions per student in € PPS	ISCED 0	:	€5 140 ¹⁶	:	€6 111 ^{15,d}
		ISCED 1	€3 362 ¹²	€3 899 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
		ISCED 2	€3 431 ¹²	€4 108 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
		ISCED 3-4	€3 316 ¹²	€6 135 ¹⁶	:	€7 730 ^{14,d}
		ISCED 5-8	€6 830 ¹²	€7 231 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born	11.4%	12.6%	13.1%	9.5%	
	Foreign-born	:	:	26.1%	20.2%	
Tertiary educational attainment (age 30-34)	Native-born	23.6%	33.4%	33.1%	41.3%	
	Foreign-born	41.3%	44.9%	27.7%	37.8%	
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	66.4%	84.0%	72.5%	76.8%	
	ISCED 5-8	84.8%	91.5%	83.8%	85.5%	

Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission's Joint Research Centre (JRC) 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, u = low reliability, 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

- 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.

3. A focus on teachers

Alongside increased participation in early childhood education and care (ECEC), staff qualification levels have been raised. The 2013 teacher career model and progression path was extended to ECEC staff, who are now required to hold a tertiary degree (similar to other teachers) in pre-school education. This attracted a big increase in applicants: student enrolments grew by more than 50% from 2013 to 2014. In 2016, their qualification requirements were further updated to include competencies in children's rights, teaching through arts, inclusion, and support to disadvantaged children. The increase in graduate numbers, however, has not led to a significant increase in the number of professionals working in ECEC since many of them were working already at the time of starting their studies. Wages for pre-school teachers remain low, especially for entrants, who earn 182 700 HUF/month (EUR 577). 16% of recent graduates do not work in the profession (OH, 2018d).

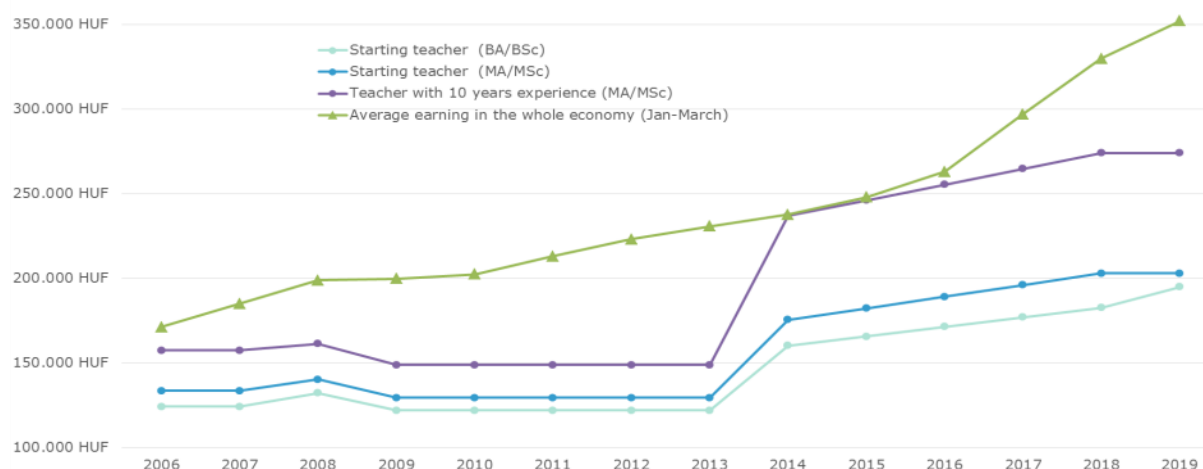
Teachers' job satisfaction is somewhat below the EU average. According to the 2018 OECD Teaching and Learning International Survey (TALIS), the proportion of teachers satisfied with their job is slightly below the EU average (88.1% v 89.5%). 72.0% say that if they could decide again, they would still choose to become a teacher (EU average: 77.6%); among teachers with more than 5 years' experience this drops to 71.3% (EU average: 76.4%). The proportion of teachers who feel well or very well prepared in using information and communications technology (ICT) is much higher than the EU average (65.7% v 39.4%). However, 20.5% report the need for professional development in ICT skills (EU average: 16.1%). Continuous professional development is obligatory for promotion. 94.5% of lower secondary teachers participated in 2018, which corresponds to the OECD average.

There is an increasing shortage of teachers, especially in poorer regions and for specific subjects. The teacher workforce is ageing: in 2017 the proportion of teachers aged over 50 was at 41% while the share under 30 made out only 6%¹⁸. The number of applicants for initial teacher training has increased in recent years, but dropout rates are high and fewer than half of graduates actually enter the profession¹⁹. The shortage is currently worst in poorer, disadvantaged areas; for science subjects and foreign languages; and in vocational education and training. Low salaries are one factor (Figure 2). The statutory salary of a starting teacher in purchasing power standards is one of the lowest in the EU (Eurydice, 2018). The National Chamber of Teachers (NPK, 2019) has called for a more dynamically rising salary scale in the first 10 years of career, and for restoring the ratio between the starting salary and the minimum wage to where it was in 2013. One measure to help retain graduates in the profession is the 'Klebensberg stipendium'. Students in initial teacher training and special education are entitled to the stipendium on condition that they work for a time at a state school after graduation. In addition, a grant scheme was set up in 2017 to contribute to students' living costs during their teaching practice year.

¹⁸ Source: Eurostat [educ_uae_perp01]

¹⁹ Source: KIR-STAT database.

Figure 2 The evolution of earnings of teachers and in the whole economy (2006-2019)



Source: Central Statistical Office; 2011 Act CXC on National School Education; Acts on the Central Budget (2006-2019)

Recent legislative changes re-established some previous competences of school principals. Legislative changes in 2011 restricted schools' autonomy on teaching content, textbook choice and management of financial and human resources. The duties of employer and financial management were transferred from school principals to the state. These restrictions do not apply to non-state schools, which thus can offer more attractive conditions to both teachers and pupils. Some principals' powers were restored in 2017: decisions on appointments and dismissals of teachers are taken together with the school district leader. Principals can also manage a certain part of the budget for everyday expenses. The responsibility for school maintenance previously held by municipalities was taken over by the state in 2017, ending their role in the financing, maintenance and management of schools.

4. Investing in education and training

General government expenditure on education as a proportion of GDP was 5.1% in 2017, above the EU average of 4.6%. Compared to 2001, real (inflation-adjusted) expenditure²⁰ on education increased by 11.5% during the recession (2007-2009) and by 23.5% in 2014-2016. The 2016-2017 spending rise in real terms (4.5%) went mainly to higher education, while spending on secondary and post-secondary non-tertiary education dropped by 2.4%.

The number of schools has not been aligned to the reduced school population, with risks for public spending efficiency. The year-on-year decrease in the school population was 0.8% in 2017/2018 (KSH, 2018); the decline between 1990 and 2016 was 10 times greater than the decrease in the number of primary schools. This reduces efficiency: the proportion of unused school capacity increased sharply to 7% in the elite type 6- and 8-year secondary schools, 26% in traditional grammar schools (*gimnázium*), 46% in vocational grammar schools (*szakgimnázium*) and as high as 64% in vocational training schools (*szakközépiskola*) (OH, 2018a). The pupil-teacher ratio was at 11 to 1 in primary education in 2016, against an OECD average of 15 (OECD, 2018). Maintaining the large number of schools has in effect increased parental choice and the scope for segregating students by socio-economic status (Radó, 2018).

Differences in the regulatory framework for schools based on their status are impacting on equity. In 2001-2016, the proportion of church schools increased from 5% to 15.8% in basic education and from 10.4% to 22.8% in upper-secondary education (MTA, 2018). Church schools are exempt from some legislative restrictions and in particular do not participate in system-level desegregation measures, thereby limiting the measures' impact. There is a growing concentration of disadvantaged and Roma pupils in certain schools: the proportion of basic schools with a Roma population of 50% or higher increased from 10% in 2008 to 15% in 2017, partly reflecting the demography of the locality in which the school is located. Pupils' family background, as measured

²⁰ Expressed at constant 2010 prices by using the implicit deflator for final consumption expenditure of the general government.

by the composite indicator used in the national competence test, is significantly more favourable in church schools than in state schools²¹. An amendment to the National School Education Act²² adopted in July 2019 has allowed churches to choose their own text books. It also removed the right of teaching staff, pupils, parents or national minorities to express an opinion on school head appointments at state schools. In its 2019 country-specific recommendation, the Council of the EU recommended that Hungary take measures to improve education outcomes and increase the participation of disadvantaged groups, in particular Roma, in quality mainstream education (Council of the European Union, 2019).

5. Modernising early childhood and school education

Measures to improve access to and the quality of early childhood education and care (ECEC) will help reduce inequalities in educational outcomes. 95.6% of children aged 4-6 participate in ECEC, around the EU average. In 2016 Roma participation was 91%, close to the national average and by far the highest among Member States in the region (FRA, 2016). As performance gaps appear at early ages, lowering the age of compulsory participation in kindergarten from age 5 to 3 from 2015/2016 has been a positive step that is likely to improve children's later performance at school. To ensure participation, the family allowance was made conditional on kindergarten attendance. In 2017, 13.8% of children under 3 attended ECEC (EU average: 34.2%)²³.

Box 1: A springboard for disadvantaged children: the Sure Start programme

The Sure Start Children's Houses (SSCH) programme ensures access to early development and day care for children below 3 in disadvantaged regions, especially in poor villages with a Roma population. Begun in 2006, its main aim is to prepare disadvantaged young children for kindergarten through physical, mental, social and emotional development.

The programme is based on strong cooperation with parents and partners from health, social and early childhood care services. Parents are involved in children's activities, which helps to develop their parenting skills. One of the most recognised added values of the programme is the involvement of Roma in different services (NESET, 2018). Participation empowers Roma parents, allowing them to widen their social network and develop relationships with other parents, institutions and services.

In 2013, the Sure Start programme was integrated into the Child Protection Law as a basic component of child welfare services. Since EU funding ended in 2014, the programme has been funded from the national budget. Currently there are some 135 SSCHs funded across the country and the government plans to increase this to 240 in 2019. A recent evaluation of the programme recommends further developing quality assurance, making the involvement of Roma workers compulsory, and financing the further training of staff as well as the participation of teachers, speech therapists and child psychologists (T-TUDOK, 2018).

The early school leaving rate (ESL) remains high, especially in disadvantaged regions and for vocational training. In 2018, ESL remained at 12.5%, having seen an increase in recent years which goes against the decreasing EU average (now at 10.6%). The rate is particularly high among Roma (65.3%). Participation of 17 and 18 year-olds in secondary education dropped sharply between 2011 and 2016 (from 98% to 85%) after the age of compulsory education was lowered from 18 to 16 in 2012. The distribution of pupils affected varies greatly by school type and region (OH, 2018b). In the three most affected counties²⁴, more than 15% of pupils are at risk of dropping out. In vocational training, this figure is 19%. ESL correlates strongly with local education outcomes, which are lowest in rural settlements (OH, 2018c). In rural communities the capacity to provide quality education services is more limited and teacher shortages are more pressing. Hungary has the largest urban/rural gap in education outcomes, before accounting for socio-economic status, of all OECD countries (OECD, 2019b) (Figure 3).

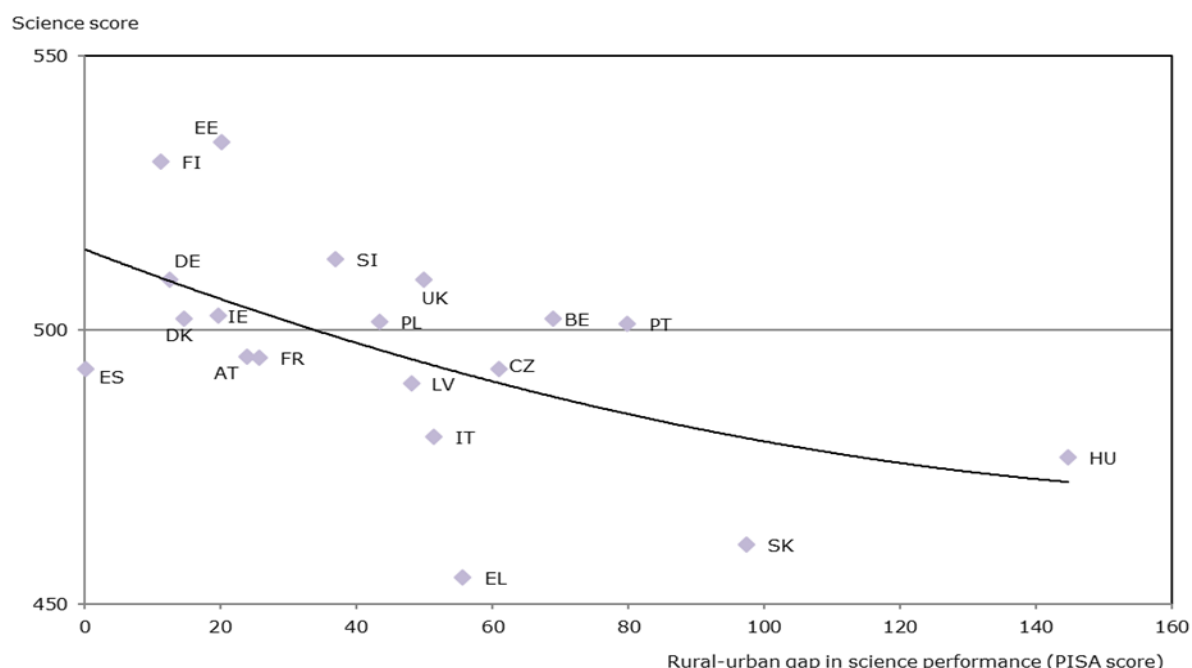
²¹ The 0 value of the index is the average family background status of all pupils tested. In 2017 the average value was minus 0.05 in public schools and 0.18 in church schools in grade 6. Calculations by Kriszta Ercse.

²² Act LXX of 2019 on National Public Education

²³ Source: EU-SILC [ilc_caindformal]

²⁴ Borsod-Abaúj-Zemplén, Nógrád and Szabolcs-Szatmár-Bereg

Figure 3 The urban-rural gap and average science performance



Source: OECD PISA 2015

The 'tanoda' after-school programme has been strengthened to reduce inequalities.

'Tanoda's are after-school child-welfare services offered to disadvantaged pupils, in particular Roma, as one of the measures to reduce education gaps. Other measures in the package include: free school meals for disadvantaged pupils; free Sure Start childcare services in disadvantaged regions; and the extension of compulsory participation in ECEC. Tanoda supports pupils' school performance and development through personalised support and non-formal and informal ways of learning. The first after-school houses were created in the 1990s as civil initiatives and were financed from the European Social Fund from 2004 onwards. As of 2019 tanoda has been integrated into the Child Protection Law²⁵ as a basic child welfare service, supported by a national grant system of HUF 2.5 billion (EUR 7.82 million). This allows the financing of around 200 after-school houses for around 15 000 disadvantaged pupils annually. To ensure quality, only organisations that provided tanoda services in the previous year were eligible to apply and all organisations working as tanoda need to acquire accreditation by June 2019.

The number of foreign languages learned in secondary school is below the EU average. In secondary education 49% of pupils learn two or more foreign languages (EU average: 59%). To improve pupils' foreign language skills, in February 2019 the government announced the launch of a grant scheme supporting two-week summer language courses abroad for 9th and 11th graders. Around 140 000 pupils a year are expected to benefit from the scheme with a budget of HUF 90 billion a year (around EUR 280 million), a substantial sum equivalent to 12% of total expenditure on secondary education in 2017. However, the expected impact of the language trips is likely to be limited given the increasing shortages of qualified language teachers.

The choice of textbooks is limited by the decision to create a monopoly for their publication and distribution. In 2013, the right to distribute textbooks was given to the single distributor KELLO (Könyvtárellátó Nonprofit Kft.), which barred private distributors from the market. In March 2019 the European Court of Human Rights (ECHR, 2019) ruled that by 'monopolising' the textbook distribution market, the state had violated companies' property rights. Schools may only use their textbook budget for orders from a list of licenced textbooks. Most textbooks from independent publishers are expected to disappear by 2019/2020 because their licences were not extended in 2019 by the Educational Authority.

²⁵ 40/2018. (XII. 4.) ministerial decree

6. Modernising higher education

Tighter conditions for admission to higher education are likely to restrain tertiary attainment rates. The employment rate of recent tertiary graduates in 2018 was 91.5%, well above the EU average of 85.5%, reflecting strong demand for highly skilled workers. Tertiary graduates also enjoy the highest wage premium in the EU (OECD, 2017). However, against the background of demographic decline and outward migration trends²⁶, current enrolment and completion trends make it harder to respond to this high demand: the tertiary educational attainment rate among 30-34 year-olds stood at 33.7% in 2018, well below the EU average (40.7%). Enrolment numbers dropped by 18% in 2012 when the government announced it was reducing state-financed student places and introducing study contracts. From 2020, a foreign language certificate of proficiency level B2 and an advanced level matura exam will be required to enter all but short-cycle tertiary programmes. This may further reduce the already shrinking pool of applicants, as only 48% of applicants currently hold a B2-level language certificate (MTA, 2018), while the secondary school curriculum targets only B1 level. The Ombudsman found that the proposed language requirement would need to be accompanied by a greater allocation of human and other resources to language teaching to avoid infringing constitutional rights (Ombudsman, 2017).

Student scholarships are being increased in two steps. From February 2019 the per capita financing of higher education institutions has increased from HUF 119 000 (~EUR 380) to HUF 128 520, and in 2020 it will reach HUF 166 600 (~EUR 533). This money is distributed among students in the form of the social grant, basic student support and study scholarship. In 2018/2019, 78% of newly admitted students received a state-financed place; the remaining 22% self-financed their studies. Among students receiving state financing, a maximum of 50% may be entitled to a study scholarship.

A new financing model is expected to bring more flexibility to the operation of higher education institutions. In autumn 2018, the government transferred supervision and maintaining rights over Corvinus University of Budapest from the Ministry of Human Capacities to the Ministry of Innovation and Technology. In mid-2019, a public foundation named Maecenas Universitatis Corvini was established which holds all the estates of the university, to which the state has allocated extensive assets whose dividends can be used to run the university. The university thereby becomes exempt from the scope of the Budget Law which covers all public institutions. This should give it more flexibility and autonomy in its operation and enable more efficient cooperation with the business sector for innovation. The aim is to introduce more efficient operating models across higher education.

Recent legislative changes are seen as limiting academic freedom. A 2017 legislative amendment stipulates that any foreign institution outside the European Economic Area that grants degrees in Hungary must operate in its country of origin and be governed by a bilateral agreement between the two states. Following lengthy discussions with the authorities, the Central European University, specifically concerned by the amendment, decided to move its U.S. degree programmes to Vienna from September 2019.

²⁶ Hungary is the only country in the EU where the graduate migration rate is higher than the rate in less-qualified groups (Hárs, 2019).

Box 2: The Graduate Tracking System (Diplomás pályakövetési rendszer, DPR)

European Social Fund (ESF) project: TÁMOP-4.1.3 Systemic development of higher education services

Duration: March 2012–February 2015

Budget: HUF 1.57 billion

Implementing body: Educatio Ltd. in consortium with the Educational Authority

DPR's aim is to inform applicants to degree programmes about career prospects and make it easier to adapt degree programmes to the jobs market.

The system combines data from surveys on graduates' careers and from different administrative registers. The methodology and central elements of the survey module were developed within the ESF project. In addition, several higher education institutions were given funding to develop their own tracking systems, based on a standardised methodology.

Surveys are carried out on graduates' careers 1, 3 and 5 years after graduation. The administrative data integration module links together the Higher Education Information System and the Student Loan Centre with other public registers, such as those for tax, social security health and labour. Research data will be accessible in an open searchable online interface from October 2019.

7. Modernising vocational education and training

A medium-term strategy was adopted in March 2019 to reform VET from 2020-2021. The 'Vocational Education and Training 4.0' strategy aims to make VET more attractive and reduce early school leaving. Vocational grammar schools — the path with a higher element of general education — will be renamed 'technical schools' and lead to a general secondary education degree and a vocational degree. Vocational secondary schools — for less academically inclined pupils — will be renamed 'vocational training schools'. Their first year will be dedicated to sectoral subjects, followed by 2 years of dual training. Pupils completing basic (lower secondary) education with major weaknesses may attend a '0' orienteering year to acquire the basic skills necessary for VET. Half or one-year-long basic skills development programmes will be offered to pupils who are unable to complete basic education.

Further steps were made to bring the worlds of education and work closer together. In 2018 the employment rate of recent VET graduates (ISCED 3 and 4) was 87.1%, well above the EU average of 79.5%. The Ministry for Innovation and Technology established the VET Innovation Council in September 2018 as a forum for dialogue between the government and stakeholders. Its tasks are to determine the direction of future developments and make recommendations for infrastructural developments and the content-related supervision of VET and adult training. From 2019-2020, in-company instructors are required to follow a course organised by the Hungarian Chamber of Commerce and Industry to obtain an instructor qualification.

Chancellors have been introduced in VET centres in line with the higher education model. The status of chancellor as senior manager appointed by the government was created from January 2019. The leadership of the vocational centre remains with the general director, while the chancellor will deal with various economic, financial, legal and labour-related issues and be responsible for overall asset management. The chancellor has the right of consent on all issues regarding the operation, structure and finances of the centre.

8. Developing adult learning

Promoting adult participation in learning remains a challenge, especially among the unemployed. Only 6.0% of adults participated in recent adult learning, well below the EU average of 11.1%. People in employment are about four times more likely to participate in training than unemployed people. In 2017 there were 858 000 adults (aged 25-64) with only a low-level of educational attainment, but only 438 000 corresponding jobs with an elementary skills requirement. 50% of the adult population (aged 16-74) have an insufficient level of digital skills, against the EU average of 43% (European Commission, 2019). This suggests that a substantial upskilling effort focused on the population with low skills is needed.

Skills shortages are comparatively high in Hungary. The number of registered unfilled positions decreased somewhat in the first quarter of 2019 but remains high at 34% more than at the same time in 2017 (KSH, 2019). In VET, much emphasis has been put in recent years on adapting the curriculum to the immediate needs of companies. Though manufacturing companies report mainly a need for vocational secondary school graduates with practical training experience, they value these employees in all physical occupations less than employees from vocational grammar schools (Köllő, 2018).

