

Education and Training Monitor 2019

Germany



Getting in touch with the EU

Europe Direct is a service that answers your questions about the European Union.

You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696 or
- by email via: https://europa.eu/european-union/contact_en

Luxembourg: Publications Office of the European Union, 2019

© European Union, 2019

Reuse is authorised provided the source is acknowledged. The reuse policy of European Commission documents is regulated by Decision 2011/833/EU (OJ L 330, 14.12.2011, p. 39).

For any use or reproduction of photos or other material that is not under the EU copyright, permission must be sought directly from the copyright holders.

PRINT	ISBN 978-92-76-08660-4	ISSN 2466-9989	doi: 10.2766/174974	NC-AN-19-003-EN-C
PDF	ISBN 978-92-76-08661-1	ISSN 2466-9997	doi: 10.2766/03449	NC-AN-19-003-EN-N

Cover image: composition with images © istock.com

Education and Training Monitor 2019

Germany

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

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

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

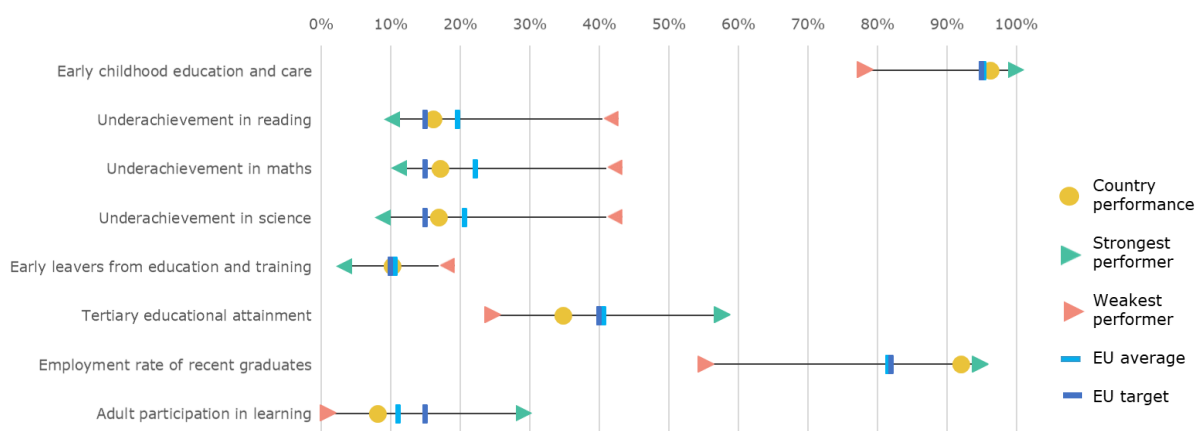
*The manuscript was completed on 26 August 2019.
Additional contextual data can be found online (ec.europa.eu/education/monitor)