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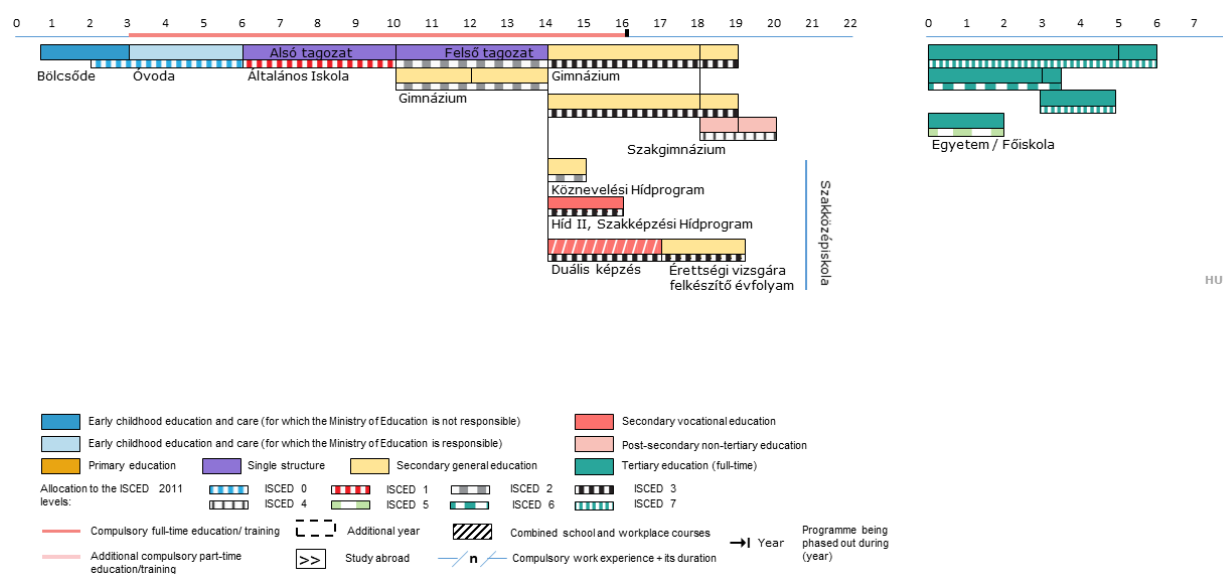
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Annex I: Key indicator sources

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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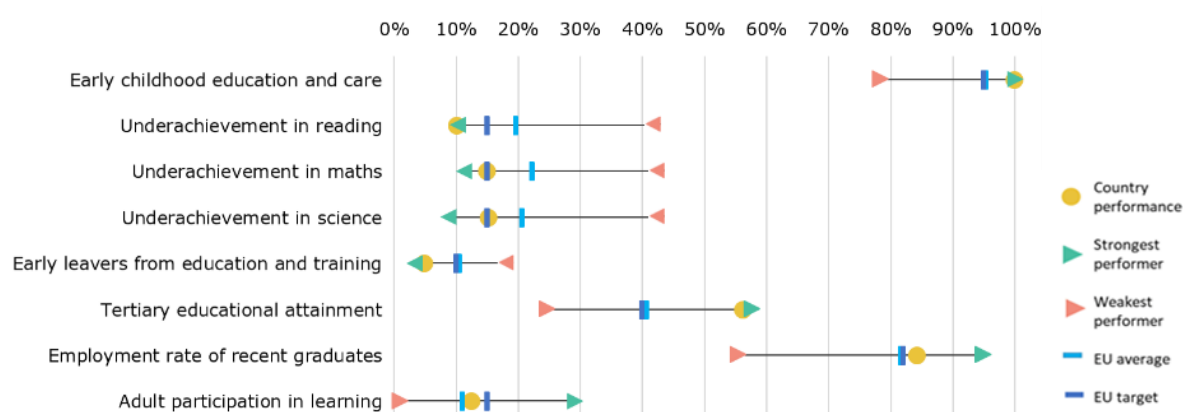
IRELAND

1. Key indicators

		Ireland		EU average	
		2009	2018	2009	2018
Education and training 2020 benchmarks					
Early leavers from education and training (age 18-24)		11.8%	5.0%	14.2%	10.6%
Tertiary educational attainment (age 30-34)		50.4%	56.3%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)		73.6%	100.0% ^{17,d}	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading	17.2%	10.2% ¹⁵	19.5% ^{EU27}	19.7% ¹⁵
	Maths	20.9%	15.0% ¹⁵	22.3% ^{EU27}	22.2% ¹⁵
	Science	15.2%	15.3% ¹⁵	17.7% ^{EU27}	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)					
	ISCED 3-8 (total)	77.3%	84.3%	78.3%	81.6%
Adult participation in learning (age 25-64)					
	ISCED 0-8 (total)	6.6%	12.5%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)	:	5.7% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)	:	: ¹⁷	:	8.0% ¹⁷
Other contextual indicators					
Public expenditure on education as a percentage of GDP		4.7%	3.3% ¹⁷	5.2%	4.6% ¹⁷
Education investment	ISCED 0	:	€5 392 ¹⁶	:	€6 111 ^{15,d}
	ISCED 1	€6 667 ¹²	€6 161 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
	ISCED 2	€8 467 ¹²	€7 167 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
	ISCED 3-4	€9 095 ¹²	€6 995 ¹⁶	:	€7 730 ^{14,d}
	ISCED 5-8	€11 500 ¹²	€9 996 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born	11.2%	5.4%	13.1%	9.5%
	Foreign-born	14.9% ^u	3.4% ^u	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born	48.5%	54.4%	33.1%	41.3%
	Foreign-born	56.4%	59.7%	27.7%	37.8%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	65.0%	74.4%	72.5%	76.8%
	ISCED 5-8	84.3%	89.5%	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 section 10 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

- 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 is implementing initiatives aimed at upskilling and increasing adult participation in learning and training, but the numbers of low-skilled adults in the population remain sizeable.

3. A focus on teachers

The teaching profession attracts high academic performers, and measures are being taken to increase diversity. National research (Heinz and Keane, 2018) on 2014 entrants to initial teacher education confirmed that primary teaching remained a popular career choice attracting high academic achievers. It also showed that only 18% of the entrants were men, and an absence of non-Irish nationals. This confirms EU-level analysis showing that migrant groups are poorly represented in Ireland's teaching profession (Donlevy et al., 2016). The gender gap has widened: the proportion of women teachers from primary to upper secondary levels increased by 8 pps to 80% over 2005-2016, above the OECD EU-22 average of 77% (OECD, 2018). The proportion of women among university teachers, where they are under-represented, has also increased, by 5 pps to 44%, approaching an equal distribution. Ireland has recently launched several programmes to increase diversity among teachers. The 'Turn to teaching' programme, funded under PATH²⁷, at Maynooth University aims to support over 100 students from marginalised backgrounds to become teachers, including from the Traveller community, migrants, mature students, lone parents and disadvantaged backgrounds. In September 2019, Dublin City University will launch a teacher education programme for students who are deaf or hard of hearing. Other universities have announced similar initiatives²⁸.

Measures to address teacher shortages have been reinforced but results are still awaited. There have been concerns about teacher supply in primary and post-primary schools — at primary level for substitute teachers, and at post-primary level for teachers of maths, sciences, Irish, modern languages and home economics. Forward planning has been hampered by data gaps on post-primary teacher supply and demand (European Commission/EACEA/Eurydice, 2018b). The Teacher Supply Action Plan²⁹ published in November 2018 aims to: increase the numbers of teacher graduates, review school placement guidelines, promote the profession, collect data on the primary and post-primary sectors, and develop a recruitment portal for teachers by 2019/2020. Higher education institutions are to expand the number of places in undergraduate and postgraduate teacher education programmes from 1 650 in 2018 to 1 900 in 2019, and new programmes are proposed in the subject areas affected by shortages. The Action Plan for Education 2019 endorses the teacher supply plan, including baseline data collection and analysis, with a focus on immediate supply gaps. While pay levels for teachers at each stage of the career compare well with the rest of the EU, (European Commission/EACEA/Eurydice, 2018a), there is continued concern as teachers who entered the profession after 2010 are on lower pay scales. Unions argue that teacher recruitment difficulties result, at least partly, from this practice³⁰. National surveys in 2018 confirm also low satisfaction among secondary school teachers³¹ and school heads³² caused

²⁷ The Programme for Access to Higher Education Fund

²⁸ See: <https://www.irishtimes.com/news/education/teaching-initiative-aims-to-diversify-white-middle-class-profession-1.3464830>

²⁹ See: <https://www.education.ie/en/Publications/Education-Reports/teacher-supply-action-plan.pdf>

³⁰ See: <https://www.breakingnews.ie/ireland/minister-to-address-issue-of-pay-for-new-teachers-as-union-warn-of-recruitment-crisis-900082.html>

³¹ 2018 survey of members by second-level teacher trade union, the ASTI: <https://www.rte.ie/news/education/2018/0327/950431-teachers-asti-survey/>, <https://www.asti.ie/news/latest-news/news-article/article/survey-finds-increased-work-demands-impacting-teachers-job-satisfaction-and-wellbeing/>

³² See: <https://www.irishtimes.com/news/education/leadership-crisis-why-do-so-few-teachers-want-to-be-principals-1.3684293>

mainly by heavy workload and stress. On 24 September 2018, an agreement was reached between the government and the public services committee of ICTU on accelerated incremental progression for teachers recruited since 2011.

Ireland continues to improve initial teacher education. All initial teacher education programmes that lead to registration must have professional accreditation from the Teaching Council of Ireland. Both primary and post-primary programmes were extended and reconfigured in accordance with the National Strategy to Improve Literacy and Numeracy among Children and Young People (2011-2020)³³ and the Teaching Council's Policy Paper on the Continuum of Teacher Education and Criteria and Guidelines for Programme Providers (2011). The increased duration allows for substantial periods of school placement. Specific minimum entry requirements for entrants for Bachelor of Education programmes (2019) and the Professional Master of Education (2021). Since 2016/2017, *Droichead* became the induction route for newly qualified teachers. Its main objective is to support their professional learning through engagement with more experienced colleagues and reflection on professional learning and practice. As teachers have up to 36 months to complete *Droichead*, this induction moves quite seamlessly into continuing professional development (CPD).

CPD is considered both a right and a responsibility of teachers. This is specified in the Policy on the Continuum of Teacher Education³⁴. *Cosán*, which is the national framework for teachers' learning since 2016, sets out the values, principles and standards that guide teachers' learning. National evidence shows that teachers engage in personal and professional learning in various ways: formal and informal, school-based and external to the school, individual and collaborative. However, as indicated in *Cosán*, teachers' learning needs to be monitored to ensure that this strong engagement keeps up with emerging needs. The Action Plan for Education 2019 commits to developing programmes to support specific curricular areas at primary and secondary levels and implementation of the junior cycle reform. The plan also commits to implementing the framework for professional development in STEM (science, technology, engineering, mathematics). It will be important to see how effective these supports are in equipping teachers to deliver the subjects concerned.

School heads receive structured support. Since 2016, support for school leaders has been largely provided by the Centre for School Leadership (CSL) through individual mentoring. In 2018/2019, CSL has matched 288 newly appointed principals with mentors. A new postgraduate Diploma in School Leadership jointly awarded by a consortium of third-level institutions was established in September 2018 at the request of the Department of Education and Skills (DES) and CSL. The programme is a part-time (18 months) blended learning professional diploma; it is open to approximately 300 participants annually.

Box 1: Improving initial teacher education

Ireland aims to further improve initial teacher education 'to provide practitioners with the right skills for 21st century teaching, learning and assessment'

The goals of the Action Plan for Education 2019 are ambitious. It states that 'leadership, management, quality frameworks, teaching methods, and initial and continuing training will be supported to operate to the highest standards across the spectrum of education and training provision, with a range of inspection and evaluation models providing transparency and quality assurance'.

Among the key actions planned for 2019 are measures to improve professional qualifications and standards within the early-years sector, in particular the development of a workforce development plan.

A new 'teacher workforce data model' should facilitate better planning of teacher supply and demand, and help to address teacher shortages.

³³ See: https://www.education.ie/en/Publications/Policy-Reports/lit_num_strategy_full.pdf

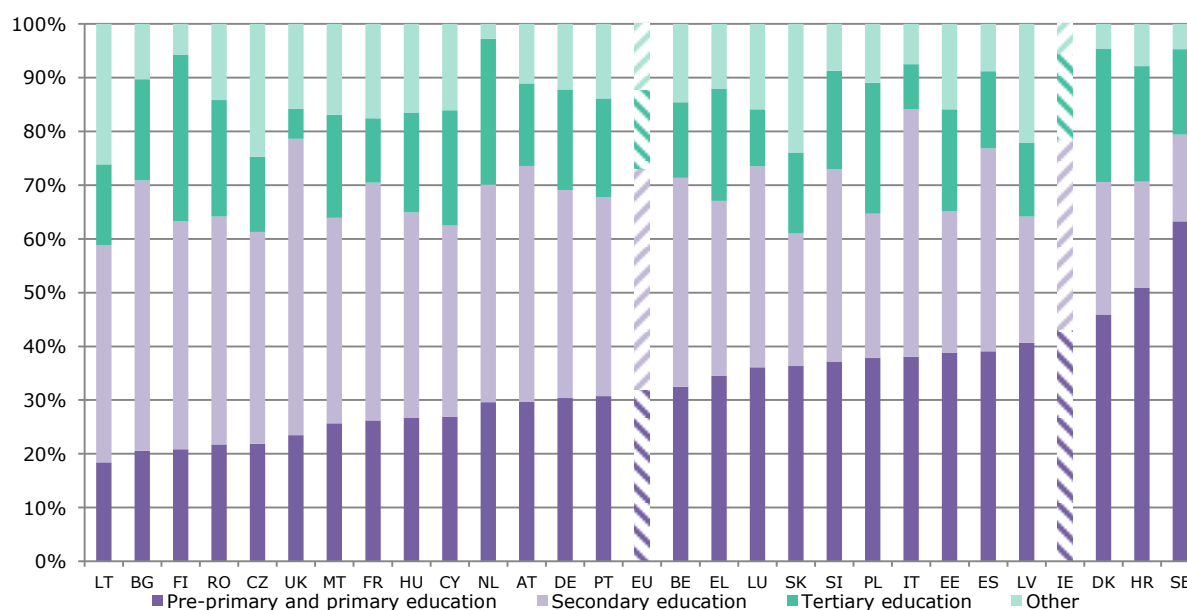
³⁴ See: <https://www.teachingcouncil.ie/en/Publications/Teacher-Education/Policy-on-the-Continuum-of-Teacher-Education.pdf>

4. Investing in education and training

Ireland continues to increase expenditure on education. Public expenditure on education as a proportion of GDP is not a fully reliable indicator, given the specific structure of Irish GDP³⁵. Measured as a percentage of the total public budget, Ireland spent 12.4 % on education in 2017, more than in 2016 (12.1%) and above the EU average (10.2%). In real terms, public spending on education increased by 3% between 2016 and 2017. Pre-primary and primary education received half of the new funding; the share devoted to this sector is among the highest in the EU (Figure 2). For 2019, Ireland has dedicated EUR 10.8 billion to education, up 7% from 2018. Preschool, primary and secondary education account for EUR 7.4 billion, up 5%; higher education accounts for EUR 1.6 billion, up 1%. The two largest percentage increases are for skills development, at EUR 436 million (up 16%), funded in part by the national training fund levy on employers, and capital services, at EUR 852 million (up 23 %) (Rogers, M., 2018).

Public expenditure on higher education remains insufficient compared to the rising number of students. While the number of higher education students increased by 15.5% between 2007-2009 and 2014-2016, total real public expenditure decreased by 12.5%³⁶. In 2016, spending per third-level student (EUR 9 699.5) was the lowest since 2012, dropping by 16% against 2015 (EUR 11 557).³⁷ Recent research by the European Universities Association shows that Ireland is one of just two European countries where higher education is considered to be 'in danger' due to a funding shortfall and rising student numbers³⁸. In 2018, Ireland decided to reform the funding model for higher education (DES, 2018b), but precise plans to address the need for significant additional spending as recommended by the expert review are still awaited³⁹ (Ryan J., 2018).

Figure 2 General government expenditure on education by level of education, 2017



Source: Eurostat. General government expenditure by function (COFOG)

Ireland has adopted the Action Plan for Education 2019. In March 2019, the Prime Minister launched *Empowering through Learning*, the Action Plan for Education 2019, which is part of the

³⁵ Using GDP, the figure would be 3.3% in 2017, whereas using the GNI* specifically adapted to Ireland, it would be c. 5.3% (DG EAC own calculations based on Eurostat, UOE, 2017).

³⁶ Eurostat, UOE, 2017. Online data codes: gov_10a_exp, educ_uoe_enra01 and educ_enr1tl.

³⁷ Eurostat, UOE, 2017. Online data code: educ_uoe_fine09.

³⁸ See: <https://www.irishtimes.com/news/education/third-level-system-in-danger-from-underfunding-and-rising-student-numbers-1.3775066>.

³⁹ The Action Plan for Education 2019 envisages undertaking, by end-2019, economic analysis of the options included in the Expert Group Report on Future Funding for Higher Education requested by the Joint Oireachtas Committee on Education. The preparation of the report is supported by the European Commission's Structural Reform Support Service.

DES's multiannual framework Strategy Statement 2019-2021 (DES, 2019). For 2019, the Action Plan sets out more than 280 actions, including a strategy for foreign languages⁴⁰, strengthening STEM subjects and increasing participation of women in STEM education. Other priorities include: supporting disadvantaged students and improving their access to higher education; the Teacher Supply Action Plan; review of the senior cycle following junior cycle reform; Irish-medium schools; and a renewed focus on apprenticeships and traineeships (Eurydice, 2019).

Early childhood education and care (ECEC) features strongly in the infrastructure investments set out in the National Development Plan (2018-2027)⁴¹. Public investment in early learning and care and school-age childcare (ELC and SAC)⁴² will rise from EUR 486 million in 2018 to EUR 575 million in 2019. Cumulatively, in the last four budgets there has been a spending increase of 117% (Irish Government, 2019). It is planned that investment in ELC and SAC should at least double over the next decade, and a new funding model for sustainable financing is to be developed (Irish Government, 2019).

5. Modernising early childhood and school education

ECEC continues to feature prominently in Irish policy and programmes reform, which aim to improve accessibility, affordability and quality. In 2017, the ECEC participation rate for children 4+ reached 100%⁴³. Access to the universal free pre-school programme has been extended to 2 years, while per-pupil subvention increases of 7% for providers in September 2018 are intended to support improvements in the quality of provision (Irish Government, 2019). Two major policy developments in this sector took place in 2018. Firstly, the Childcare Support Act 2018⁴⁴ provides for the establishment of the National Childcare Scheme⁴⁵, which will offer universal support to all families for children under 3, and an income-based subsidy to families with children aged 2-15. It starts in October 2019. Secondly, a broader 'First 5' strategy (2019-2028) launched in November 2018 aims to provide: a broader range of options for parents to balance working and caring; a new model of parental support; a new funding model for ECEC; and measures to support socio-economically disadvantaged communities (Irish Government, 2018). The strategy has been welcomed for its strong emphasis on addressing educational disadvantage. (The *Growing Up in Ireland* longitudinal study⁴⁶ showed wide socio-economic disparities in key school readiness and cognitive measures among 5-year olds.) The Childminding Action Plan due end-2019 will be important in bringing greater regulation of the childminding sector. The impact of these reforms will need to be monitored. In 2019, Ireland received a country-specific recommendation from the Council of the EU to 'Increase access to affordable and quality childcare' (Council of the European Union, 2019).

Ireland continues to perform well on early school leaving rates. The proportion of early school leavers in Ireland continues to decrease, reaching 5% in 2018, substantially below both the 8% Europe 2020 national target and the EU average of 10.6%. Latest research (Smyth et al., 2019) highlights that early school leavers have become more marginalised and will require intensive support to progress to employment and other forms of education and training. The government plans to offer a wider range of post-school options to learners, including by expanding the apprenticeship system to new sectors as set out in the Action Plan to Expand Apprenticeship and Traineeship in Ireland 2016-2020⁴⁷. Apprenticeship registrations have grown by almost 80% over the first 3 years (Irish Government, 2019). Government statistics show that participation by Irish Traveller pupils in education drops off sharply after the junior certificate cycle, indicating that the rate of school dropout remains high for this group (DES, 2017).

Ireland is investing in digital skills, IT infrastructure in schools and online safety. Under the Digital Strategy for Schools 2015-2020 total funding for information and communications

⁴⁰ Ireland has one of the EU's lowest proportions of pupils in compulsory education learning two or more languages.

⁴¹ See: <https://www.gov.ie/en/publication/83fec4-national-development-plan/>

⁴² ELC - care and education for children aged 0-6; SAC - non-scholastic, structured programme offerings for school children aged 4-12 years, provided by childminders or in formal settings, outside of normal school hours.

⁴³ ECEC participation includes participation in primary schools as well as ECEC centres.

⁴⁴ Childcare Support Act 2018, No 11/2018: <https://www.oireachtas.ie/en/bills/bill/2017/153/>

⁴⁵ See: <https://www.dcy.gov.ie/docs/EN/11-03-2019-National-Childcare-Scheme/5189.htm>

⁴⁶ See: <https://www.growingup.ie/>

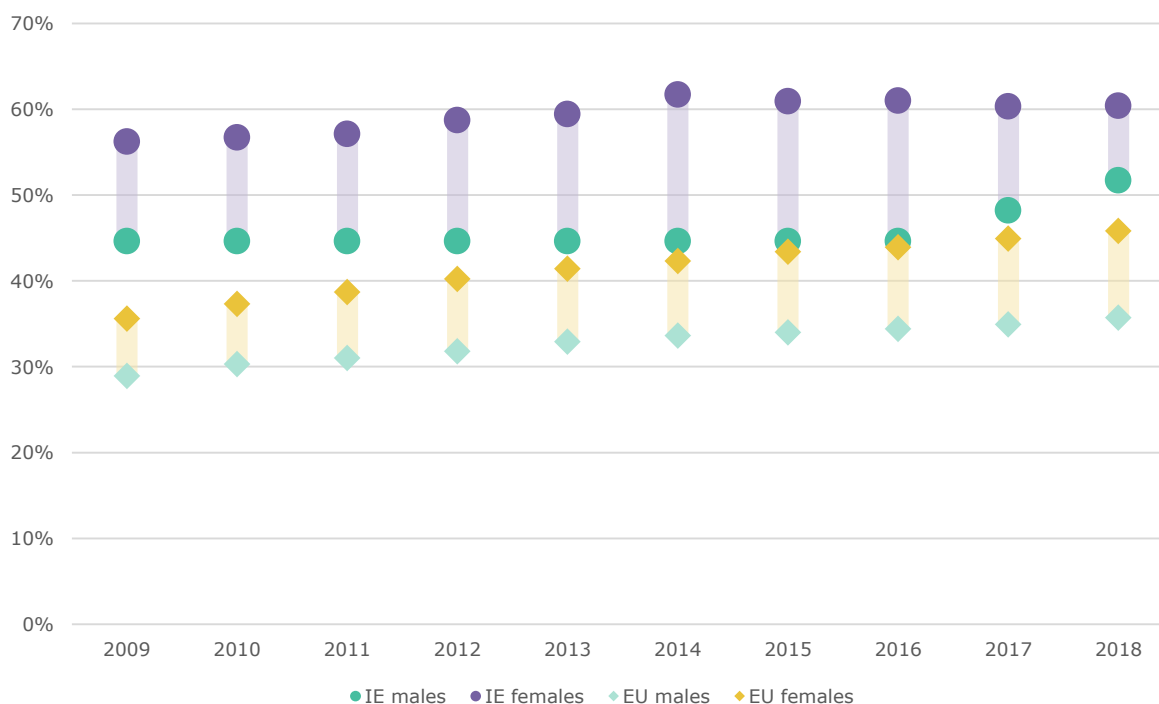
⁴⁷ See: <https://www.education.ie/en/Publications/Policy-Reports/Action-Plan-Expand-Apprenticeship-Traineeship-in-Ireland-2016-2020.pdf>

technology (ICT) infrastructure has reached EUR 110 million. This sits alongside other supports, (e.g. the Digital Learning Framework and Digital Learning Planning Resource) to help schools embed digital technologies in their work. One of the key challenges is to teach students digital critical thinking and online safety (Mooney, 2018). As OECD notes, digital technology 'poses a major risk of widening social inequality and blocking opportunities for people without the skills to navigate the online world safely' (OECD, 2019). In July 2018, the government launched the Action Plan for Online Safety and in March 2019 and the Minister for Communications announced plans for an Online Safety Act and the appointment of an Online Safety Commissioner. These measures have been welcomed given the high rates of cyber-bullying and extreme internet use among Irish teenagers (Edwards, E., 2019). The Action Plan for Education 2019 highlights the importance of increasing students' digital abilities. This is to be achieved by developing i) 'Technology Enhanced Learning Plans' in the Education and Training Boards and ii) digitised and online services.

6. Modernising higher education

Ireland is striving for better gender balance in higher education, both among staff and students, particularly in STEM subjects. In 2018, the tertiary attainment rate reached 56.3%, one of the highest in the EU (EU average: 40.7%). The gender gap has been closing recently, dropping to 8.7 pps, which is better than the EU average of 10.1 pps (Figure 3). In November 2018, the government launched a Gender Equality Action Plan for Higher Education Institutions, to be supported by the new Centre of Excellence for Gender Equality. The proportion of STEM graduates in 2017 was 23.9% (EU average: 25.8%). It is estimated that women make up just 25% of people working in STEM-related jobs (DES, 2016). Two national initiatives on improving gender equality among STEM students have been operational since 2015. The 'I Wish' initiative aims to build confidence among women at second level and raise awareness of STEM learning and career opportunities. The second, 'A World of Opportunities', run by Dublin City University, provides a STEM careers guide for parents, teachers and students. Following the Technological Universities Act that came into force in March 2018, the first Technological University has been established, which was welcomed by stakeholders.

Figure 3 Gender gaps in tertiary educational attainment in Ireland and the EU (2009-2018)



Source: Eurostat, Labour Force Survey. Online code: [edat_lfse_03](#)

Progress has been made in improving access to higher education for under-represented groups. A progress review of the National Access Plan (DES, 2018a) found progress in improving access to higher education for students with disabilities (from 6% of all new entrants in 2012/2013 to 10% in 2016/2017⁴⁸). The same goes for students from socio-economically disadvantaged groups (proportion of students from the semi/unskilled manual worker group: from 26% in 2012/2013 to 36% in 2016/2017; proportion from the non-manual worker group: from 23% in 2012/2013 to 27% in 2016/2017). This was achieved in the context of a marked increase in overall student numbers (new entrants rose from 41 413 in 2012/2013 to 43 569 in 2016/2017) and with significant additional investment (more than EUR 16 million over 3 years via PATH). However, key challenges remain, including difficulties in meeting targets set for mature students⁴⁹ and Irish Travellers⁵⁰. An action plan to increase Traveller participation will be developed as the next phase to the NAP (Irish Government, 2019). A study of mature student participation in higher education will also commence towards the end of 2019.

7. Modernising vocational education and training

Expansion of the apprenticeship system is continuing, increasing the number of programmes and attracting more apprentices. VET is rarely seen as a post-secondary route in Ireland and only 10.3% of upper secondary graduates took VET programmes in 2018. All of them benefited from a period of work experience during their programme and their employment rate rose from 71.9% in 2017 to 76.9% in 2018 (EU average: 79.5%). The action plan to expand apprenticeship and traineeship⁵¹ aims over 2016-2020 to increase apprenticeship places to 31 000 (from 12 000) and apprenticeship programmes to more than 70 (from 27). In 2018, 5 648 new apprentices were registered, against 4 843 in 2017. Currently, 20 new apprenticeship programmes are operational, and a further 36 are in development.

8. Developing adult learning

During 2018, a number of initiatives were introduced to support upskilling⁵² and adult participation in learning and training. The proportion of low-qualified adults decreased from 17.5% in 2017 to 16.8% in 2018 while the employment rate among this group rose from 51.3% to 52.3%. However, there are still 420 000 low-qualified adults, well in excess of the estimated 190 000 elementary jobs available. Substantial progress was made in overall adult participation in learning, which increased from 9% in 2017 to 12.5% in 2018. The Skills to Advance employee development policy launched in 2018 offers targeted support for vulnerable groups in the workforce, particularly for employees with skills below level 5 on the national framework of qualifications, i.e. European Qualification Framework (EQF) 3. The policy aims to have over 40 000 workers engaged in state supported skills development by 2021. The EXPLORE programme is a pilot developed by the Regional Skills Fora in 2018 to address the lack of transversal and digital skills among people over 35 in manufacturing employment and the key issue of skills obsolescence. Springboard+ continues providing higher education upskilling and reskilling opportunities for those in employment, the unemployed and returners to work. The 'Skills for Growth audit tool' will make it easier for small and medium-sized businesses to identify their existing and future skill needs. Regional Skills Fora are partnering companies with the education and training system to increase the reach of skills audits. Nevertheless, the greatest need for improvement is among older workers in employment and among low-skilled workers, regarding transversal and digital skills. The 2019 country-specific recommendation that Ireland received from the Council of the EU calls on it to 'Provide personalised active integration support and facilitate upskilling, in particular for vulnerable groups and people living in households with low work intensity (Council of the European Union, 2019⁵³).

⁴⁸ In 2017/2018, participation reached 10.5%

⁴⁹ Above 23 years old

⁵⁰ Ireland has set a target of 80 students participating in higher education by 2019, which is unlikely to be met (in 2017/2018 there were 61)

⁵¹ See: <http://www.solas.ie/SolasPdfLibrary/ActionPlanDec16.pdf>

⁵² See: European Council Recommendation on Upskilling Pathways (2016) https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOC_2016_484_R_0001

⁵³ See: https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-specific-recommendation-commission-recommendation-ireland_en.pdf

The review of the National Training Fund (NTF) was completed and reforms reflected in the 2019 budget. It provides additional funding to continue expanding apprenticeships and traineeships, upskilling and reskilling opportunities, including Springboard. It also supports Skillnet Ireland in addressing skills gaps. The government has ring-fenced EUR 300 million of the NTF surplus from 2020 to 2024 with a view to transforming the NTF into a strategic, enterprise-focussed response to the skills needs of the economy.

There are 10 Further Education Teacher (FET) qualifications accredited by the Teaching Council of Ireland. These are offered at degree/post-graduate levels (EQF levels 6-7) through universities, Institutes of Technology and Teacher Training Colleges. SOLAS, the FET authority, funds a number of organisations to provide professional development services to the FET sector. The Further Education and Support Service provides national, regional and local professional development workshops. The Waterford Institute of Technology/National Adult Literacy Agency accreditation project designs and delivers nationally recognised programmes.

Developments concerning teachers and trainers are guided by the 2017-2019 FET professional development strategy. Staff at Education and Training Boards are trained to identify training needs within companies. Programmes have also been developed for FET practitioners to improve teachers' technology-enhanced learning⁵⁴ practices and tailor approaches to the needs of different types of learners. Workplace supervisors from 31 companies offering traineeship places were trained on how to provide structured work-based learning support to learners.

Box 2: Employment for People from Immigrant Communities (EPIC) programme

The EPIC programme, co-financed by the European Social Fund (ESF), supports business and government to help immigrants find employment and education in Ireland.

The overall objective of the programme, running from 2017 to 2021, is to promote active inclusion, equal opportunities, active participation and to improve the employability and integration of migrants. It supports disadvantaged and vulnerable migrants, including those distant from the labour market, to raise their skills and actively helps them to find employment and training opportunities including work placements and mentoring.

Participants in EPIC are disadvantaged migrants from the European Economic Area and beyond who are legally entitled to work in Ireland.

The ESF contribution is EUR 962 500. See: <https://www.bitc.ie/business-action-programmes/business-action-on-employment/are-you-a-jobseeker/>

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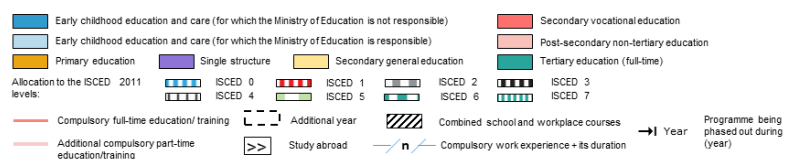
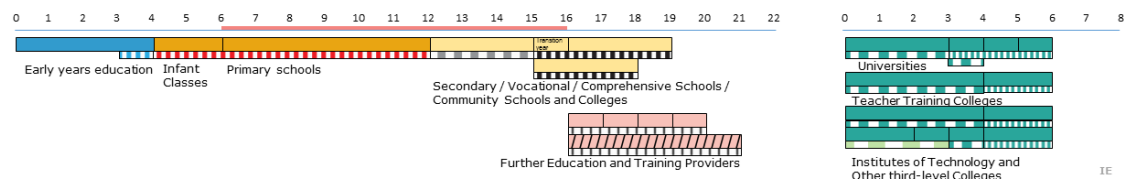
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Annex I: Key indicator sources

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.

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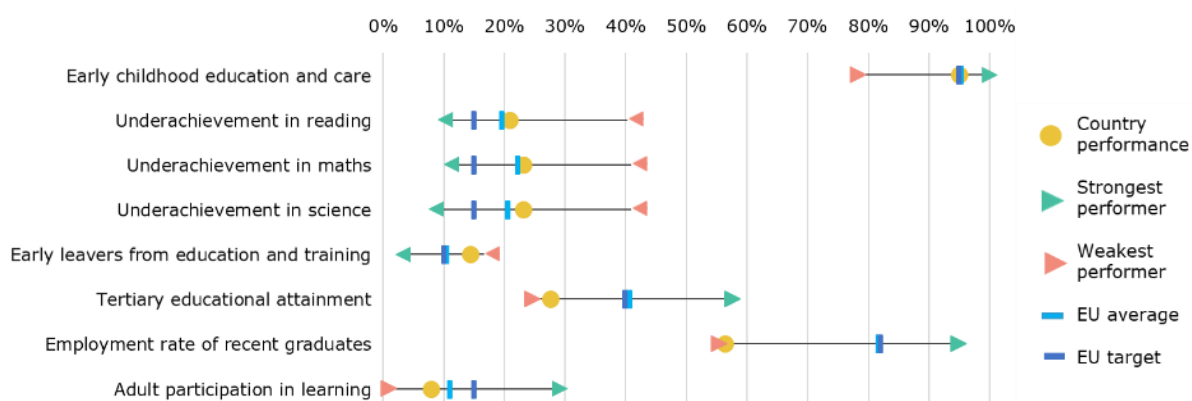
ITALY

1. Key indicators

			Italy		EU average	
			2009	2018	2009	2018
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			19.1%	14.5%	14.2%	10.6%
Tertiary educational attainment (age 30-34)			19.0%	27.8%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			99.8%	95.1% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading		21.0%	21.0% ¹⁵	19.5% ^{EU27}	19.7% ¹⁵
	Maths		25.0%	23.3% ¹⁵	22.3% ^{EU27}	22.2% ¹⁵
	Science		20.6%	23.2% ¹⁵	17.7% ^{EU27}	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)						
	ISCED 3-8 (total)		60.6%	56.5%	78.3%	81.6%
Adult participation in learning (age 25-64)						
	ISCED 0-8 (total)		6.0%	8.1%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	4.4% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)		:	9.1% ¹⁷	:	8.0% ¹⁷
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		4.6%	3.8% ¹⁷	5.2%	4.6% ¹⁷
	Expenditure on public and private institutions per student in € PPS	ISCED 0	€4 609 ¹²	€5 380 ¹⁶	:	€6 111 ^{15,d}
		ISCED 1	€5 805 ¹²	€5 814 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
		ISCED 2	€6 665 ¹²	€6 470 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
		ISCED 3-4	:	€6 822 ¹⁶	:	€7 730 ^{14,d}
Early leavers from education and training (age 18-24)	ISCED 5-8		€7 771 ^{12,d}	€8 431 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Tertiary educational attainment (age 30-34)	Native-born		16.6%	12.0%	13.1%	9.5%
	Foreign-born		42.1%	35.2%	26.1%	20.2%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	Native-born		20.0%	31.4%	33.1%	41.3%
	Foreign-born		12.9%	14.0%	27.7%	37.8%
ISCED 3-4			55.9%	50.3%	72.5%	76.8%
	ISCED 5-8		66.1%	62.8%	83.8%	85.5%

Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission's Joint Research Centre (JRC) on UOE data. Further information can be found in Section 10 and Volume 1 (ec.europa.eu/education/monitor). Notes: The EU's 2009 PISA averages do not include Cyprus; d = definition differs, : = 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

- 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.

3. A focus on teachers

Italy has the oldest teaching workforce in the EU. As a high share of teachers in Italy are approaching retirement age, renewing the teaching body is a major challenge. In 2017, more than half (58%) of primary and secondary teachers (ISCED 1-3) were over 50 years old (against 37% in the EU), and 17% were over 60 (EU: 9%)⁵⁵. This means that, on average, 3.8% could retire each year for the next 15 years. Italy also has one of the largest proportion of female teachers, though (like in other countries) it decreases with educational level taught: in 2016 it ranged from 99% in pre-primary school to 63% in upper secondary education and 37% in universities.

Procedures for selecting and hiring teachers were repeatedly modified over the last decade, but so far have not succeeded in ensuring a reliable supply of qualified teachers.

The massive wave of recruitments in recent years (over 150 000 since 2015) has had little or no impact on teachers' average age, and did not reduce the problem of teachers' allocation in secondary schools due to a lack of candidates with relevant qualifications (most acute in the sciences)⁵⁶. The 2015 school reform introduced a strong initial education and training component (*percorso FIT*) and clear employment prospects, with the aim of cutting long waiting lists and meeting future teacher requirements through forward planning, but the reform was not fully implemented. The 2019 budget law abolished the *FIT* system and reinstated centrally-administered public competitions open to all graduates⁵⁷, reducing the training component to a one-year induction period giving access to tenure. The competition will be organised at regional level, and those selected will be required to spend at least five years in the region of appointment to reduce teacher turnover. Its effectiveness in ensuring an adequate supply of teachers will depend on the ability of the Ministry of education, university and research (MIUR) capacity to organise the competitions as planned, every two years.

Limited career prospects, coupled with relatively low salaries compared to those of other highly qualified professions, make it difficult to attract the best-qualified graduates.

The teaching career system offers only a single career pathway with fixed salary increases based solely on seniority. In the absence of performance-related incentives, mobility across schools remains the only possibility to improve working conditions. As a result, schools in disadvantaged areas tend to be deprived of the best teachers and staffed with young, inexperienced teachers on temporary contracts. Teachers' statutory salaries are lower than the OECD average at every career stage. The seniority-based career system means that teachers can only reach the maximum salary after 35 years of service; the OECD average is 25 years. Teachers' salaries are also lower than the earnings of other workers with a tertiary education. The wage freeze for public-sector employees, still in place since 2010, continues to have a detrimental impact on teachers' purchasing power. The salaries of teachers entering the profession in 2016/17, in real terms, were around 94% of the salaries in 2009/10 (European Commission/EACEA/Eurydice 2018b). Nevertheless, according to the OECD Teaching and Learning International Survey (TALIS) 2018⁵⁸, the proportion of teachers

⁵⁵ Source: Eurostat (UOE) 2017. Online data code: educ_uoe_perp01. Unknown age category not included in the calculation.

⁵⁶ The majority of appointments (over 85 000) were to regularise long-term temporary teachers, following a ruling by the Court of Justice of the European Union (*Judgment in Joined Cases C-22/13, C-61/13, C-62/13, C-63/13, C-418/13 Raffaella Mascolo and Others v Ministero dell'Istruzione, dell'Università e della Ricerca*).

⁵⁷ With a master's degree and 24 credits in pedagogical subjects.

⁵⁸ 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,

satisfied with their job is the second highest in the EU, at 96% v 89.5%. Overall, 87% of teachers say that if they could decide again, they would still choose to become a teacher (compared with an EU average of 77.6%), but only 12% believe that teaching is a valued profession in society (OECD 2019). This apparent contradiction can be explained by the attractiveness of the profession in terms of scope to reconcile private and professional life⁵⁹, which makes teaching attractive especially to women (Argentin 2018).

There are teacher shortages in some subjects and regions and oversupply in others.

Teacher shortages are most acute in disciplines like science and maths, foreign languages and learning support, and in the north of the country. While most teachers (80%) are from the south, most teaching posts are available in schools in the north, and cannot be filled on a permanent basis due to excessive teacher turnover. The government has announced new measures to curb teacher transfers from the next school year. Indirect evidence of persistent teacher shortages is the share of teachers on temporary contracts ('*supplenti*', or substitute teachers). In the 2018/19 school year, they numbered 164 000, or 18.5% of the total, up from 135 000 the previous year⁶⁰. As the vast majority of temporary teachers has no automatic right to fill the same post the following school year, this corresponds to an expected turnover rate exceeding 20%, factoring in expected retirements⁶¹.

Continuing professional development is defined by law as a 'professional duty' of teachers, but there is no minimum number of compulsory hours. The 2015 school reform introduced the principle of compulsory continuing professional development, allocating earmarked funds to access additional educational resources (books, theatre, exhibitions, ICT, courses etc.). The reform also introduced in-service teacher appraisals, with a view to awarding bonuses worthy teachers in every school type and level (European Commission 2018 ETM). School leaders receive funding of an average of EUR 200 per teacher per year, depending on the type of school and area, with ex-ante criteria covering the award and amount of the bonus. After three years of trialling this initiative, the government is expected to enact formal criteria for awarding the bonus and to make permanent provision to fund the initiative. Only teachers on permanent contracts are subject to (bonus-related) appraisals; teachers on temporary contracts are not evaluated. There are no measures to address insufficient performance

School leaders are relatively well paid. They have a distinct career profile from teachers, and a different statutory salary range. School leaders (*dirigenti scolastici*) are selected and recruited through *ad hoc* public competitions open to teachers with at least 5 years' teaching experience. In 2018, the government aligned the professional status of school leaders to other public administration managers. This is reflected in their remuneration: while school heads' salaries are still lower than those of other public managers, they are now significantly higher than those of teachers (between 50% and 100% higher, depending on seniority). Salaries are defined according to criteria relating to the school district (number of schools and number of foreign students).

4. Investing in education and training

Italy's investment in education is low and unevenly spread across education levels.

General government expenditure on education, both as a proportion of GDP (3.8%) and as a proportion of total general government expenditure (7.9%), was among the lowest in the EU in 2017⁶². While the share of GDP allocated to pre-primary, primary and secondary education (ISCED levels 0-3) is broadly in line with EU standards, expenditure on tertiary education is the lowest in the EU, at just 0.3% of GDP in 2017, well below the EU average of 0.7%. The Council of the European Union adopted a country-specific recommendation for Italy under the 2019 European Semester to 'improve educational outcomes, also through adequate and targeted investment, and foster upskilling, including by strengthening digital skills.' (Council of the European Union, 2019). At 77%, the share of government education expenditure for the compensation of employees is among the highest in the EU.

Romania, Slovakia, Slovenia, Spain, Sweden. TALIS 2018 covers lower secondary teachers and school leaders in mainstream public and private schools.

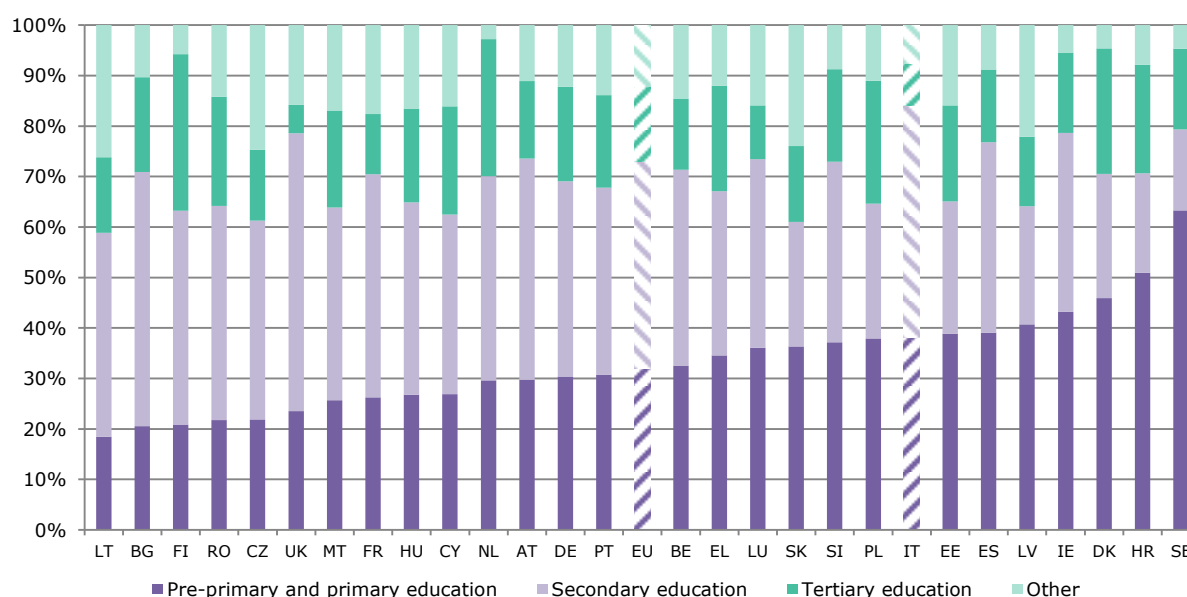
⁵⁹ Italian teachers report that they spend on average 17 hours per week teaching and 5 hours preparing lessons (TALIS). There are no statutory hours to be spent in school beyond teaching hours.

⁶⁰ Source: MIUR statistical office.

⁶¹ See Eugenio Bruno e Claudio Tucci, *Quota 100, fuga dalla scuola: a settembre serviranno 140mila docenti*, Il Sole 24 Ore, 7 March 2019.

⁶² Source: Eurostat, General government expenditure by function (COFOG).

Figure 2 Expenditure by education level, 2017



Source: Eurostat, COFOG.

The share of GDP spent on education is projected to fall over the next 15 years according to the government's own forecasts. The Ministry of the economy and finances (MEF) estimates that the share of GDP spent on education will fall from 3.5% in 2019 to 3.1% in 2035, reflecting demographic decline (MEF, 2019). Among the priorities for 2019, the Minister of Education has announced an increase in resources for universities and research centres, through centrally-funded plans for the recruitment of assistant professors (*ricercatore di tipo B*, a tenure-track position of associate professorships) and for attracting Italian academics working abroad back to Italy.

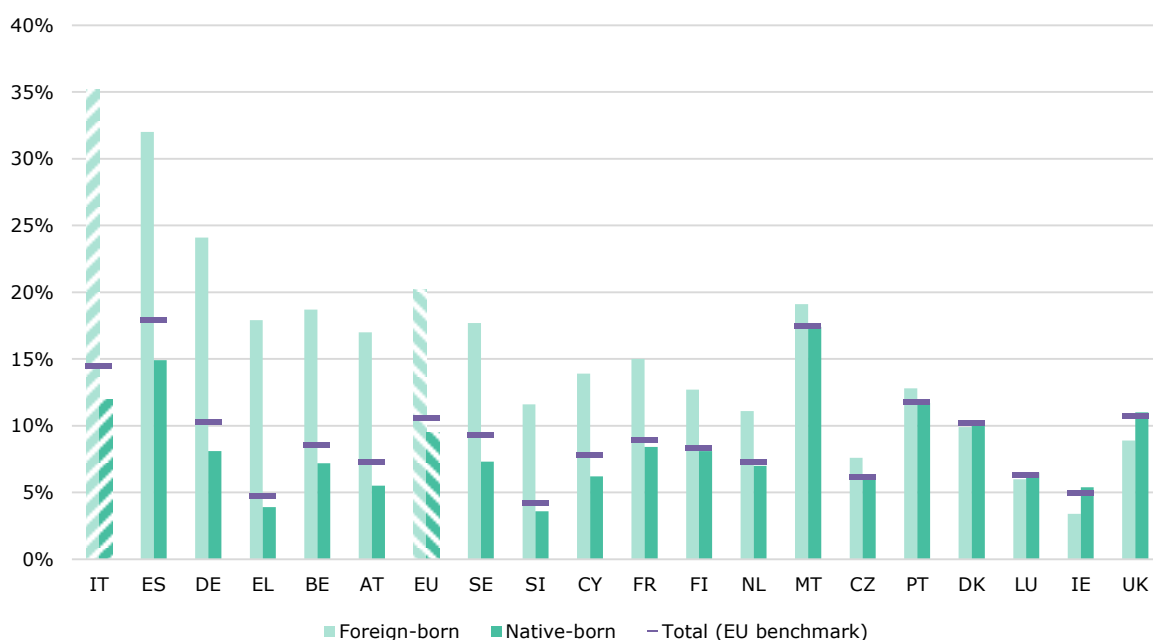
5. Modernising early childhood and school education

Participation in early childhood education and care (ECEC) is almost universal for 4- to 6-year-olds, but access for younger children is low and uneven across the country. At 96%, participation in ECEC for children aged between 4 and 6 in 2017 exceeded both the EU average (95.4%) and the EU benchmark of 95%. For children below three, in 2016/17 there were 13 147 ECEC institutions offering around 354 000 places, just over half of them public. This represents a coverage of 24% of 0-3 year-olds, well below the EU target of 33% coverage. The ECEC offer and average spending by municipalities vary significantly across the country. Coverage ranges from 7.6% of eligible children in Campania to 44.7% in Valle d'Aosta. Spending per child varies from EUR 88 per year in Calabria to EUR 2 209 per year in the autonomous province of Trento. The 2015 school reform signalled a change in perspective on ECEC, shifting the focus from labour market and social policy objectives to education through an 'integrated education system from 0 to 6'. The reform is being implemented, with funding of EUR 209 million in 2017, EUR 224 million in 2018 and EUR 239 million in 2019.

After falling steadily for a decade, the early school leaving (ESL) rate rose slightly in 2018, mostly due to a sharp increase among foreign-born people. The total share of early school leavers among 18-24 year-olds in 2018 was 14.5%, up 0.5 pps from 2017. This is below Italy's Europe 2020 target but above the EU average of 10.6%. Although the early school leaving rate for native-born people was unchanged since the previous year (12%), the rate for foreign-born people rose from 30% in 2017 to 35% in 2018, well above the EU average of 20.2%. This is due to the growth of foreign-born students enrolled in the Italian educational system (+1.9%), balancing the decline in native students (-1.2%)⁶³.

⁶³ MIUR, *Gli alunni con cittadinanza non italiana A.S. 2017/2018*, July 2019

Figure 3 Early school leaving rate by country of birth, 2018



Source: Eurostat, LFS.

Regional differences are marked. At 19%, the ESL rate in the south and in the islands is significantly higher than in the north (11%). A similar gap can be observed in basic skills proficiency as measured by the 2015 OECD Programme for International Student Assessment (PISA) and the annual standardised student tests by the National Agency for School Evaluation (INVALSI), with the north consistently and significantly outperforming the south (European Commission 2018). Many factors contribute to these gaps, including differences in student socio-economic background and different returns to education between regions.

The government continues to revise the measures introduced by the 2015 Education Act (*la Buona Scuola*). It put in place a revised system of teacher recruitment (see Section 3), reduced work-based learning to sharpen its focus on the competences required by the labour market, and postponed by one year the planned introduction of a final competence test at the completion of grade 13, with participation to remain voluntary (making it unrepresentative and therefore unusable for evaluation purposes). The content of teaching has been enriched by hiring extra music and gym teachers, with the stated aim of reducing early school leaving. More resources (EUR 35 million) have been invested in implementing the National Plan for Digital Schools, to create new digital learning environments (EUR 22 million), additional teacher training (EUR 7.5 million), and funding for problematic areas (EUR 2 million for 60 schools in the most deprived areas). Further measures target the two national agencies for evaluating the school system (Invalsi) and higher education and research (ANVUR), which will be integrated into the MIUR in a move which, by curtailing their independence, risks jeopardising all previous efforts to create an evaluation culture in the education system.

Negotiations are underway between the government and three northern regions on an agreement which would decentralise responsibility for some public services, including education. Lombardy, Veneto and Emilia-Romagna have applied for full responsibility for a number of functions currently coordinated by central government, including education. The applications were made under a provision (*autonomia differenziata*) in the Italian constitution never previously applied. The implications of this are as yet unclear, but there are concerns it might exacerbate the north-south educational divide. A key issue will be funding: autonomous regions would receive a standard student cost per pupil from the central budget multiplied by the relevant population, but a standard budget allocation per pupil has yet to be set. Given economies of scale in more populous areas and the financial support granted to schools by municipalities, there is a concern that pupils in the north would benefit from more resources (e.g. better infrastructure, better-paid teachers) than pupils in the south, compromising the equal right to good quality education enshrined in the constitution.

Box 1: Measuring student competence levels over time with European Social Fund support

INVALSI, Italy's national institute for the evaluation of the education and training system, runs a project on 'Diachronic and longitudinal measurement of students' competence levels'. The aim is to evaluate the competence levels of pupils in Italian and maths. The new feature of this project is its aim to go beyond the standard one-off yearly evaluations that only allow comparisons the yearly average to build a system that evaluates pupils' progress over time, from the start of primary to the completion of upper secondary education. The project will collect data both at a) micro-social level, so that each school can draw information on the effectiveness of their pedagogical and organisational systems, and b) macro-structural level, on the whole education system, to support policy makers by providing them with a solid evidence base.

Number of recipients:

- pupils and students: 50 000
- classes: 3 500
- schools: 1 300
- teachers: 3 500

Funding: EUR 14 760 930 from the National operational programme 'Per la Scuola'
Launch and duration: from 16/12/2015 to 31/12/2023

Website: <https://invalsi-pon1420.cineca.it/index.php?get=progetto>

6. Modernising higher education

Despite improvements in completion rates and in the average duration of studies⁶⁴, Italy's tertiary educational attainment rate continues to lag significantly behind the rest of the EU. In 2018, the share of 30-34 year-olds with tertiary educational attainment was the second-lowest in the EU at 26.9%, well below the EU average of 39.9%. It is particularly low among the foreign-born population, at 14% against the EU average of 37.8%. Family background is a determining factor: 30% of those who graduated in 2018 have at least one tertiary-educated parent, a proportion that rises to 43% for five-year degree courses (e.g. medicine, engineering and law) (AlmaLaurea 2019).

It is difficult for highly qualified people to find employment, resulting in a growing number of university graduates emigrating. The employment rate of recent tertiary graduates⁶⁵, which fell sharply during the economic crisis⁶⁶, has been slowly recovering since but remains one of the lowest in the EU at 62.8% in 2018, well below the EU average of 85.5%. Italian graduates increasingly seek employment abroad: in 2017, 28 000 university graduates moved abroad, up 3.9% since 2016 (and up 41.8% since 2013)⁶⁷.

The relatively high cost of tertiary education coupled with low returns on education discourages many from pursuing higher education studies. University fees in Italy are high by EU standards, and student support is low. About 90% of students pay fees averaging EUR 1 345 per year for first-cycle studies and EUR 1 520 for second-cycle studies. In the academic year 2016/17 the share of students who received grants based on economic need and academic merit was 11.6% of the total. Although publicly-financed study loans are available, take-up is negligible at about 1% (European Commission/EACEA/Eurydice 2018a). To raise tertiary attainment levels, the government is considering widening the fee-exemption system introduced in 2017 for students with an ISEE⁶⁸ declaration of up to EUR 13 000. In the same vein, it announced its intention to abolish selective admissions (*numero chiuso*) in several faculties, starting with medicine, and to reorganise arts and musical education (AFAM-*Alta Formazione Artistica e Musicale*), which will require a formal reorganisation of the recruitment system for teachers.

⁶⁴ The average age at graduation in 2018 was 26, down from 27 in 2008. 54% of graduates completed their studies within the prescribed timeframe (up from 39% in 2008).

⁶⁵ People aged 20-34 who left education between one and three years before the reference year.

⁶⁶ From 70.5% in 2008 to 52.9% in 2014 (source: Eurostat).

⁶⁷ Istat.

⁶⁸ The Equivalent Economic Condition Indicator to assess a family's economic condition.

The fall in academic staffing levels shows no sign of reversal. With over a fifth of academic staff over the age of 60 (and only 14% under 40)⁶⁹, further increases in enrolments in higher education will also depend upon the capacity to renew the teaching body. In 2019 the government has allocated additional funding for 1 500 tenure-track positions for assistant professors (*ricercatore universitario di tipo B*), to be distributed among public universities based on their size and, to a lesser extent, on the quality of their research⁷⁰. In addition, turn-over limitations were eased for financially robust universities. Institutions with a salary expenditure below 80% of the budget and with a positive income/salary expenditure ratio can recruit up to 110% of the previous year's retirements. These measures may help, but are too limited in scope to effectively address low teaching staff levels over the longer term. A more substantial reversal may start as of 2020, when the government plans to increase funding to universities by EUR 100 million a year (equivalent to 1 000 new positions a year).

The government is taking steps to expand the non-academic tertiary sector. Extra funding of EUR 23 million has been allocated to expand the course offer of *Istituti Tecnici Superiori* (ITS), tertiary-level vocational institutions that offer better employment prospects (European Commission 2018) but which, with around 13 400 students, remain a *niche* phenomenon. The first vocational university degrees (*lauree professionalizzanti*) were launched in 2018 alongside the ITS (see Box 2).

Box 2: New vocational tertiary degree courses

A new type of vocational tertiary degree (*lauree professionalizzanti*) is being piloted in Italian universities as of 2018/19. Fourteen three-year degree courses were launched in as many universities, evenly distributed across the country, offering 700 places in total. The objective is to train tertiary-educated highly specialised professionals in engineering, construction and the environment, and energy and transport, in close cooperation with professional associations. The courses are modelled on the German *Fachhochschule*. They consist of two years of academic studies plus one year of work-based learning. Universities can offer from a minimum of three courses to a maximum not exceeding 10% of their total course offer. The number of available places (maximum 50 per course) is set on a local basis. With their strong vocational orientation, the new *lauree professionalizzanti* are a positive step towards creating a non-academic tertiary education sector, which Italy has lacked. Currently, 42% of Italian university students graduate with no practical training or work experience (Almalaurea 2019). By opening new paths into tertiary education, particularly for upper secondary VET graduates, the new degrees could also help lower Italy's early school leaving rate and raise the tertiary educational attainment rate.

7. Modernising vocational education and training

Enrolment in upper secondary VET remained fairly stable in 2017 compared with previous years. 55.3% of upper secondary students were enrolled in vocational programmes, above the EU average of 47.8%⁷¹. The level of employability of recent VET graduates rose slightly in 2018, to 53.9% vs. 50.8% in 2017 but is still substantially below the EU average of 79.5% in 2018⁷². A first analysis by the regions of the pilot projects for compulsory dual work-based learning in VET shows that participants are mostly final-year students and, to a limited extent, apprentices. While it is too early to draw conclusions, the pilot projects might ease the transition from education to the labour market and provide a more structured training offer for apprentices.

Following the adoption of the Italian Qualifications Framework (QNQ) in January 2018, a new classification of qualifications was developed. The National Repertory of Education and Training Qualifications and Professional Qualifications was created, covering qualifications from general education, higher education and VET qualifications administered at regional level.

Italy is updating its recruitment system of VET teachers. New requirements include knowledge of psychological and pedagogical disciplines, didactic methodologies and technologies, certified by specific university exams. Initial training for VET trainers is not regulated at national

⁶⁹ Source: Eurostat.

⁷⁰ Ministerial Decree n. 204/2019.

⁷¹ Source: Eurostat, UOE, 2017.

⁷² Source: Eurostat, Labour Force Survey, 2018.

level and Italy lacks a nationally recognised register of trainers or formal recruitment procedures. The National Collective Labour Contract sets minimum requirements for access to the training profession: a degree or upper-secondary school diploma plus related professional experience in the relevant sector.

8. Developing adult learning

The share of adults without an upper secondary qualification is high, and participation in adult learning is low. In 2018, 38.3% of Italian adults aged 25-64 had at most a lower secondary qualification, compared with the EU average of 21.9%⁷³, and only 8.1% of adults aged 25-64 had a recent learning experience (in the previous 4 weeks), compared with the EU average of 11.1% (LFS, 2018). The low participation rate of low-qualified adults to training (2%) is a concern given the mismatch between the number of jobs requiring low qualifications (2.5 million in 2017) and the number of low-qualified adults (over 12 million)⁷⁴.

Italy is fostering training schemes for the unemployed. The most relevant policy measure for adult learning is the anti-poverty strategy, designed to promote social inclusion⁷⁵. So far around 800 000 people have applied for the scheme (April 2019). Connected to it, the government plans to invest in developing the public employment services (PES). Recipients must follow training activities during the unemployment period. The implementation of this measure involves the recruitment of 10 000 'navigators' (career counsellors); selection procedures for the first navigators are ongoing. In parallel, new policy measures were developed to train adult educators⁷⁶, introducing the qualification of 'socio-pedagogical professional educator'. Universities are directly involved in planning and managing the training offer.

Italy lacks a common regulatory framework for adult learning professionals. The adult educators' category comprises a wide range of professions, divided into numerous professional sectors in different fields: education, adult vocational training, continuing training of adults for and in organisations, non-formal educational schemes, and social-sector and public-sector services.

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⁷³ Eurostat, Labour Force Survey, 2018.

⁷⁴ Ibid.

⁷⁵ Decree n.4/2019, *Disposizioni urgenti in materia di reddito di cittadinanza e di pensioni*, GU Serie Generale n.23 del 28-01-2019.

⁷⁶ Law 205/2017 paragraphs 594-601 and Law 145/2018 paragraph 517.

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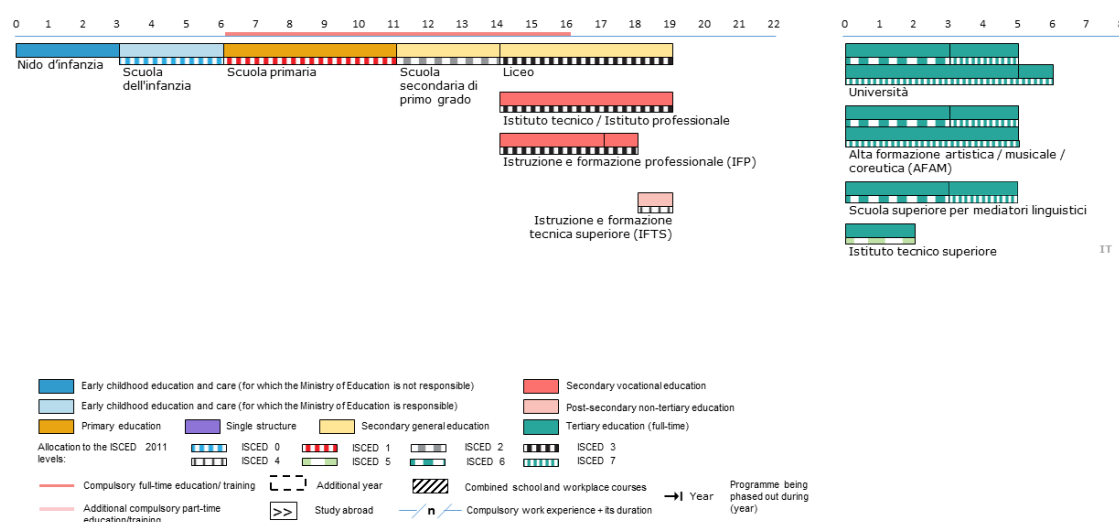
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Annex I: Key indicator sources

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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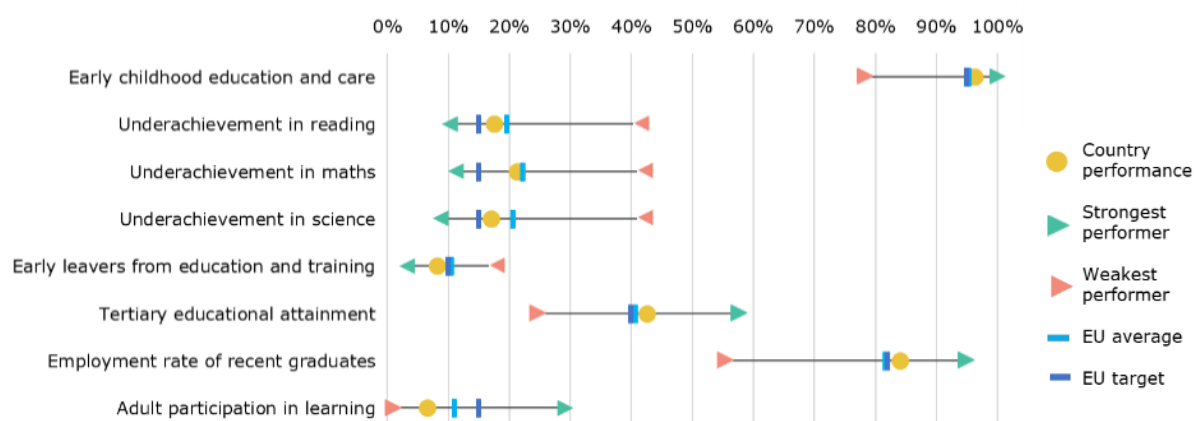
LATVIA

1. Key indicators

			Latvia		EU average	
			2009	2018	2009	2018
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			14.3%	8.3%	14.2%	10.6%
Tertiary educational attainment (age 30-34)			30.5%	42.7%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			91.7%	96.3% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading		17.6%	17.7% ¹⁵	19.5%	19.7% ¹⁵
	Maths		22.6%	21.4% ¹⁵	22.3%	22.2% ¹⁵
	Science		14.7%	17.2% ¹⁵	17.7%	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)		ISCED 3-8 (total)	69.7%	84.1%	78.3%	81.6%
Adult participation in learning (age 25-64)		ISCED 0-8 (total)	5.6%	6.7%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	8.5% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)		:	7.2% ¹⁷	:	8.0% ¹⁷
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		6.7%	5.8% ¹⁷	5.2%	4.6% ¹⁷
	Expenditure on public and private institutions per student in € PPS	ISCED 0	€4 706 ¹²	€4 055 ¹⁶	:	€6 111 ^{15,d}
		ISCED 1	€5 352 ¹²	€4 693 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
		ISCED 2	€5 393 ¹²	€4 730 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
		ISCED 3-4	€5 684 ¹²	€5 135 ¹⁶	:	€7 730 ^{14,d}
		ISCED 5-8	€8 072 ^{12,d}	€5 408 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born	14.3%	8.4%	13.1%	9.5%	
	Foreign-born	:	:	26.1%	20.2%	
Tertiary educational attainment (age 30-34)	Native-born	30.9%	42.4%	33.1%	41.3%	
	Foreign-born	:	50.7%	27.7%	37.8%	
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	57.7%	75.0%	72.5%	76.8%	
	ISCED 5-8	80.4%	91.3%	83.8%	85.5%	

Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission's Joint Research Centre (JRC) on UOE data. Further information can be found in Section 10 and Volume 1 (ec.europa.eu/education/monitor). Notes: The EU's 2009 PISA averages do not include 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).

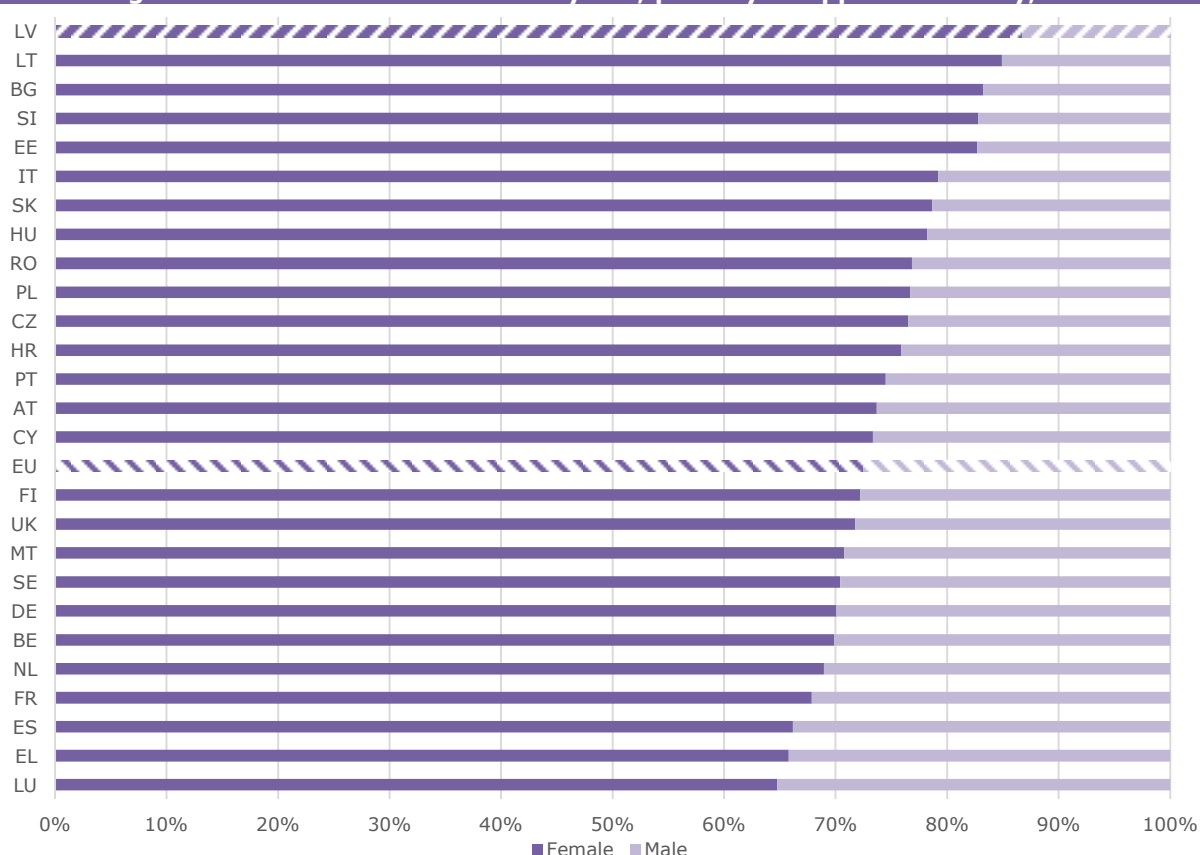
2. Highlights

- 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.

3. A focus on teachers

Latvia's teaching workforce is mostly older and overwhelmingly female. In 2017, women accounted for 87% of primary and secondary teachers, the highest figure in the EU, which has an average of 72%. The percentage of women teachers falls as the level of education rises, a pattern common to all OECD countries: in 2016 the figure ranged from close to 100% in pre-primary education to 80% in upper secondary, and just over 55% in tertiary education (Fig. 2). Women also comprise a significant share of school leaders: 77% of lower secondary schools leaders are women, the highest share across all OECD countries (OECD average: 45%). Latvia's teachers are also among the oldest in the EU. In 2017, almost half (47%) of all school teachers were 50 or over, and only 16% were under 40⁷⁷.

Figure 2 Distribution of teachers by sex, primary to upper secondary, 2017



Source: Eurostat, UOE. Online data code: [educ_uoe_perp01](#)

⁷⁷ Source: Eurostat, UOE, 2017. Online data code: [educ_uoe_perp01](#).

Renewing the teaching workforce is a challenge, as young graduates are not attracted to the profession and teacher shortages are becoming apparent, especially in science and maths. In 2015, less than 1% of 15-year-olds aspired to work as a teacher (only 0.2% among boys) (European Commission, 2018). According to the Ministry of Education and Science, out of approximately 1 000 education graduates per year, currently only about 350-400 actually start working as teachers. To promote the quality and relevance of education programmes, the ministry has updated regulations on the financing of higher education institutions (HEIs), to ensure they receive performance-based funding depending on how many of their education graduates enter the teaching profession. Teacher shortages are increasingly being reported: in September 2018, a survey of 200 school leaders by the Society for Independent Education found that 65% of schools had a shortage of teachers⁷⁸. In 2018, the government decided to temporarily ease requirements for teaching scientific subjects by allowing STEM university students to teach for 1 year in primary and secondary school, under the guidance of a mentor teacher (see Box 1).

School leaders are responsible for recruiting teaching and non-teaching staff. Teachers are recruited based on their qualifications and experience. In PISA 2015, Latvian school leaders reported having much greater freedom in hiring teachers (96.8%) than the OECD average (70.3%). Responsibility for recruiting and dismissing school leaders lies with municipalities, as they are the funders of most schools; 662 schools are funded by municipalities as compared to 59, against 58 funded by private individuals, government or other organisations.

Low statutory salaries and long working hours contribute to making teaching unattractive; reforms have not yet brought about the desired improvements. According to the OECD Teaching and Learning International Survey (TALIS) 2018⁷⁹, the proportion of Latvian teachers who believe that teaching is a valued profession in society is higher than the EU average (23.3% v 17.7%). However, only 65.4% of teachers say that if they could decide again, they would still choose to become a teacher (v 77.6% in the EU as a whole). Income reliability and job security appear to be strong influencing factors in choosing teaching as a profession⁸⁰. School teachers in Latvia are trained at tertiary level and can access the profession either through an initial teacher education programme or by combining academic training and in-service training at least 72 hours in pedagogy. Officially, the ratio of teachers' salaries to those of other tertiary graduates in Latvia is comparatively high (OECD), but the relatively large shadow economy means that the actual ratio is probably much lower⁸¹.

In 2016, the government introduced a new teacher remuneration scheme expressly to promote a transparent wage system and make expenditure more efficient. The minimum monthly salary increased by around 17.6% from EUR 405 (for 21 hour) to EUR 680 (for 30 hours) from 1 September 2016. In January 2018 a gradual increase in teachers' salaries from September 2018 to 2022 was approved. The base monthly salary for teachers rose from EUR 680 to EUR 710 on 1 September 2018 and to EUR 750 on 1 September 2019 — still less than half the EU average (European Commission/EACEA/Eurydice, 2018).

While starting salaries are fixed by law, top salaries are not pre-defined, however they cannot exceed the lowest salary rate by more than 50%. School leaders have autonomy in deciding on most allowances and salary supplements such as performance-related bonuses, overtime and extra activities, which can amount to 50% of a teacher's basic pay. As a result, lower secondary teachers teach on average 46% more than the 30 hours a week statutory teaching time, the highest difference among OECD countries for which data is available⁸². Working conditions differ greatly depending on a school's location and size. School size matters — state subsidies for municipal schools are based on student numbers, and bigger schools tend to attract better teachers. In addition, the regulations are insufficiently clear on which tasks are to be included in

⁷⁸ Izglītība un kultūra (2018) Aptauja: 65% skolu trūkst pedagogu. <https://www.izglitiba-kultura.lv/zinas/aptauja-65-skolu-trukst-pedagogu>

⁷⁹ In 2018, 23 Member States participated in 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.

⁸⁰ Income reliability and job stability were considered of high importance by 90% and 93% of TALIS respondents (EU average: 66% and 65.5%).

⁸¹ Estimated at 24.2% of GDP in 2018, 43.5% of which consisting of under-the-table salary payments, according to the Shadow Economy Index by the Stockholm School of Economics in Riga.

⁸² See Education at a Glance 2018 OECD Indicators, <http://gpseducation.oecd.org/CountryProfile?primaryCountry=LVA&treshold=10&topic=EO>.

the basic salary and which can be considered additional work and thus subject to possible salary supplements to be determined by the school leader (State Audit Office 2018). The need for more transparent and simpler teacher salary regulations was recently highlighted by the State Audit Office⁸³.

Continuing professional development (CPD) is compulsory for teachers of all levels, and is required for promotion to the level of performance-based additional payment system. Teachers must undergo 36 hours of professional development every 3 years. There are many forms and formats of CPD in use, and their comparative effectiveness has not been measured. The European Social Fund project supporting the development and implementation of a competence-based curriculum (*Skola 2030*) contains a substantial CPD component, preparing teachers to use modern tools and approaches, including digital technologies.

Box 1: Tackling teacher shortages

In September 2018 the government adopted a regulation on the education and qualification requirements for teachers and the development of teachers' professional competences⁸⁴. Among other things, the regulation addresses the shortage of science and maths teachers, by introducing a new path into teaching for STEM graduates who do not possess teaching qualifications. According to the new regulation, a person with degree in a relevant subject can teach for one year in school, provided they are mentored by a qualified teacher. Those who choose to continue teaching in school beyond the one-year term foreseen in the regulation, will have to obtain a full teaching qualification through ITE.

The regulation also eases qualification requirements to teach in the VET system, if the teaching workload is below 360 hours per year. This measure is meant to encourage the involvement of industry professionals in the implementation of vocational education programmes.

4. Investing in education and training

Government expenditure on education is comparatively high at all education levels.

Latvia's general government expenditure on education was well above the EU average in 2017, both as a proportion of GDP (5.8% v 4.6%) and as a proportion of total public expenditure (15.2% v 10.2%⁸⁵). Public spending on education increased by 10% between 2016 and 2017 in real terms, the highest rate of increase in the EU, to compensate for the drastic cuts imposed following the 2008 financial crisis. Employee compensation accounted for 59.8% of total government expenditure on education, below the EU average of 62%⁸⁶. Expenditure per student expressed in purchasing power standard (PPS) is comparatively high relative to the country's GDP per capita and has been rising steadily in recent years, but remains below the EU average at all levels of education.

Latvia's population is declining rapidly, driven by negative natural growth and relatively high emigration. The share of the population aged between 3 and 18 is projected to contract by around 20% between 2020 and 2030, as compared to just 2% for the EU as a whole. The average class size in Latvian schools is already the lowest in the OECD: 11 pupils per class in primary and 15 in lower secondary (against OECD averages of 21 and 23 respectively)⁸⁷. The government is pressing for further streamlining to shift investment away from maintenance of the large school network and towards teaching and learning (see Section 5).

⁸³ <http://www.lrvk.gov.lv/en/the-teacher-remuneration-system-should-be-simpler-and-easier-to-understand/>

⁸⁴ Cabinet of Ministers (2018) Regulation Nr 569, *Noteikumi par pedagogiem nepieciešamo izglītību un profesionālo kvalifikāciju un pedagogu profesionālās kompetences pilnveides kārtību*

⁸⁵ Source: Eurostat, General government expenditure by function (COFOG) database.

⁸⁶ Source: DG EAC, based on Eurostat data and the Classification of the functions of government (COFOG). Online data code: gov_10a-exp

⁸⁷ Education at a Glance 2018: OECD Indicators

5. Modernising early childhood and school education

Latvia's early school leaving rate is relatively low, but wide disparities persist between genders and between urban and rural areas. In 2018, the percentage of early leavers from education and training (ESL) in the 18-24 age group was 8.3%, well below the EU average of 10.6%. The ESL rate for men improved somewhat in 2018 (11.4% v 12% in 2017), but was still more than twice that for women, which remained unchanged at 5%. In addition, two out of three grade repeaters at lower secondary level are boys, compared to the OECD average of 60%. The ESL rate is more than twice as high in rural areas as in urban areas (15% v 7%) (European Commission 2019). Planned new measures to improve the individualised approach to students at risk of ESL, and to provide support for the inclusion of students with special educational needs⁸⁸ should lead to a further reduction in ESL rates. However, success will depend on sufficient investment to support the new regulatory framework.

The new competence-based curriculum includes education guidelines from pre-primary to upper-secondary levels. The guidelines for pre-primary education include language, social and civic competences, cultural understanding and artistic self-expression, natural sciences, mathematics, technology, health and sport. Transversal competences include critical thinking and problem solving, self-guided learning, creativity and entrepreneurship, cooperation and participation. The new guidelines also strengthen the requirements for Latvian language learning in preschool, and emphasise every child's active engagement in learning.

The shortage of qualified staff and the low capacity of pre-primary schools to implement significant reforms are a concern. Participation in early childhood education and care (ECEC) is almost universal for children between the age of 4 and the starting age for compulsory education (6 years old in Latvia) at 96.3% in 2017, slightly above the EU average of 95.4%. However, Latvia lacks national professional standards for ECEC staff. Preschool teachers responsible for children aged between 1 and a half and 4 earn almost 10% less than school teachers (European Commission/EACEA/Eurydice, 2018⁸⁹) and work longer hours. Their remuneration is the exclusive responsibility of municipalities. The Education Ministry is encouraging municipalities to re-consider resource allocation, by diminishing the number of primary and secondary schools and increasing the number of students per class. This will enable municipalities to top up teacher salaries.

The trade-off between an extensive school network with a low student-teacher ratio and low teacher salaries that has long characterised the Latvian system is coming under increasing strain. As the number of schoolchildren decreases, the consolidation of Latvia's large and inefficient school network is a priority for the Education Ministry, and is being linked with changes to teachers' pay and education content reform. New rules setting quality criteria for upper secondary education institutions and the minimum number of students per class in general secondary education institutions were adopted in 2018 by the previous government (European Commission 2018). Municipal administrations were given until March to submit to the Education Ministry their plans for optimising the school network in the context of the foreseen territorial reform.

The Education Ministry is developing a new education quality monitoring system to reflect the competence-based curriculum and other reforms at all levels of education. The aim is to improve and streamline the existing education quality evaluation processes (e.g. accreditation) and develop new education quality evaluation criteria, with support from EU funds⁹⁰. The evaluation methodology will also be improved. In addition, the new monitoring system would include indicators covering the quality of vocational education and training, not just general secondary education as is currently the case. The ministry has hired a consultancy to develop the quality monitoring system and monitoring instruments on its behalf, with results expected by June 2020.

⁸⁸ From September 2020, children and learners with learning disabilities, language disorders, physical disabilities and long-term illnesses should be educated in mainstream settings (European Commission 2018).

⁸⁹ The annual statutory salary, expressed in PPS, is 11 014 for pre-primary teachers and 12 080 for primary and secondary school teachers.

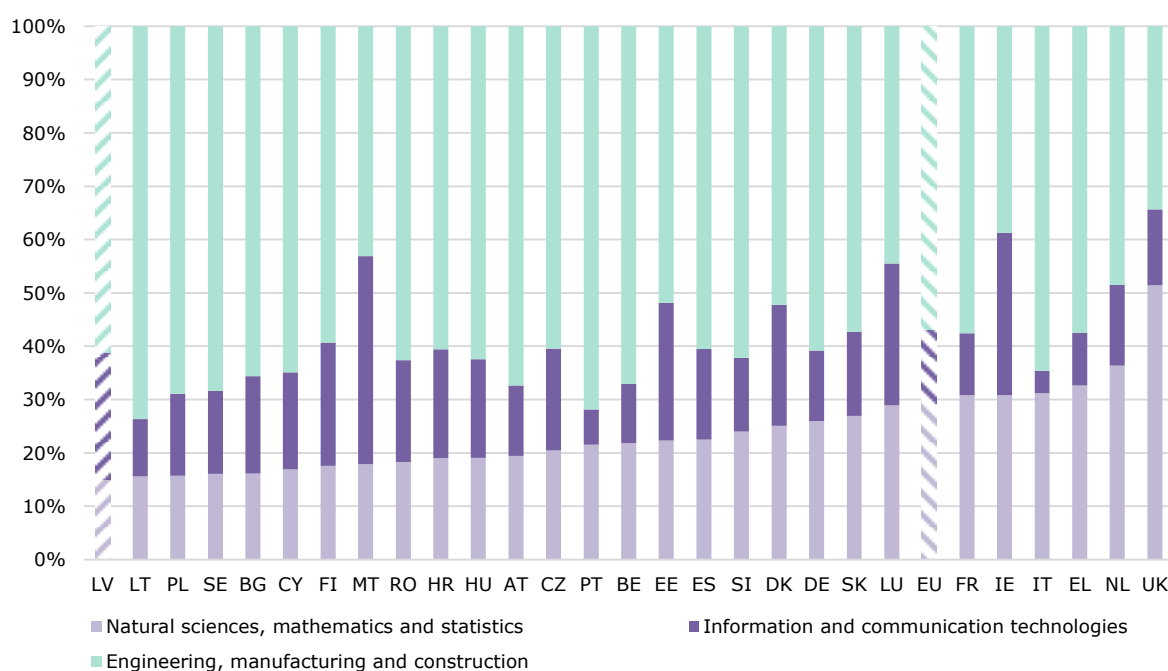
⁹⁰ ESF project on the development and implementation of an education quality monitoring system (2018-2021).

The switch to education in Latvian is being implemented. In the 2019/2020 school year, a transition will begin from the five existing minority education models⁹¹ to three new models at the basic education stage. The transition to the new bilingual education model in grades 7-9 will also be initiated, with at least 80% of the curriculum, including foreign languages, taught in Latvian. State examinations in the ninth grade will be taken in Latvian.

6. Modernising higher education

The share of young adults with tertiary education decreased in 2018 compared to the previous year, but remains above the EU average. 42.7% of 30-34 year-olds had a tertiary qualification in 2018, down from 43.8% in 2017. The decrease was more pronounced for men (from 32% to 30.6%), further widening an already significant gender gap (24.6 pps.) STEM graduates represented 21% of all graduates in 2017, well below the EU average of 26%, while the proportion of graduates in natural sciences, mathematics and statistics was the lowest in the EU (3.1%, against an EU average of 7.6% in 2016). On a positive note, the employment rate for graduates in the 20-34 age group rose sharply in 2018 (84.1%, up from 78% in 2017) and now exceeds the EU average of 81.6%.

Figure 3 Distribution of STEM graduates by field of study, 2017



Source: Eurostat, UOE. Online data code: [educ_uoe_grad02](#)

The new government has pledged to improve the quality and inclusiveness of higher education. This includes stronger support for students in need and a commitment to ensuring financial support to the three-pillar funding model introduced in 2015. Planned measures include digitalisation in higher education, improving international cooperation, revising academic career policies and simplifying recruitment of international teaching staff. The government's programme sets as a benchmark the inclusion of at least one Latvian university among the top 500 universities globally. It also pledges to continue addressing the fragmentation of higher education programmes. The financing priorities submitted by the Education Ministry for government approval for 2019 include an annual funding increase for study programmes and other quality-related investment in state-funded higher education institutions (HEIs). One of the Education Ministry's proposed financing priorities is financing under the second and third pillars of the model, which includes performance-based funding and funding for innovation and development of HEIs.

⁹¹ National minority education models specify the proportion of subjects taught in Latvian, bilingually and/or in a national minority language.

New regulations on the licensing and accreditation of higher education study programmes came into force on 1 January 2019. These allow HEIs to choose the agency evaluating the quality of their 'study directions'⁹². This quality assurance can be provided by the national agency, the Academic Information Centre, or by any other agency included in the European Quality Assurance Register.

New measures to reduce fragmentation of the higher education system and to develop higher quality study programmes are planned, with support from EU funds. While this is a step in the right direction, it remains to be seen whether HEIs can be motivated to reduce the scope and number of programmes as they compete for students. Overall, available research funding in the country is still low, and the amount of performance-based funding for HEIs is limited. The reforms' success will largely depend on more resources for academic research being made available, and on the ability of the government agency responsible for accreditation of study programmes to conduct a rigorous evaluation of the quality offered by HEIs. Several factors will play a key role, including the quality of the new higher education programmes to be developed and the availability of qualified academic staff. Given that research funding is still low, and the amount of performance-based funding for HEIs is limited, additional measures (such as a stricter quality assurance mechanism for the next round of accreditations for HEIs) may be needed to achieve real improvement in the quality of higher education programmes.

7. Modernising vocational education and training

Enrolments in VET are growing, but remain below EU levels. In 2017, nearly 9000 new students entered formal VET programmes in Latvia, an increase of more than 13% on 2016. Total enrolment in upper secondary VET in Latvia also saw a slight increase in 2017, with 38.6% of students enrolled at that level attending vocational programmes. However, the figure is still below the EU average of 47.8%. Students enrolled in VET had exposure to at least some practical work experience – as most educational programmes include some practical elements in the curriculum⁹³. The employability of recent VET graduates in 2018 saw a notable increase, reaching 75.8% compared to 69.1.8% in 2017, but was still below the EU average of 79.5% in 2018⁹⁴. The Council of the European Union has adopted a country specific recommendation to Latvia under the 2019 European Semester to 'increase the quality and efficiency of education and training, in particular of low-skilled workers and jobseekers, including by strengthening the participation in vocational education and training and adult learning' (Council of the European Union, 2019).

Several reforms and initiatives are ongoing to strengthen the VET system, including work-based learning and apprenticeships. In April 2018, 15 sectoral qualification frameworks were officially approved under the current reform of the VET system curriculum (2016-21), 15 sectoral qualifications structures were officially approved in April 2018. They2021). These serve as guidelines for developing and implementing VET programmes. Each framework comprises occupations essential for performing activities in particular sectors, specialisations and levels of qualifications. During 2018, Latvia supported implementation of work-based learning and apprenticeships via a number of projects. These included cross-border mobility for apprenticeship students, continuous professional development for VET teachers and in-company trainers, and support to businesses in implementing apprenticeships. Following the decrease of mandatory training for in-company trainers from 72 to 32 hours, the Employers' Confederation provided training programmes in 2017/18 enabling 440 trainers to work with apprentices in companies. Altogether, more than 1000 sectoral specialists have attended in-service training to acquire pedagogical minimum to work with apprentices in companies.

Some measures have been taken to support teachers in VET. In December 2018, the Cabinet of Ministers amended the regulations equalising salaries of heads of vocational schools to those of heads of colleges. A new regulation simplified the pedagogical qualification requirements for vocational teachers to make it easier to involve industry professionals with a higher education degree but no teacher training.

⁹² A 'study direction' can include several programmes.

⁹³ Source: Eurostat, UOE, 2017.

⁹⁴ Source: Eurostat, Labour Force Survey, 2018.

Box 2: European Social Fund support for integration of disadvantaged groups through vocational training

The State Social Integration Agency, Latvia's only provider of professional rehabilitation services, have developed completely new training programmes with tailor-made education/training content and hands-on experience for people with severe disabilities (the loss of ability to work is in the amount of 60-100%) and persons with mental (psychosocial, intellectual or cognitive) disabilities depending). The training's content depends on each person's abilities and interests. Five professional training programmes ('Clerk', 'Florist', 'Horticulturist', 'Warehouse employee' and 'Carpenter's assistant') and 35 skills training programmes are now available to the target group. The programmes were developed based on a study which identified tasks that are in demand in the labour market and that employers would be willing to delegate to people with disabilities. All programmes include practical training/practice in the company to assist in to help students' employability. After completing a vocational rehabilitation programme (8-18 months), people with severe disabilities receive a document certifying their professional qualification, while people with mental disabilities who complete a skills training programme (4-12 months) receive a document certifying their skills. The plan is to involve 100 people in the training, with the aim that at least 60 of them will be employed, start a job search or continue education 6 months after completing the training programme. In total, EUR 1.252 million is budgeted for the project, with EUR 1.064 million from the ESF.

8. Developing adult learning

The share of the population with low educational attainment is significantly below the EU average. Only a relatively small share of adults in Latvia (9.3%) have at most a low qualification, against an EU average of 21.9%. In addition, the share of low-qualified adults in employment was, at 58.2%, above the EU average of 56.8%. However, the likelihood that adults in Latvia would frequently update their knowledge and skills through adult learning was lower than the EU average. For example, only 6.7% of adults aged 25-64 in Latvia have had a recent learning experience during the last 4 weeks, compared to EU average of 11.1%⁹⁵.

The implementation of the 2016-2020 adult learning governance model provides better opportunities for adults to engage in learning, but there is still significant scope for improvement. The main types of provision of adult education were redefined to encompass: provision to raise attainment of basic skills; provision to attain a recognised qualification during adulthood; provision targeting transition to the labour market; provision of non-formal adult education, and other types of publicly subsidised provision for adult learners. . Several new initiatives have been launched since 2018, targeting unemployed persons and young people, fostering employability among the elderly and expanding learning opportunities for adults in general.

Several measures were taken in 2018 to strengthen the professional development of adult educators. New regulations were adopted on the 'necessary academic and professional qualifications of pedagogues and professional competence development procedures for Pedagogues' were adopted in 2018. They set out the requirements to acquire the right to work as an educator. Although these requirements do not apply to non-formal adult education, they affect adult learning policy more broadly by making teacher education more focused on individualisation for personalised learning. Apart from these general requirements for teachers, mandatory pedagogical in-service courses are also required. Furthermore, as part of the national reforms in vocational education and training and adult learning, a methodological guide was drawn up for working with adults in vocational education institutions.

⁹⁵ Eurostat, Labour Force Survey, 2018.

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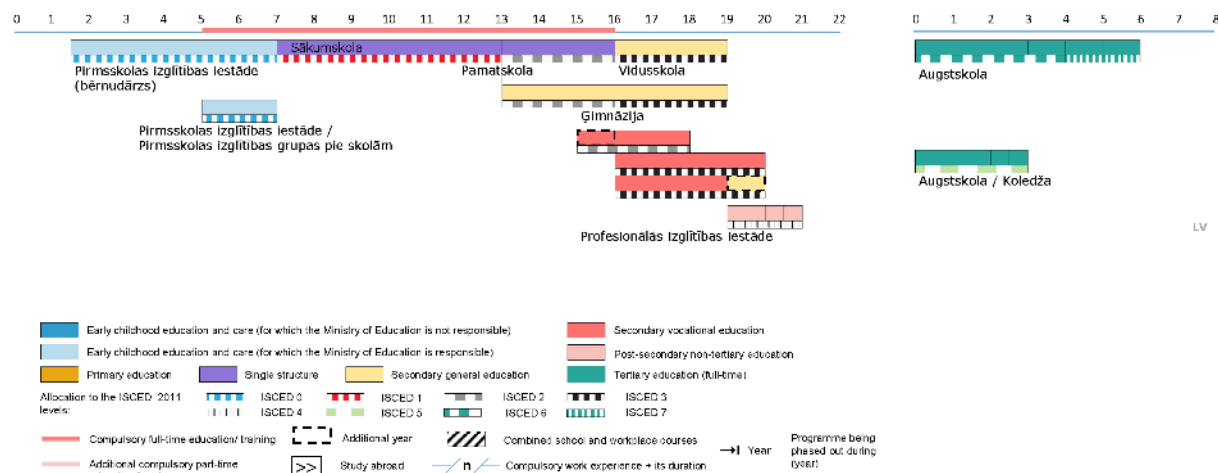
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Annex I: Key indicator sources

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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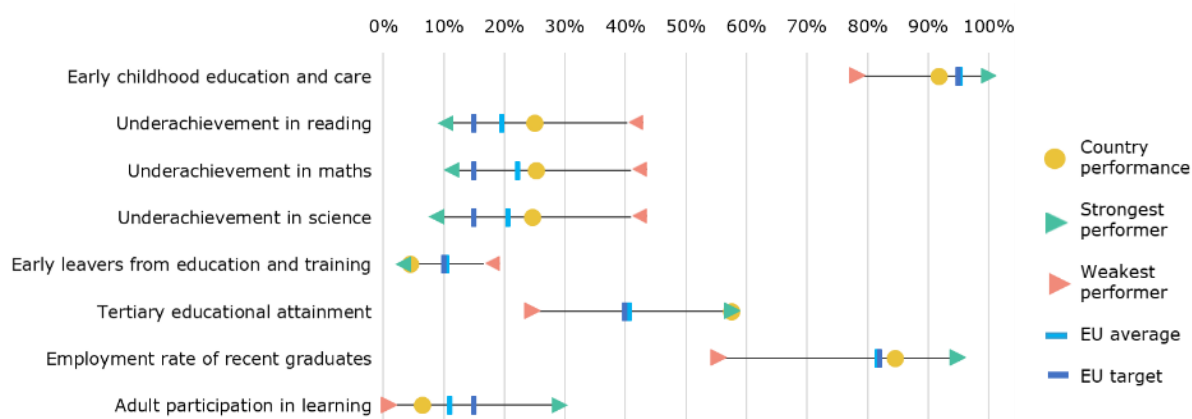
LITHUANIA

1. Key indicators

			Lithuania		EU average	
			2009	2018	2009	2018
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			8.7%	4.6%	14.2%	10.6%
Tertiary educational attainment (age 30-34)			40.4%	57.6%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			84.3%	91.9% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading		24.4%	25.1% ¹⁵	19.5%	19.7% ¹⁵
	Maths		26.4%	25.4% ¹⁵	22.3%	22.2% ¹⁵
	Science		17.0%	24.7% ¹⁵	17.7%	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)						
	ISCED 3-8 (total)		73.0%	84.7%	78.3%	81.6%
Adult participation in learning (age 25-64)						
	ISCED 0-8 (total)		4.6%	6.6%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	8.6% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)		:	6.8% ¹⁷	:	8.0% ¹⁷
Other contextual indicators						
Public expenditure on education as a percentage of GDP			7.2%	4.9% ¹⁷	5.2%	4.6% ¹⁷
Education investment	Expenditure on public and private institutions per student in € PPS	ISCED 0	€3 567 ¹²	€4 409 ¹⁶	:	€6 111 ^{15,d}
		ISCED 1	€3 689 ¹²	€4 385 ¹⁶	€5 812 ^{12,d}	€6 248 ^{15,d}
		ISCED 2	€3 398 ¹²	€4 042 ¹⁶	€6 937 ^{12,d}	€7 243 ^{15,d}
		ISCED 3-4	€3 968 ¹²	€4 042 ¹⁶	:	€7 730 ^{14,d}
		ISCED 5-8	€6 542 ¹²	€5 357 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born		8.6%	4.6%	13.1%	9.5%
	Foreign-born		: ^u	: ^u	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born		40.0%	57.8%	33.1%	41.3%
	Foreign-born		: ^u	47.7% ^u	27.7%	37.8%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		57.8%	77.9%	72.5%	76.8%
	ISCED 5-8		83.9%	90.4%	83.8%	85.5%

Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission's Joint Research Centre (JRC) on UOE data. Further information can be found in Annex I and Volume 1 (ec.europa.eu/education/monitor). Notes: The EU's 2009 PISA averages do not include 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

- 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.

3. A focus on teachers

The teaching workforce is ageing. The proportion of pre-primary and school teachers and academic staff aged 50 or more was 47% in 2017, up 4.9 pps since 2013. Unlike most other EU countries, in Lithuania retirement for teachers⁹⁶ is not compulsory on reaching the standard pension age. Approximately 6% of serving teachers were already at retirement age in 2016/2017 and this share is expected to reach 20% in 2021. A revision of the incentive system, which currently pays a lump sum⁹⁷ on retirement, may make it a more attractive option than staying on.

Lithuania has taken steps to monitor teacher supply and demand. Despite recent increases in the number of returning emigrants, negative demographic trends in Lithuania are resulting in teacher oversupply. However, future shortages due to the teacher age profile may be further aggravated as less than 15% of graduates from initial teacher education actually enter the profession. To anticipate shortages and oversupply, Lithuania developed in 2018 a pilot tool that provides short and mid-term forecasts of teacher demand (MOSTA, 2018a). Further development of this model and teaching planning practices may help ensure the continued entry of new talent into the profession, while maintaining control over the overall size of the teaching workforce.

Box 1: Forecasting the teaching workforce

Demographic trends in Lithuania are negative and the teaching workforce is ageing rapidly. To address these challenges and anticipate teacher shortages and oversupply, in 2018 Lithuania developed a forecasting pilot tool with support from the European Commission's Structural Reform Support Programme. This provides short-term (one-year) and mid-term (four-year) forecasts of the teaching workforce that accommodate changes in pupil numbers, the ageing teaching population, low graduation and transition-to-employment levels among initial teacher education graduates, and other policy changes such as an earlier start to primary education.

The model forecasted that 3 077 teachers working in 2018 will retire by 2022. Taking into account dropouts and the low numbers of students in initial teacher education actually becoming teachers, the model estimated that only 126 new teachers were likely to enter schools in 2018/2019. Even if all novice teachers found a job, there would be a shortage of over 100 teachers. The highest cumulative four-year shortage was forecast for primary school teachers, amounting to almost 700. If pupil participation in preschool education is to increase in rural areas, the shortage could be even higher.

However, these results are tentative. Lithuania is now planning to allocate more resources to support further model development to ensure the reliability and comparability of the forecasting results.

⁹⁶ The retirement age is moving towards age 65 (in 2026) and increases each year by four months for women and two months for men. In 2019, the retirement age for men is 63 years and 10 months, while for women it is 62 years and eight months.

⁹⁷ The size of the payment depends on the teacher's work experience in the school from which s/he will retire. The minimum available pay is two average monthly salaries if work experience is less than 36 months. If work experience is higher than 240 months, the maximum is six average monthly salaries.

Unattractive career prospects contribute to the low perception of the teaching profession in society. According to data from the 2018 OECD Teaching and Learning International Survey (TALIS), only 14.1% (v 17.7% at EU level⁹⁸) of teachers believe that teaching is a valued profession in society. This is reflected in the low number of graduates who enter the profession (15%) and the low share of male teachers and early childhood education and care staff (11% v 23% at EU level). This may due to the unattractive opportunities available for career progression. Teachers can voluntarily apply to obtain one of the higher qualification categories, namely senior teacher, teacher methodologist and teacher-expert, enabling them to earn higher salaries and take up different responsibilities. Selection for these categories is mainly based on experience and qualifications. Methodologists and experts are supposed to focus on spreading good practice and developing professional learning communities, but they often take on collaborative tasks at municipal level contributing to other schools or regional events (Shewbridge, C. et al., 2016).

Box 2: Time for Leaders

School principals in Lithuania have demanding and far-ranging responsibilities. This makes finding highly qualified and motivated school leaders crucial to ensuring good management of the teacher workforce and school infrastructure.

Lithuania's European Social Fund-financed 'Time for Leaders' project, launched in 2009, is now at its third stage. The overall aim is to develop an integrated system to develop leadership skills at all education levels. The project also involves staff from municipal authorities, school administrative staff, consultants and NGO members.

Participants are expected to strengthen their managerial skills by learning from managers at national, regional and school level, and by participating in traineeships and education networks.

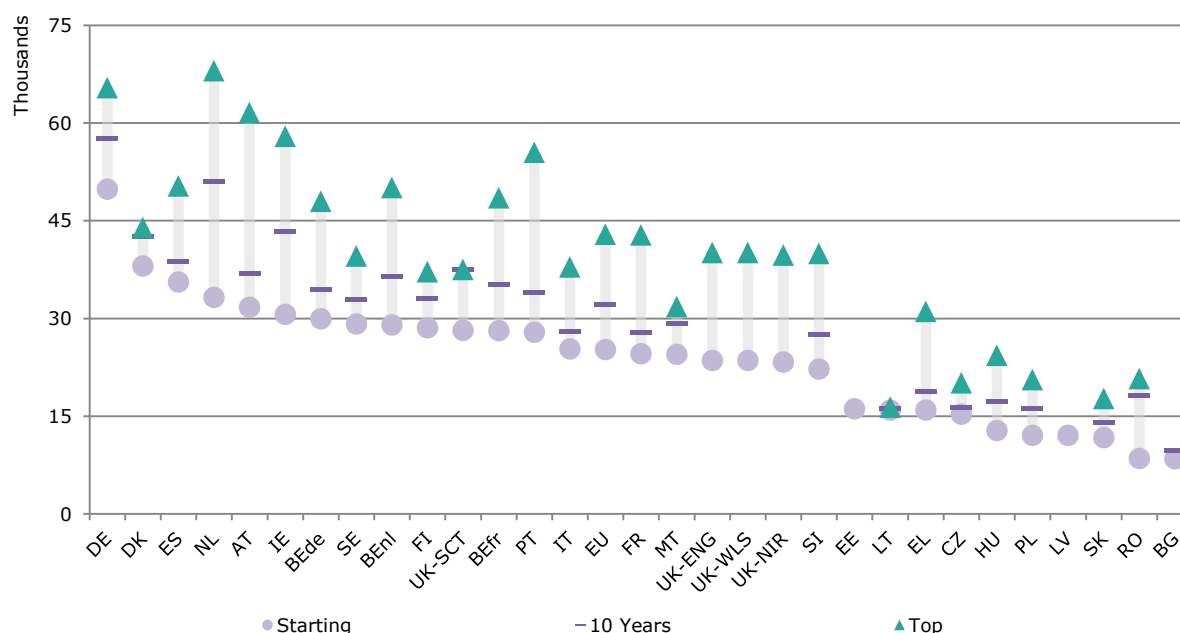
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Measures have been put in place to improve working conditions and teacher salaries, but challenges remain. TALIS 2018 shows that teachers' motivation is comparatively low and tends to decrease over time. Fewer novice teachers (70.8% v EU average of 83.7%) report that if they could decide again, they would still become a teacher; the share dips further (63.9% v 83.7% at EU level) with more than five years of service. The average starting statutory⁹⁹ salary of teachers at the lower general secondary level, expressed in purchasing power standards (PPS), is well below the EU average (PPS 15 981 v PPS 25 946 in 2016/2017). By career end it increases by only 2.6% (v 70% at EU level), the lowest salary progression in the EU (European Commission/EACEA/Eurydice, 2018) (Figure 2). A teacher's salary used to depend only on the number of lessons taught. However, with declining student numbers and school consolidation, many schools responded by lowering the number of contact hours, which resulted in lower salaries and pension rights. In response, teachers in small schools sometimes take on a second job (Shewbridge, C. et al., 2016). To address this issue and increase income stability, teachers are now allowed to teach two subjects, while a fixed monthly salary system was introduced in 2018. The new system allows for teachers to be paid for all work done for the school community. Discussion on further increases in teachers' salary are ongoing between teachers' union and government.

⁹⁸ 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.

⁹⁹ Statutory salary is only one component of teachers' compensation. Other benefits, such as regional allowances for teaching in remote areas or family allowances may also form part of teachers' total remuneration. Statutory salaries of teachers can vary according to a number of factors, including the level of education taught, the qualification level of teachers, and the level of experience or the stage of the career of teachers.

Figure 2 Teacher salary progression in lower secondary public school in PPS, 2016/2017



Source: Eurydice, 2018. Note: Annual basic gross statutory salaries (starting salary, salary after 10 years and top of the salary range) for full-time teachers.

Efforts are being made to improve the quality of teacher education. Poor student outcomes in Lithuania could be also explained by outdated teaching practices and the low quality of teaching instruction. TALIS 2018 shows that Lithuanian teachers report the highest level of need in the EU for professional development in ICT skills for teaching (23.6% v 16.1% at EU level). The Teachers Training Regulation, adopted in 2018, sets quality requirements for initial education programmes and for the new induction programme covering the first year at school. The Regulation also specifies possibilities for continuing training and professional development and sets criteria for the new three national teacher training centres. Previously, any higher education institution was permitted to introduce a new programme. This centralisation aims to ensure higher quality in the courses provided.

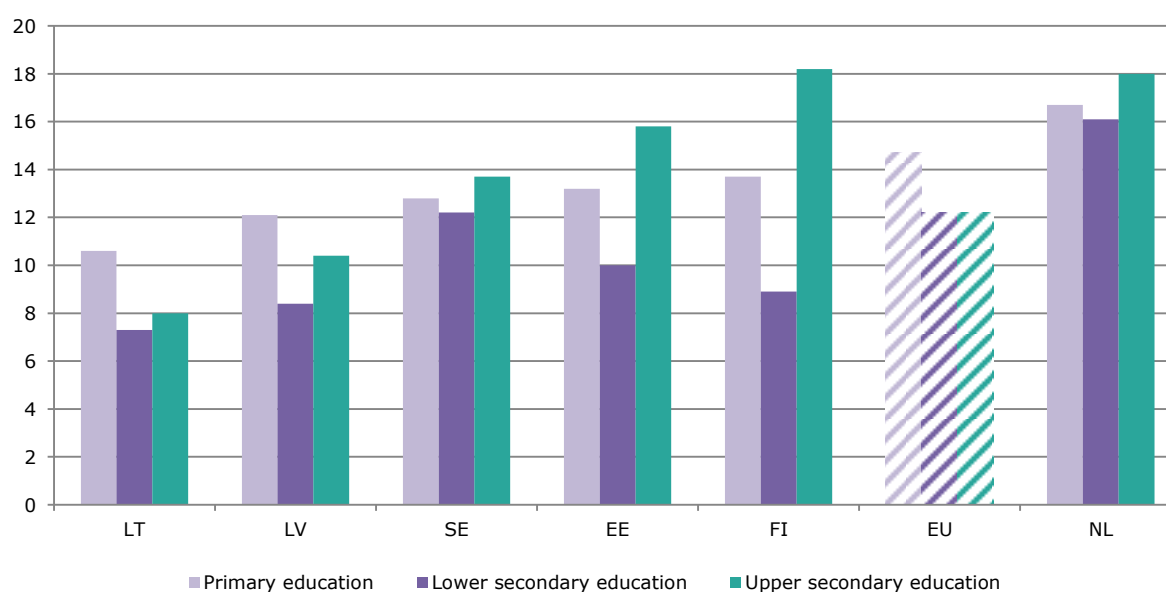
Teacher professional development appears fragmented and not associated with school development needs. Teachers are entitled to a minimum of five days of continuing professional development (CPD) during a school year. The payment of fees is mainly covered by the school budget and the European Social Fund. However, according to TALIS 2018, 43.0% of teachers (v 38.9% at EU level) consider that the CPD offered is not relevant. Professional development is provided by a range of different public and private providers, and the choice of courses is made by individual teachers. The lack of analysis through effective teacher appraisals and regular school self-evaluation limits the possibility to target CDP activities to individual and collective learning needs and establish a community of learners within schools. (Shewbridge, C. et al., 2016). It also results in inefficient use of public and European resources.

4. Investing in education and training

Spending in education has decreased but is still comparatively high. In 2017, Lithuania spent 4.9% of its GDP on education, down from 6.4% in 2010, but slightly higher than the EU average (4.6%). As a percentage of total public expenditure, at 14.8%, Lithuania has the third highest share spent on education after Cyprus and Latvia (EU average: 10.2% in 2017), but private investment into education is rather very small. In 2017, Lithuania spent only 18.4% of its education expenditure on pre-primary and primary schools, which was the lowest share in the EU (32.0%), while expenditure on secondary (40.4%) and tertiary education (15.0%) were both around the EU averages (41.0% and 14.8% respectively). Moreover, the share of 'other expenditure', which includes items such as school transport and meals, was the highest in the EU (26.2% v 12.2% at EU level). A better allocation of resources among different education levels could help improve access to early childhood education and care (see Section 5) and reduce the amount spent on maintaining schools with a low number of students.

Lithuania is committed to increasing spending efficiency, but the impact of measures taken is not yet clear. The number of pupils and students in the education system declined by 21.8% over 2010-2017. In 2017, Lithuania posted some of the EU's lowest teacher/student ratios at primary (10.6 v 14.7 at EU level) and secondary level (7.3 v 12.2 at lower secondary and 8.0 v 12.2 at upper secondary levels) (Figure 3). This calls for strategies to preserve and improve quality while ensuring the system's efficiency. In this context, the Council of the European Union addressed a country specific recommendation to Lithuania called on it to 'improve quality and efficiency at all education and training levels', (Council of the European Union, 2019). In 2018, a 'class and quality basket system', under which funds are allocated based on the number of classes in a school and on quality indicators, was introduced to improve school efficiency and reduce disparities between schools. In the new system municipalities must add extra funding for extremely small classes if they want to maintain them, but this was mitigated by setting the minimum number of students per class at 8 at primary and 12 at secondary level. No information is as yet available on this measure's impact. Municipalities are reluctant to close down schools because of the impact on rural communities. Moreover, extra funding to ensure more equitable distribution of resources will target only 180 out of 1 125 schools, with a risk of limited impact and ever increasing disparities between rural and urban areas (MOSTA, 2019). Achieving higher efficiency while ensuring quality will require greater coordination between municipalities — which separately plan their educational budgets and enjoy great autonomy in allocating resources — and government. Similarly, for higher education, efforts to optimise the network of institutions are slow because of the high decentralisation of decision-making (see Section 6).

Figure 3 Teacher-to-student-ratio at primary and secondary level, 2017



Source: Eurostat, UOE, 2017.

5. Modernising early childhood and school education

Despite increasing participation in early childhood education and care (ECEC), ensuring equal access remains a challenge. The participation of children between 4 years old and compulsory school age was 91.9% in 2017, up 8.1 pps since 2010. This remains below the EU average of 95.4%. Participation in formal childcare by children aged less than 3 also improved between 2010 and 2017: by 2017 it had reached 20.3% in 2017 (14% in 2010), still well below the EU average of 34.2%. If we compare the participation of children aged 3 to the mandatory school age from households at risk of poverty and social exclusion with children from a more advantaged background, we find a gap of 15.7 pps. This is above the 11.3 pps EU average gap in 2016¹⁰⁰. Access to early education is not ensured for all children: in 9 out of 60 municipalities, kindergartens do not have enough places for all wanting to attend. Only 37 municipalities ensure transportation for children in remote rural areas (where children are at a higher risk of poverty and exclusion)

¹⁰⁰ For further details see Education and Training Monitor 2019 — Volume 1, Section 2.

(National Audit Office, 2018). The increasing number of private centres is making ECEC service more accessible, but mainly in urban areas. Moreover, the proportion of the costs of privately provided ECEC reimbursed through public subsidies varies by municipality, and not all families receive a subsidy (European Commission, 2019).

While the structural reform programme¹⁰¹ aims to improve quality and efficiency at school and university, measures to improve ECEC quality are lacking. A recent audit showed that the salary of preschool teachers is on average 36% lower than that of teachers in general education. Coupled with poor working conditions¹⁰², this may contribute to the profession's low attractiveness and fuel the current staff shortage. Moreover, a monitoring system, which could help ensure that children receive high quality pre-education and care, is lacking (National Audit Office, 2018).

Lithuania continues to perform well in preventing early leaving from education and training (ESL). With an ESL rate of 4.7% (EU average: 10.6%), Lithuania was the second-best performer in 2018. The rate has decreased by 3.3 pps since 2010, and in rural areas fell by 5.0 pps from 11.6% in 2010 to 6.6% in 2018.

School curricula and assessment practices are being reformed. To meet the objectives in the structural education reform programme, an updated competency framework was designed in 2018 and negotiated with the stakeholders in the first half of 2019. Nine working groups will develop new syllabuses to be piloted in 100 schools. There are plans to develop a new aligned evaluation and assessment framework, which should ensure a good balance between formative and summative assessment, currently lacking, and collect information to monitor learning outcomes. Enhancing at the same time teacher assessment practices and principals' appraisal will be key challenges of this reform.

6. Modernising higher education

The tertiary attainment rate is still the highest in the EU. In 2018, tertiary attainment among those aged 30-34 was 57.6%, above the EU average of 40.7% and the national EU2020 target (48.7%).

Skills mismatch and over-qualification are widespread among tertiary graduates. Recent tertiary graduates have a high employment rate (90.4% v 85.5% at EU level in 2018), but at the beginning of their career they tend to work in less qualified jobs because they lack job relevant skills (MOSTA, 2018b). Furthermore, among businesses that have recruited or tried to recruit ICT specialists, 40% reported hard-to-fill vacancies (European Commission, 2019). 21.2% of people aged 15-64 had a qualification higher than that required by their job, above the EU average of 14.7% in 2016. To attract highly qualified academic staff, between 2017 and 2018 the average salary of staff working in public universities increased by 18%. The quality of tertiary programmes may benefit from a regular framework for anticipating and monitoring skills demand and from enhanced cooperation between businesses and universities¹⁰³.

Optimising the university network has been an objective, but there is a lack of central steering of the process. In 2018, Parliament approved the merger of three universities. Although the initial plan outlined specific aims, guiding criteria and expected results, implementation so far has not complied with these principles. The fact that mergers of two or more institutions into one require the agreement of rectors and university staff is watering down the process. Although one of the plan's principles was to avoid duplicating fields of study in the same city, one recent merger failed to eliminate the duplication of law studies in Vilnius. Furthermore, the reforms of funding and quality assurance systems, which were also included in the comprehensive reform launched in 2017 and planned to be finished in 2020, remain at the planning stage.

¹⁰¹ For more on the structural education reform launched in 2018, see [http://lr.v.lt/uploads/main/documents/files/LRV%206%20reformas%20spaudai%20sutvarkytas%20\(1\).pdf](http://lr.v.lt/uploads/main/documents/files/LRV%206%20reformas%20spaudai%20sutvarkytas%20(1).pdf)

¹⁰² Last audit showed that a third of all the audited pre-primary schools breach hygiene norms.

¹⁰³ According to the Centre for Quality Assessment in Higher Education (SKVC), only 6% of the higher education study programmes evaluated between 2010 and 2015 received the highest evaluation scores.

7. Modernising vocational education and training

In 2017, just over 7 300 new students entered formal VET programmes, a slight increase on 2016. Total enrolment in upper secondary VET was largely unchanged in 2017, with 27.4% of students at that level attending vocational programmes, still well below the EU average of 47.8%. Students enrolled in VET had limited exposure to work-based learning — none of the formal VET educational programmes are reported to combine school and work-based programmes. Several ESF projects provide support for apprenticeships and work-based learning, but this maybe not reported or outside the formal education system and thus not covered by official statistics. The employability of recent VET graduates saw a notable increase in 2018, reaching 79.2% v 71.5% in 2017 and the EU average of 79.5%.

Further implementation of VET reforms continued throughout 2018. New modular programmes were introduced and 300 outdated programmes were terminated. In addition, a new regulation was put in place in October 2018 to organise 18 sectoral professional committees to ensure cooperation between relevant stakeholders in specific sectors of the economy.

In 2018 Lithuania continued to develop continuing professional development for vocational teachers and adult educators. As part of a national project launched in 2016, 150 vocational teachers and school leaders were trained in 2018 on competences related to communication and cooperation, working culture, creativity development, organisation of distance learning, assessment of learning outcomes, digitalisation of curricula and training of learners with special needs.

8. Developing adult learning

Opportunities for adults to participate in learning in Lithuania are limited. Only 6.6% of adults aged 25-64 have had a recent learning experience during the last 4 weeks, against the EU average of 11.1%, with almost no progress over the decade.

Despite the recognition that adult learning is an important challenge in Lithuania, concrete policy initiatives remain scarce. The structural reform of education, adopted in July 2018, includes only one action targeted at adult learning — the training of municipal adult learning coordinators. The mandate of the Non-formal Adult Education Council expired in 2017 and has not been renewed. While some financing is available, including from EU structural funds, lack of impact suggests the need to better leverage such investment, for example through more significant co-financing of learning by employers. Limited availability of information and guidance services for adults is another barrier. In November 2018, a new draft law on non-formal adult education was proposed and formal deliberations on it started in Parliament. The draft law aims to narrow the scope of existing legislation, focusing on basic and transversal skills to avoid overlaps with the existing VET Law.

Some steps have been taken towards establishing the profession of adult teacher, but further development is needed. The Law on non-formal adult education and continuing education established the concept of 'adult teacher' as a person who has acquired state-defined education and competences attesting to his or her ability to teach adults. However, there are very few dedicated university programmes, in part likely due to lack of public co-financing for such programmes. The profession of adult teacher/educator is not included in the Lithuanian Classification of Occupations (a national version of the International Standard Classification of Occupations ISCO-08). Overall, existing arrangements do not ensure that professionals involved in the provision of adult learning possess at least basic pedagogical skills for teaching adults.

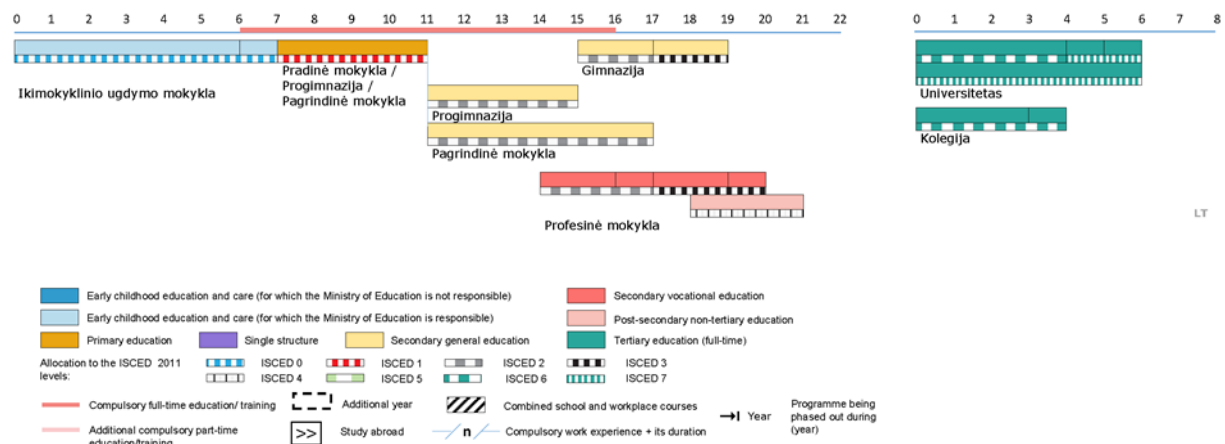
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Annex I: Key indicator sources

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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LUXEMBOURG

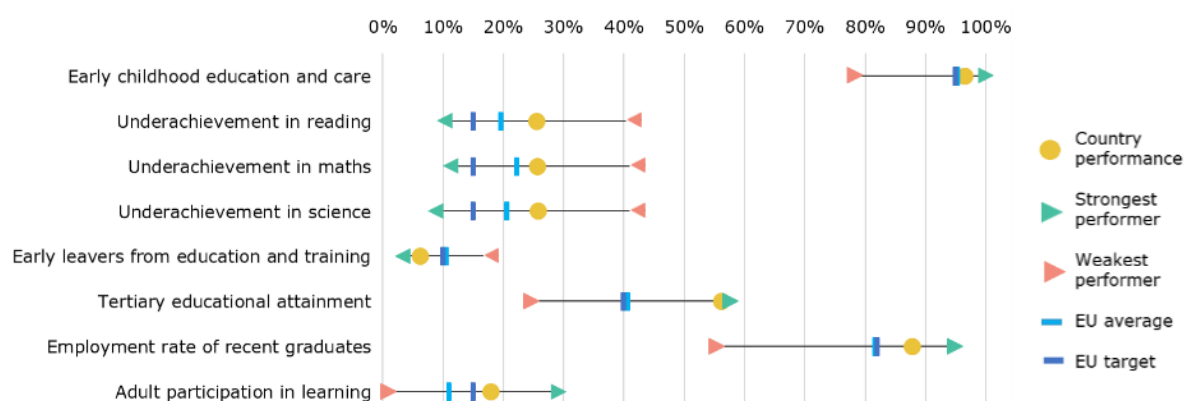
1. Key indicators

		Luxembourg		EU average	
		2009	2018	2009	2018
Education and training 2020 benchmarks					
Early leavers from education and training (age 18-24)		7.7%	6.3%	14.2%	10.6%
Tertiary educational attainment (age 30-34)		46.6%	56.2%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)		94.6%	96.6% ^{17,b}	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading	26.0%	25.6% ¹⁵	19.5% ^{EU27}	19.7% ¹⁵
	Maths	23.9%	25.8% ¹⁵	22.3% ^{EU27}	22.2% ¹⁵
	Science	23.7%	25.9% ¹⁵	17.7% ^{EU27}	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-8 (total)	85.5% ^b	87.9%	78.3%	81.6%
Adult participation in learning (age 25-64)	ISCED 0-8 (total)	13.8%	18.0%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)	:	73.6% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)	:	6.9% ¹⁷	:	8.0% ¹⁷
Other contextual indicators					
Public expenditure on education as a percentage of GDP		5.5%	4.7% ¹⁷	5.2%	4.6% ¹⁷
Education investment	ISCED 0	€14 760 ¹²	€15 610 ¹⁵	:	€6 111 ^{15,d}
	ISCED 1	€14 986 ¹²	€15 907 ¹⁵	€5 812 ^{12,d}	€6 248 ^{15,d}
	ISCED 2	€15 156 ¹²	€16 004 ¹⁵	€6 937 ^{12,d}	€7 243 ^{15,d}
	ISCED 3-4	€15 169 ¹²	€14 460 ¹⁵	:	€7 730 ^{14,d}
	ISCED 5-8	:	€35 658 ¹⁵	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born	5.4%	6.5%	13.1%	9.5%
	Foreign-born	13.4%	6.0% ^u	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born	36.5%	50.9%	33.1%	41.3%
	Foreign-born	54.4%	58.6%	27.7%	37.8%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	79.3%	78.5%	72.5%	76.8%
	ISCED 5-8	90.4%	94.0%	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 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, 17 = 2017.

Figure 1 Position in relation to strongest and weakest performers



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

2. Highlights

- In 2018, more flexible entry requirements for the recruitment competition for early childhood and primary education teachers attracted more candidates.
- Pupils' performance is clearly 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.

3. A focus on teachers

High salaries attract more young people and more men into teaching than in other countries. The proportion of teachers under 40 is over 40% in primary and lower secondary education. Teachers' salaries are the highest in the EU at all levels: the statutory starting salary for a lower secondary teacher (in purchasing power standards) is more than double the EU average and salaries increase subsequently in line with years of experience (European Commission, 2018). While a large majority of primary teachers are women, 46% of secondary teachers are men, the second highest proportion in the EU.

In 2018, more flexible entry requirements for the recruitment competition for early childhood and primary education teachers attracted more candidates. Despite the high salaries, Luxembourg faces a shortage of teachers, partly because of the requirement, in the teachers' competition, to demonstrate a command of the three official languages. In 2018, the conditions for applying for the primary education recruitment competition were relaxed and there were more candidates than in 2017. The number of recently graduated candidates more than doubled. New features included the possibility to apply with a qualification for cycle 1 (pre-school) only or for cycles 2-4 (primary education), as well as with a qualification for all cycles (1-4). Also, the amended law on primary education (Government, 2018a) allows for the recruitment in 2018/2019 of candidates with a bachelor's degree in programmes related to primary education as temporary teachers. In 2016/2017, one in four primary and secondary teachers had a temporary contract.

Teachers' initial education and continuing professional development have been strengthened to improve the quality of teaching. As from September 2016, a three-year induction period has been introduced for all new teachers, both in primary education, where a similar traineeship did not exist, and in secondary education, replacing the previous two-year programme. The induction period is organised jointly by the school in which the trainee is based and the Training Institute for National Education (IFEN). Every trainee is mentored by a theoretical advisor from IFEN and a practical advisor from their school. Trainees are exempted from a certain number of teaching hours so that they can attend teaching theory classes and peer exchange sessions organised by IFEN. In 2018, the induction period was reduced from 3 to 2 years for teachers who had undergone a certified practice period of at least 20 weeks in the course of their studies. For appointed teachers, the requirement for continuing professional development was doubled to 48 hours every 3 years (Government, 2018b).

4. Investing in education and training

Public expenditure on education is around the EU average, but expenditure per student is the highest in the EU. Public expenditure on primary to tertiary education per student expressed in purchasing power standard was the highest in the EU in 2015, the last available data, at 16 222 (followed by Sweden with 10 844). Public expenditure on education as a proportion of GDP is not a fully reliable indicator in Luxembourg, given that the cross-border workers and the foreign capital invested in Luxembourg make a significant contribution to the country's GDP. Measured as a percentage of the total public budget, Luxembourg spent 10.9% on education in 2017, against an EU average of 10.2%.

The school population is growing and becoming ever more diverse. According to Eurostat projections, the school-age population (3-18 year-olds) is expected to increase by 16% by 2030

and by 31% by 2040 compared with 2020. Between 2010 and 2017, it increased by 4.7% and pupils with Luxembourgish as their first language became the minority both in primary (36%) and secondary education (47.3%) (MENJE, 2018). In total, only 41% of pupils speak Luxembourgish as their first language.

5. Modernising early childhood and school education

Box 1: For an equal start – enhancing access and quality in early childhood education and care (ECEC)

Compulsory education starts with two years of pre-school from age 4. 96.6% of children participate in ECEC (EU average: 95.4%), which can be supplemented with an optional year from age 3. In the face of rapidly increasing demand, Luxembourg has invested heavily in extending access to ECEC and non-formal education facilities in the last 10 years, nearly tripling the number of places and doubling the availability of parental assistants (Neumann, 2018). At 60.8%, the proportion of children below 3 who participate in ECEC is one of the highest in the EU.

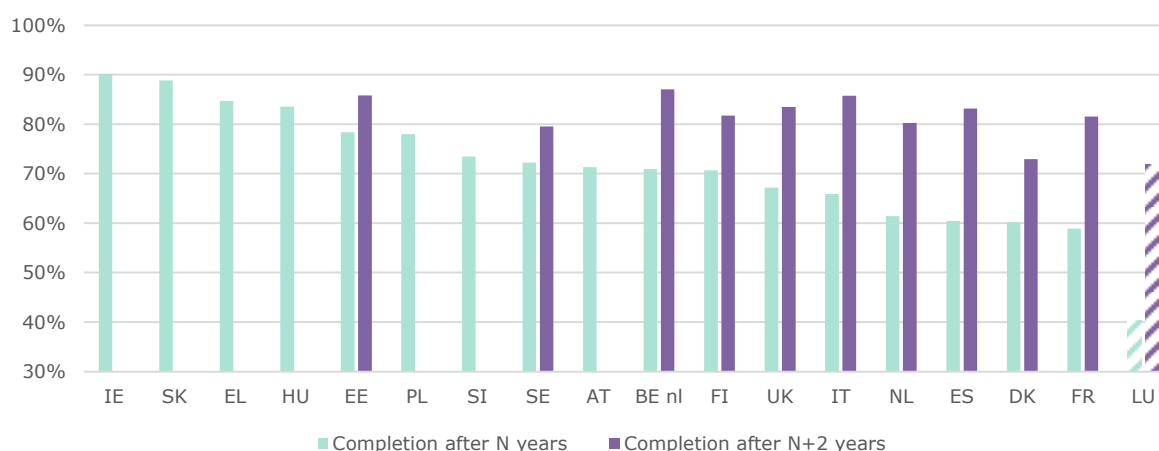
In a second phase of policy intervention, the focus switched from access to quality. In 2016, the Youth Act established national quality standards in ECEC with which all providers had to comply by September 2017 in order to be eligible for the state co-financing scheme (*chèque-service accueil*). This includes activities to familiarise children aged 1-4 with Luxembourgish and French. Every child is entitled to 20 hours per week of free education and care delivered by eligible providers, with additional hours for low-income families. ECEC providers are required to draw up general pedagogical concept that describes how their services are in line with the principles, characteristics and action areas of the national curriculum. They also have to document their professional activities. Regional agents have been appointed to advise on the content and formulation of the plans and visit the providers at least once a year. Compliance with the rules determines access to public subsidies and is required of all ECEC services, including home-based facilities.

Luxembourg's early school leaving rate, as measured by the Labour Force Survey in line with standard EU practice, stood at 6.3% in 2018. This is significantly below the EU average of 10.6%, but the figure should be interpreted with caution because of the limited sample size. National estimates based on the actual number of young people not completing upper secondary education indicate that early school leaving has been on the rise since 2009 and stood at 12.4% in 2016 (MENJE, 2018a). The Education Ministry's Local Action for Youth offices are responsible for identifying early school leavers, contacting them and helping them return to education or find a job. A School Mediation Service was created in 2018 to examine the cases of pupils at risk of drop-out because of the inappropriate use of available resources or flaws in the school system or legislation.

15 year-olds perform significantly worse than the EU average in all three subjects in the OECD programme for international student assessment (PISA) tests (mathematics, reading and science). Luxembourg's average performance, already below the EU average, worsened between 2012 and 2015, especially in science. The impact of socio-economic background on performance is the second strongest in the EU. It outweighs (by 2.7 times) the impact of the language spoken at home (MENJE and the University of Luxembourg, 2016) and even migrant background. When one adjusts for socio-economic status, the performance gap for children both of whose parents were born abroad is reduced by two thirds (OECD, 2017).

Grade repetition is frequent and is strongly linked to early school leaving. About 20% of pupils have repeated a year by the third grade of primary school (MENJE, 2018b); by the end of secondary education, this applies to 60%. Grade repetition is particularly high among pupils in technical secondary education, where 77% of final grade pupils will have repeated a year at least once (MENJE, 2018b). In general secondary education, the proportion is lower, but still significant (33%). Failing two years in the course of one's studies is the clearest predictor of early school leaving (MENJE, 2017a).

Figure 2 Successful completion of upper secondary programmes

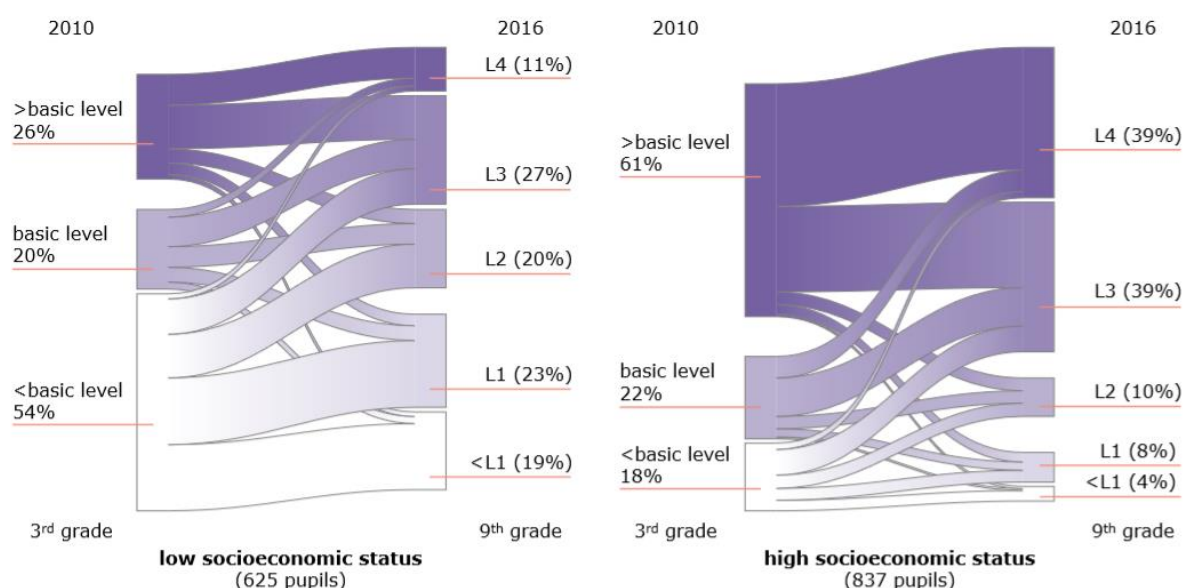


Source: OECD (2014).

The 2017 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. Between 2006 and 2016, the proportions of pupils guided to the academic track (*enseignement secondaire classique*) and the technical track (*enseignement secondaire général*) fell steadily, while those going to the lowest, vocational track (*voie préparatoire*) increased from 6% to 15%. Pupils with lower socio-economic status and foreign nationality are the most likely to fall behind in all subjects and to be guided towards the lower tracks. Changing tracks is extremely rare (Klapproth et al., 2013). In 2017, the orientation process was reformed to give parents a say in the decision. Following this, 98.2% of orientation decisions were in line with the parents' wishes, whereas previously this had been the case with 84%. This may explain the trend shift in 2017/2018, when the proportions of pupils in the two higher tracks increased again and the proportion in the vocational track dropped from 15% to 12.2%. Monitoring is needed to determine whether pupils with lower socio-economic status are benefiting equally from this shift.

Pupils' performance is heavily influenced by their ability to cope with the trilingual system. The teaching language at primary level is Luxembourgish, while pupils learn to read and write in German. All subjects (except for French) are taught in German. While the main teaching language in technical secondary education remains German, in the higher tracks mathematics is taught in French, which is the language of the final exam. Several technical schools offer all courses in French. In general secondary education, the teaching language switches from German to French in grade 7 for mathematics and in grade 10 for other subjects. This system is challenging for all, but especially for the 59% of pupils who speak a language other than Luxembourgish at home. In the national competence tests, nearly half of all grade 3 pupils (45%) fail to show basic reading competence in German, the teaching language in primary education (Martin et al. 2012). Language skills have a major impact on pupils' performance in mathematics, too: when adjusting for pupils' level of reading comprehension in the test language and their socio-economic status, most differences in performance disappear (Martini and Ugen, 2018). Socio-economic status is the factor that has the biggest impact on school performance: more than half the pupils in the bottom quarter of the socio-economic scale perform below the basic level (*niveau socle*) in grade 3 and the proportion of those failing to achieve basic level (level 2, L2) by grade 9 drops much less than among their counterparts in the top quarter, irrespective of their mother tongue (Sonnleitner et al., 2018) (Figure 3).

Figure 3 Pupils' development in German reading skills – comparison of pupils of low socioeconomic status (Q1) with pupils of high socioeconomic status (Q4)¹⁰⁴



Source: Sonnleitner et al. (2018).

The quality assurance system has been strengthened. Like primary schools, secondary schools are now also obliged to adopt school development plans every 3 years. Since September 2016, they have been assisted in the design and implementation of the plans by the Pedagogical and Technological Research and Innovation Coordination Service (SCRIPT). The 15 regional inspectorate offices created by the law of May 2017 are responsible for the administrative management and pedagogical supervision of primary schools, monitoring implementation of the school development plans and organising support for pupils with special educational needs. This means that the heads of the offices act as directors to the primary schools. The chair of the school management committee is responsible for the school's operation, but does not have employers' rights over the other teachers. Secondary schools have their own heads within the school. In March 2018, a National Observatory on School Quality was created to gather and analyse evidence on the school system and the functioning of primary and secondary schools.

In 2017, secondary education was reformed in line with the needs of an increasingly diverse school population. The main objective of the new law on secondary education is to address learners' needs better by giving schools more autonomy to organise the curriculum, depending on which of the three 'profiles'¹⁰⁵ they opt for. The school development plans will need to reflect the needs of the school population and cover aspects such as guidance, study success, after-school activities, psycho-social assistance and the improvement of digital skills. The number of subjects covered for the upper secondary leaving certificate has been reduced to allow pupils to focus on those that match their further study plans. The OECD and the secondary school teachers' trade union have warned of the risk of reducing educational equity (SEW, 2017) and pupils' increasing segregation because of the fragmentation of school systems (OECD, 2018).

Schools are encouraged to embrace ICT and new technologies. Luxembourg is among the top performers in the EU's digital economy and society index (DESI). It ranks high on human capital, in particular the use of digital skills and the internet. Still, according to the ADEM employment agency, 70% of posts in the ICT, services and financial sectors remain vacant. In 2017/2018, ICT was introduced as a new subject in the classical secondary curriculum. The syllabus includes an introduction to programming, IT security, databases and technical IT.

¹⁰⁴ The chart concerns only pupils who regularly progressed in the national school system from grade 3 to 9, i.e. without repeating a year or switching to private education or a school abroad.

¹⁰⁵ The three possible profiles are:

- (i) 'future hubs', with an emphasis on ICT, science and new technologies;
- (ii) entrepreneurial schools; and
- (iii) schools specialising in sustainable development.

6. Modernising higher education

Luxembourg has set itself the target of raising the tertiary attainment rate among 30-34 year-olds to 66% by 2020. It already has one of the highest rates in the EU (56.2%), partly thanks to the high proportion of graduates in the migrant population (58.6%, as compared with 50.9% of native Luxembourgers). In 2017 Luxembourg had the second largest proportion of international graduates¹⁰⁶ in the EU at master's (43%) and doctoral level (167%). Study programmes are bilingual, trilingual (French, German, English) or entirely in English.

There is virtually full employment of young secondary and tertiary graduates in Luxembourg. In 2018, the employment rate for young (20-34 year-old) tertiary graduates was 94.0%, well above the EU average of 85.5%. The employment rate among those with upper secondary or post-secondary (non-tertiary) education was similarly high (95.4%, against an EU average of 79.5%). Tertiary graduates enjoy a higher wage premium than their counterparts elsewhere in the EU (OECD, 2017).

Luxembourg continues to raise financial support for students to meet the strong demand for highly skilled workers. Following a 2013 European Court of Justice ruling, children of parents who work in Luxembourg but live in a neighbouring country became eligible for state support for their studies. This led to a sharp rise in the number of students who received a grant in 2013/2014 - from just under 15 600 to more than 25 200 - and this growth has continued. The level of support per student has also increased sharply. Financial aid has three components: a basic part, a mobility part and a social part, with a view to making the system more equitable. All students are eligible, regardless of the country in which they study.

Funding for higher education and research has increased by 25% between 2014-2017 and 2018-2021. Luxembourg is spending EUR 1.436 billion on higher education and research in the current financing period (MESR, 2019). The 2018-2021 agreement provides for an overall budget of EUR 766.84 million for the University of Luxembourg and EUR 383 million for the three public research institutes. A further EUR 265.4 million has been earmarked for programmes financed from the national research funds. In higher education, a range of bachelor's and master's programmes are on offer, as well as doctoral studies, mainly at the University of Luxembourg. In addition, some secondary schools run short-cycle programmes leading to advanced technical diplomas. Expenditure on higher education includes public financial aid for students (see above).

New legislation strengthens the organisational and decision-making autonomy of the University of Luxembourg. Organisational autonomy was the only aspect in which the University scored low in 2017, while it ranked high in terms of financial, academic and staffing autonomy, according to the European University Association's autonomy tool¹⁰⁷. A new law (Government, 2018a) aims to increase its autonomy in terms of internal organisation and decision-making and to set clearer rules on its management structures and decision-making procedures. The rector is established as chief executive. The role of the university council has been extended to determining the orientations of study programmes, contributing to study regulations and proposing two members for the university governing board. The law also provides for student participation in decision-making and facilitates collaboration with other research institutes in Luxembourg.

An amendment of the Higher Education Act aims to improve the quality of foreign tertiary education providers. The amendment (Government, 2018b), addresses the organisation, relevance and quality assurance of programmes and introduces a reference to external and independent quality assurance agencies which have to be members of ENQA and registered at EQAR.

7. Modernising vocational education and training

Vocational education and training (VET) graduates enjoy excellent employment prospects. In 2017, the proportion of pupils enrolled in upper secondary VET programmes was 61.6%, against an EU average of 47.8%. The employment rate among recent VET graduates is 95.4%, well above the EU average of 79.5% and even above that for tertiary graduates. However, grade repetition remains a major challenge in technical secondary education (see Section 5).

¹⁰⁶ Inward degree mobility rates are computed as inward degree-mobile graduates as a percentage of graduates originating in the country.

¹⁰⁷ European University Association: <https://www.university-autonomy.eu/countries/luxembourg/>.

New legislation addresses certain framework conditions in VET. In June 2019, the 2008 VET Reform Act was amended to address a series of technical issues, including:

- extending the length of the training period to improve completion rates;
- introducing a form of training for people already in employment; and
- integrating the contracts for apprenticeships and work placements in the Labour Law in order to improve legal certainty.

Cross-border cooperation has been strengthened to ensure apprenticeship places. In March 2018, Luxembourg signed a bilateral agreement with the German *Land* of Rhineland-Palatinate that was modelled on the 2017 agreement with the Lorraine region in France. Both are based on a 2014 framework agreement aimed at boosting cross-border mobility in VET and thereby strengthening the labour market in the *Grande Région* (i.e. Luxembourg and the bordering regions of Belgium, France and Germany). In September 2018, a total of 150 VET students were involved in apprenticeship mobility across the *Grande Région*.

Box 2: The macro-reform of vocational education and training

European Social Fund project (July 2017 — December 2019)

Budget: EUR 860 200

Implementing body: *Service de coordination de l'innovation et de la recherche pédagogiques*

The project is aimed at creating a coherent and efficient system to analyse and revise VET programmes and to adapt some 120 curricula to the new legislative and regulatory framework. The revision should make it easier to switch between vocational programmes and educational levels ('*Kein Abschluss ohne Anschluss*' – 'no dead-end qualifications').

8. Developing adult learning

Luxembourg has a growing and mixed population, 47.5% of whom are foreign-born (STATEC, 2019a). Between 2009 and 2018, it saw the highest rate of population growth in the EU (+22%). Foreign-born employees are strongly represented at both ends of the employment spectrum, holding both low-qualified and highly qualified positions (OECD, 2017). On average, migrants tend to be highly educated: 58.6% of migrants aged 30-34 have a tertiary degree. As a result, migrants enjoy a significantly higher employment rate (70.8%) than the native-born population (61.2%).

Overall participation in the labour market and adult learning is high, but lower among low-skilled and older workers. Employment rates are higher than the EU average across all levels of education, including for low-skilled workers: in 2018, the proportion of low-qualified adults in employment stood at 60.8%, against an EU average of 56.8%. 18% of adults surveyed had had a learning experience in the previous four weeks, against an EU average of 11.1%. However, participation in adult learning is much less common among low-skilled workers (7.3%), increasing the risk of their skills becoming outdated and of them ending up in early retirement. The employment rate among older workers (55-64 years) remained particularly low (42.3%) in 2018, against a 59.3% EU average, making it especially important to improve their participation in lifelong learning. A July 2017 amendment to the Labour Law created incentives for companies to provide training for their employees and changed the state co-financing arrangements for this. In 2018, the public employment service and the chamber of commerce launched a joint programme to improve job-seekers' employability. The 'Skill you up' programme includes skills assessment, coaching, training and follow-up for those wishing to move to another occupation and/or sector.

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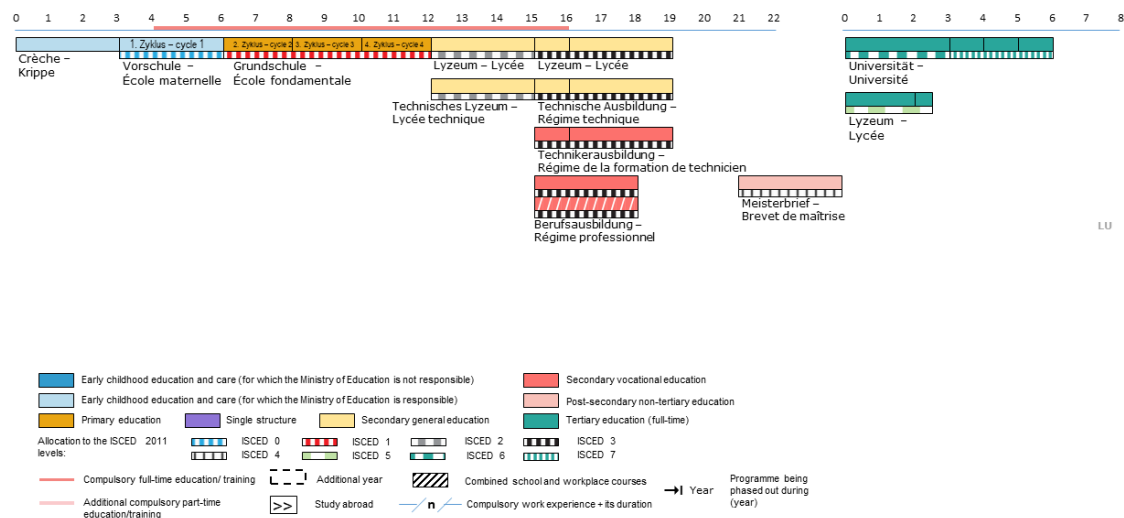
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Annex I: Key indicator sources

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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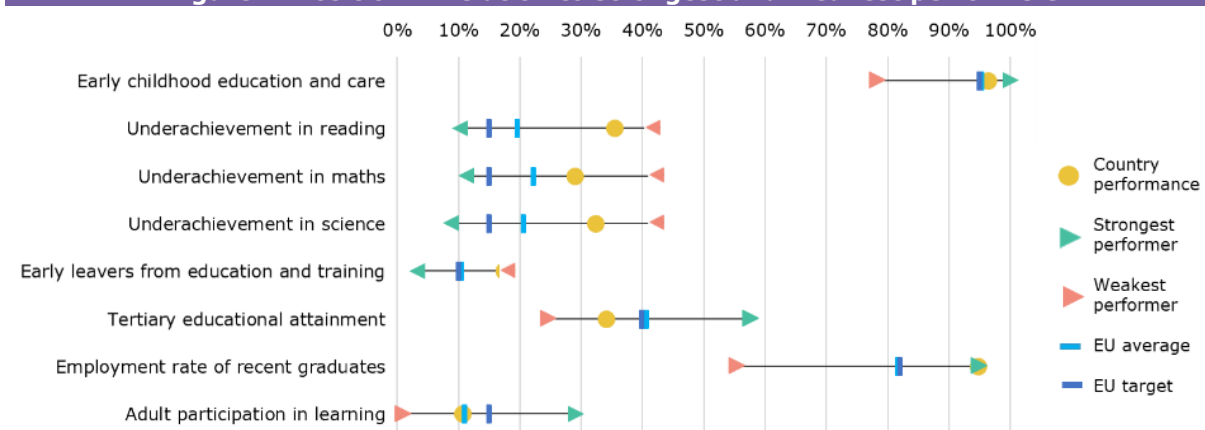
MALTA

1. Key indicators

			Malta		EU average	
			2009	2018	2009	2018
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)			25.7%	17.5%	14.2%	10.6%
Tertiary educational attainment (age 30-34)			21.9%	34.2%	32.3%	40.7%
Early childhood education and care (from age 4 to starting age of compulsory primary education)			94.6%	96.5% ¹⁷	90.8%	95.4% ^{17,d}
Proportion of 15 year-olds underachieving in:	Reading		36.3%	35.6% ¹⁵	19.5% ^{EU27}	19.7% ¹⁵
	Maths		33.7%	29.1% ¹⁵	22.3% ^{EU27}	22.2% ¹⁵
	Science		32.5%	32.5% ¹⁵	17.7% ^{EU27}	20.6% ¹⁵
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)		ISCED 3-8 (total)	92.9%	94.8%	78.3%	81.6%
Adult participation in learning (age 25-64)	ISCED 0-8 (total)		6.2%	10.8%	9.5%	11.1%
Learning mobility	Degree-mobile graduates (ISCED 5-8)		:	9.0% ¹⁷	:	3.6% ¹⁷
	Credit-mobile graduates (ISCED 5-8)		:	5.4% ¹⁷	:	8.0% ¹⁷
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP		5.4%	4.9% ¹⁷	5.2%	4.6% ¹⁷
	Expenditure on public and private institutions per student in € PPS	ISCED 0	€5 751 ^{12,p}	€5 813 ¹⁵	:	€6 111 ^{15,d}
		ISCED 1	€6 563 ^{12,p}	€5 853 ¹⁵	€5 812 ^{12,d}	€6 248 ^{15,d}
		ISCED 2	€9 600 ^{12,p}	€10 089 ¹⁵	€6 937 ^{12,d}	€7 243 ^{15,d}
		ISCED 3-4	€8 301 ^{12,p}	€7 316 ¹⁵	:	€7 730 ^{14,d}
		ISCED 5-8	€10 703 ^{12,p}	€14 913 ¹⁵	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	Native-born		26.0%	17.4%	13.1%	9.5%
	Foreign-born		:	19.1% ^u	26.1%	20.2%
Tertiary educational attainment (age 30-34)	Native-born		21.9%	29.0%	33.1%	41.3%
	Foreign-born		22.1% ^u	48.2%	27.7%	37.8%
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4		88.6%	91.1%	72.5%	76.8%
	ISCED 5-8		97.0%	96.7%	83.8%	85.5%

Sources: Eurostat; OECD (PISA); Learning mobility figures are calculated by the European Commission's Joint Research Centre on UOE data. Further information can be found in Annex I and in Volume 1 (ec.europa.eu/education/monitor). Notes: The EU's 2009 PISA averages do not include Cyprus; d = definition differs, p = provisional, u = low reliability, := not available, 12 = 2012, 14 = 2014, 15 = 2015, 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

- Work is underway to improve the quality of teaching and the attractiveness of the profession.
- Improving the quality of investment in education and enhancing 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.

3. A focus on teachers

Teachers do not have a very high status in Malta. Data from the 2018 OECD's Teaching and Learning International Survey (TALIS) shows that only 14.5% of lower secondary teachers believe that their profession is valued in society, compared to an EU average¹⁰⁸ of 17.7%. Teachers are quite often criticised in local media as failing to serve the changing needs of society while benefiting from favourable working conditions (Attard Tonna and Calleja, 2018). This perception has the potential to increase the challenge to recruit and retain good teachers and may further fuel gender imbalances. 99% of teachers in pre-primary education are women and their proportion remains very high at primary (86%) and secondary levels (64%). At tertiary level, the proportion of women falls to 36% (2017 data).

Although teachers' motivation is high at the beginning of their careers, this tends to decrease over time. According to TALIS 2018, 66% of teachers say that if they could decide again, they would still choose to become a teacher, compared with an EU average of 77.6%. Fewer teachers (63.7% v 76.4% at EU level) with more than 5 years of work experience report feeling this way than newly qualified teachers (73.0% v 83.7%). Teachers have opportunities to move into management and other educational roles (European Commission/EACEA/Eurydice, 2018). Those who have not less ten years teaching experience can take on assistant head of school or department head responsibilities – and after that they can apply to become head teachers¹⁰⁹. Class teachers can also become mentors and/or have pedagogical or methodological roles outside the classroom. Teachers' individual performance is formally assessed only at the end of their induction programme. Appraisals and feedback on teachers' performance could be used to recognise good teaching and thus positively impact on job satisfaction, while challenging teachers to address issues with their performance.

There have been measures to increase salaries, but challenges remain. Limited salary progression throughout the teaching career may make it more difficult to draw people into the profession and to ensure that they remain satisfied and sufficiently motivated. The starting statutory salary for teachers at lower general secondary level is around the EU average (PPS 24 494 vs 25 946) (European Commission/EACEA/Eurydice, 2018). However, salary progression is very limited after 10 years of service and the top salary, reached after an average of 19 years, is 26% lower than the EU average at secondary level. The sectoral agreement signed in 2017 includes an increase in class allowances for teachers, in line with their length of employment and the introduction of new allowances¹¹⁰.

An expected increase of the school-age population calls for an enhanced system to monitor and address teacher shortages. Even though the proportion of teachers aged over 50 was the second lowest in the EU at primary level (11.5% v 32.8% at EU level) and the lowest at secondary level (15.2% v 39.3% at EU level) in 2017, teacher shortages tend to be a recurrent

¹⁰⁸ 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.

¹⁰⁹ For further details on teacher career progression, see Ministry for Education and Employment, (2017). Agreement between the Government of Malta and the Malta Union of Teachers, Malta: Ministry for Education and Employment.

¹¹⁰ For further details, see European Commission, (2018). Education and Training Monitor – Volume 2 – Malta, Box 1: New collective agreement for the teaching sector.

problem. There was a significant teacher shortage in the 2017/2018 school year. In 2018/2019, the situation improved and schools opened with minimal shortages¹¹¹. Shortages happen for several reasons: teachers may find better paid jobs in private schools or outside their sector, or take non-teaching duties or leave due to family responsibilities. Teacher shortages are addressed by either offering temporary contracts to qualified teachers or by employing supply teachers¹¹². The resultant high turnover may have adverse effects on teacher collaboration and student outcomes (OECD, 2018). Improvements to monitoring manpower needs and increases to the attractiveness of the profession could be particularly important in future given that the school-age population is expected to grow over the next years, according to Eurostat.

Malta has taken steps to improve teacher education. Initial teacher education has been extended from bachelor's degree to master's level to provide higher teaching quality. The teaching qualification does not fully qualify graduates as teachers, as they need also 2 years of teaching experience. In 2018, the Institute of Education started offering initial teacher education in primary education and some areas of secondary education on a part-time basis to supply teachers, using a blended learning approach. This has been done to support supply teachers who want to improve their qualifications and have the possibility to improve their salary by becoming formally qualified teachers. These courses will also assist those who want to make a career change and obtain the necessary teaching qualification to become teachers and take on a leadership role.

Measures have been put in place to support a professional learning community. TALIS 2018 highlights that a high proportion of teachers (60.7% v 51.9% at EU level) consider that they do not receive sufficient incentives to participate in continuing professional development (CPD). In addition, around half of them report that they are unlikely to participate in CPD because of family responsibilities and schedule conflicts. The sectoral agreement signed by the government and the Malta Union of Teachers in 2017 tried to address these challenges. It widened the concept of CPD to include all types of learning opportunities (within schools, externally designed and based on self-development) and allowed teachers to receive a salary increase in 6 years rather than 8, if they complete 360 hours of CPD. Between October 2018 and February 2019, the Malta College of Arts, Science and Technology (MCAST – a provider of advanced vocational training) provided CPD sessions for teachers, which included workshops with a special focus on innovative teaching techniques and digital literacy (use of social media in classrooms, innovative teaching techniques, using technological tools in the classroom). The agreement requires teachers and school heads to draw up a school development plan to respond to the changing environment in schools and changes in school composition. The number of foreign-born students aged under 15 increased by 67% between 2014 and 2017, with an impact on teachers' working environments, (OECD, 2019). According to TALIS 2018, one in five (20.4%) of teachers report that they need a higher level of CPD in this area and this is above the EU average (13.4%). Measures are being implemented to provide CPD to improve teachers' level of preparedness.

4. Investing in education and training

Comparatively high levels of spending on education are not leading to better educational outcomes for all. In 2017, Malta's general government expenditure on education was at 4.9% of GDP (compared with 4.6% at EU level). As a proportion of total public expenditure, spending is among the highest in the EU (13.9% v 10.2% at EU level). Although positive results have been recorded such as the decline in the rate of early leavers from education and training and increases in tertiary education attainment, educational outcomes and attainment rates are generally lower in EU comparison (see section 5 and 6). This suggests some challenges in efficiency of spending. Spending per student across all education levels (ISCED 02-8) is also among the highest in the EU (PPS 8 261 2015) and particularly high in tertiary education (ISCED 5-8) (PPS 14 913 v 11 413 at EU level). Compensation of employees represents the main budget item (63.5%) and is close to the EU average (62.0%), while nearly 20% of expenditure in the education sector is spent on a variety of transactions, including payments to private schools and subsidies.

¹¹¹ In the scholastic year 2017/18, there was a shortage of about 70 teachers; and in the scholastic year 2018/19, there was a shortage of about 3 teachers. Data provided by the Minister of Education and Employment in July 2019.

¹¹² In May 2019 supply teachers represented 6% of total teachers, according to the data provided by the Ministry of Education and Employment.

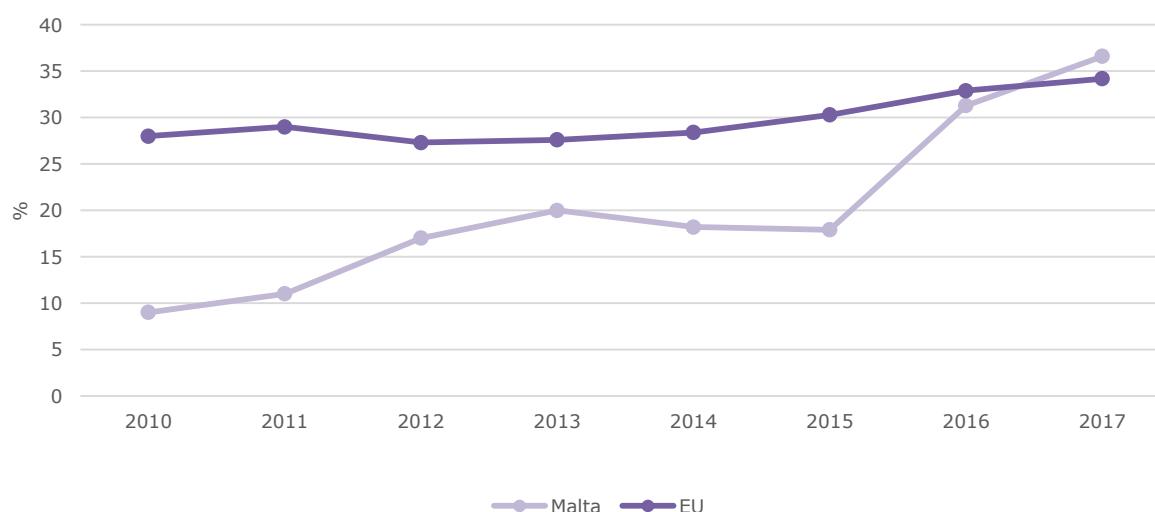
The expected increase in student numbers is a challenge for school infrastructure. Some new schools have been opened or existing schools extended¹¹³ and pre-fabricated classrooms have been used to make up for a lack of space in the area of St. Paul's Bay, which has seen increasing numbers of migrants arrive. However, the pressure on school infrastructure is expected to persist over the next years due to demographic trends. The primary student population increased by 6.4% between 2013 and 2016 and the student population (5-16 year-olds) is expected to increase by 12.7% between 2019 and 2025, according to Eurostat baseline projections.

5. Modernising early childhood and school education

Participation in early childhood education continues to increase for children under three.

The proportion of children below 3 in formal childcare (full or part-time) doubled in 2 years (from 17.9% in 2015 to 36.6% in 2017) and is now above the EU average of 34.2% (Figure 2). The Free Childcare Scheme was launched in 2014 to increase participation in childcare by children aged between 3 months and 3 years of age, with the objective of increasing the number of women working. The scheme offers free childcare services to all parents who are working or studying full or part-time, provided either directly through government services or via registered childcare centres. Although it has decreased by 2.1 pps since 2010, participation in early childhood education and care for 4 year-olds in 2017 is very high (96.5% v EU average 95.4%).

Figure 2 Participation in formal childcare of children aged under 3, 2010-2017



Source: Eurostat, EUSILC, 2017

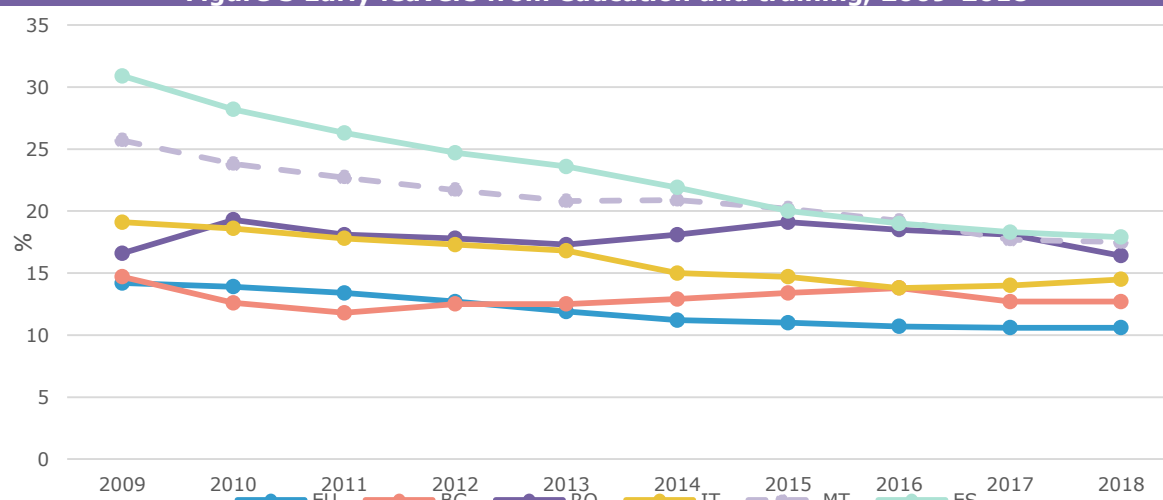
Work is being done to improve quality in early childhood education and care. From 2015/2016, the required qualification level for staff working with 3 and 5 year-olds was raised to bachelor's degree with 4 years of study, or 2 years of study for holders of the MCAST Higher Diploma in Advanced Studies in Early Years. However, this requirement is still being phased in and the target of all groups of children having at least one staff member with a tertiary qualification has not yet been reached. The big increase in participation in childcare for children aged under 3 in recent years has required a new national policy for early childhood education and care and a revision of national standards for the age group 0-3. A public consultation is expected to be launched by the end of the year. High quality early childhood education and care may help prevent later early school leaving.

Reducing early school leaving remains a priority. Although it has declined since 2010, the proportion of early leavers from education and training aged 18-24 is still markedly above the EU average (17.5% v 10.6% in 2018) and the national Europe 2020 target of 10% (Figure 3). The decline may be fuelled by a reduction in secondary school absenteeism (from 30.0% in 2012/2013

¹¹³ A new primary school in Qawra, announced in the 2015 budget, will open in 2019/20. In 2018/19 a new primary school in Marsascala was opened and the Pembroke Primary school was extended in 2018. The planning process for two new primary schools and the extension and modernisation of another two primary schools has started (Information provided by the Ministry in July 2019).

to 21.6% in 2016/2017¹¹⁴) and improvements in vocational education (see section 7). Despite their low education levels, the employment rate of early school leavers was the highest in the EU in 2017 (71.7% v an EU average of 44.8%), reflecting easy access to employment in industries such as tourism. Since low-qualified people are less likely to participate in adult learning (see section 9), early school leavers nevertheless face a higher risk of future unemployment and social exclusion.

Figure 3 Early leavers from education and training, 2009-2018



Source: Eurostat, LFS.

A new lower secondary school system aims to tackle drop-out rates, focusing on improving employability. As of September 2019, through the 'MyJourney' reform¹¹⁵, secondary school students are allowed to choose between general, vocational or applied subjects, in addition to the core curriculum. The aim is to respond to different educational needs and give parity of esteem to less academic paths. Following compulsory education, students may opt to continue their studies at the University of Malta, MCAST and Institute of Tourism Studies or another higher education institution of their choice. While welcome, the possibility of choosing a less academic path at the age of 12 may lead to later social exclusion and limited employment opportunities. Students may leave compulsory education not being well equipped with fundamental competences that could allow later reskilling and upskilling. Measures are being taken to establish partnerships with post-secondary and vocational institutions and industry to provide quality education and training to all students. Teachers have been provided with training and professional support to teach the new nine applied subjects. The major challenge that government has faced is to ensure there are enough qualified teachers. The Malta Union of Teachers has raised concerns about this and the insufficient provision of teacher training and has warned about the possibility that students at risk of dropping out with low skills may end up having unqualified teachers (Times of Malta, 2019).

Measures are being implemented to improve student outcomes¹¹⁶. Implementation of the learning outcomes framework started in 2018/2019 with the development of new syllabi. Gradual implementation will continue until 2022/2023 when these new learning programmes will be available throughout the compulsory education system. The curriculum reform is accompanied by the introduction of continuous assessment instead of half-yearly examinations in both primary and secondary schools. While these reforms are a further step towards a higher quality of education, their effective implementation may mean teachers need new skills in assessment and more guidance on how to carry out this assessment. Teachers are using the 40 hours of paid CPD to update their skills. In addition, primary students with low literacy skills are being given additional support by support staff who take them out of class during school hours. An evaluation of this new approach has not been carried out yet.

¹¹⁴ Data provided by the Minister of Education and Employment in March 2019.

¹¹⁵ This project is co-financed by the European Social Fund. For further details, see <https://www.myjourney.edu.mt/> and <http://exploremoreproject.eu/en/option-form-en.pdf>

¹¹⁶ For further details on PISA 2015 results, please see European Commission (2017), Education and Training Monitor – Volume 2 – Malta.

Box 1: Towards a more inclusive education

Student performance is strongly influenced by socio-economic status, the type of school - with pupils from 'private schools performing best, followed by church schools and then state schools - and by disability status. The Council of the European Union addressed a country-specific recommendation to Malta in 2019, calling on the country to 'focus investment-related economic policy on [...] inclusive education and training' (Council of the European Union, 2019).

A policy on inclusive education in schools¹¹⁷ and a national inclusive education framework were published at the beginning of April 2019. A public consultation has recently been concluded. A strategic plan has been drawn up to guide schools on implementing the inclusion policy and framework in 2019/2020. The aim is to guide teachers, school heads, and all other stakeholders in implementing equitable opportunities and inclusive practices in public schools. Training sessions have already been delivered to educators and senior management teams on how to do so. This may help put in place a less fragmented approach to tackling social exclusion and early school leaving.

The policy adopts a wide definition of inclusion which covers learners: with special needs; with different sexual orientations; from ethnic minorities and different religions; and high ability learners.

Schools are encouraged to change existing pedagogical approaches and redesign practices, where needed, to ensure that all students have access to quality education. The framework provides school communities with tools to identify areas in need of improvement and to monitor progress.

6. Modernising higher education

The increase in tertiary education student numbers is accelerating. From 2010 to 2017 the number of students in higher education increased by 33.1%. This is due to a combination of demographic factors and measures to ease access introduced in this period. This has contributed to a rise in the proportion of people aged 30-34 with tertiary-level qualifications, which has increased by 12.1 pps since 2010. It remains, nevertheless, below the EU average (34.2% v EU 40.7%) despite reaching the national ET2020 target of 33%. This positive trend may help to address labour market challenges: employment growth is expected to remain strong up to 2030 and the proportion of job openings requiring high-level qualifications is expected to be 36% by 2030, 7 pps below the EU average (Cedefop, 2019).

Skills shortages and mismatches remain a challenge. Despite the highest employment rate in the EU of recent tertiary graduates (96.7% v EU 85.5%), the skills of tertiary education graduates do not sufficiently match the needs of the labour market. When asked to explain the causes of hard-to-fill vacancies, employers indicated that a small number of applicants with the required skills, in particular transversal skills, was the most common cause. This may explain the high reliance on foreigners to fill skills shortages. Only a small proportion of the employers surveyed had been involved in formal cooperation programmes with education providers (Jobsplus, 2017). Improving cooperation between employers, stakeholders and higher education institutions could help ensure that students are better equipped with relevant skills.

A more coordinated and effective approach is needed to map and anticipate skills needs. In 2017, the Maltese government collaborated with the Slovak Academy of Sciences to develop a mid-term skills and occupational forecasting model for Malta. The model is still being set up. In 2018, Malta joined the pilot of the first European graduate tracking survey to collect data on transition to the labour market and monitor the labour market relevance of tertiary education. Initial results will be published by the end of 2019. The National Skills Council announced in 2018 that it was drafting a national skills strategy. The final text will be aligned with the Digital and Artificial Skills Strategy and will identify individual transversal skills to be integrated into education and training. It is expected to be published by the end of 2019.

¹¹⁷ 'A policy on inclusive education in schools: Route to quality inclusion'.

7. Modernising vocational education and training

Malta continued to implement the 2018 Work-based Learning and Apprenticeship Act.

The numbers enrolled in upper secondary vocational education and training (VET) decreased from 28.8% in 2016 to 27.1% in 2017. The MCAST worked with local industry to update its programmes in a large number of sectors. Partnership agreements with companies will provide for work-based learning opportunities in three different forms: apprenticeships, work placements, and internships. Courses are offered at level 3, 4 and 6 of the Maltese Qualification Framework (MQF).

In 2018 MCAST launched an internal audit to review all programmes delivered and assessed by its institutions.

The audit will review the educational and operational processes in line with the national quality assurance framework and the way these impact on training. Industry, MCAST staff and students are being consulted to ensure high quality of programmes.

Box 2: Improving attractiveness of vocational education and training

The European Structural Fund project '*Achieving vocational excellence through enhanced work-based learning*' aims to build on MCAST's work-based learning with the aim of making VET more attractive to students, while providing a more competent workforce that can meet current and future industrial requirements.

The project will involve developing and delivering a mentoring training programme for MCAST lecturers and staff. Training and information sessions will also be organised for industry sponsors. MCAST will map the number of apprenticeships per area and the learning outcomes which can be offered by each participating employer. This monitoring will be achieved through the development of a comprehensive competency framework and use of an analysis tool.

It is estimated that around 600 MCAST students who follow an apprenticeship programme will benefit from the project. Implementation began in 2019 and is expected to be completed by 2022.

8. Developing adult learning

In Malta, the proportion of low-qualified adults is still high but there is a gradual improvement.

The overall proportion of adults aged 25 to 64 who have low qualifications was down from 48.9% in 2017 to 46.7% in 2018, and their employment rate increased over that year from 58.6% to 60.9%. The case for further upskilling and reskilling is strong, since the 125 800 low-qualified adults largely exceed the 19 100 thousand elementary jobs available. There was a slight increase in adult learning participation, which rose from 10.6% in 2017 to 10.8% in 2018, still 4 pps below the EU 15% benchmark, but close to the EU average of 11.1%. While participation for people with tertiary qualifications has increased by 6.2 pps and is now above the EU average (22.6% v EU 19.0% in 2018), for low-qualified adults who are more in need of upskilling and reskilling, this has only increased by 0.7 pps (from 3.4% to 4.1%) since 2010.

Malta continued its work to implement the Council Recommendation on upskilling pathways.

The 'Schools as Community Learning Spaces' programme promotes an informal community learning space which allows adults (including parents and guardians) to gain useful skills. '*Check in, Take off*', an Erasmus+ policy experimentation project with Ireland and Norway, will develop a skills checker tool that enables individuals to carry out an initial assessment of their literacy, numeracy and digital skills and provide options for flexible learning opportunities as well as a pathway to recognise these skills.

Malta is making efforts to improve the quality of adult learning.

In 2016, the University of Malta created the Department of Arts, Open Communities and Adult Education. It has taken responsibility for the Higher Diploma in the Teaching of Adults - a two-year evening diploma course in adult education, training and development, which is now a prerequisite for people engaged by the Ministry in teaching adults (currently 150) as part of its broad adult education programme. In 2018, the department launched the Recognition of Prior Learning programme for holders of qualifications and experience in adult education and training. This year-long programme has been developed for those holding qualifications in adult education or an equivalent who wish to pursue the master's degree course in adult education, which will open in February 2020.

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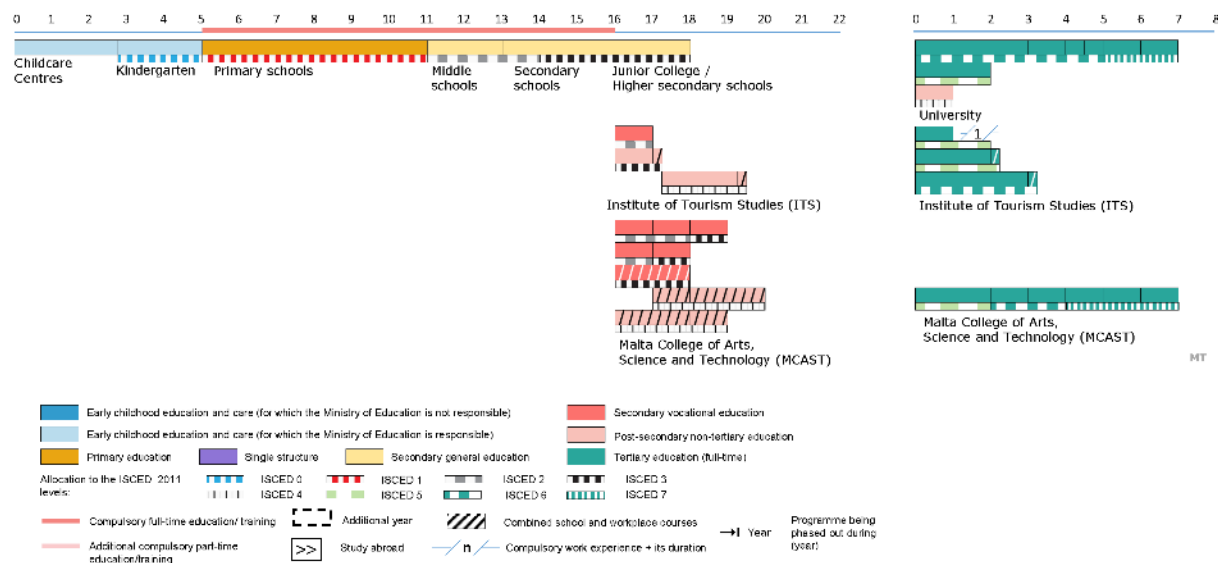
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Annex I: Key indicator sources

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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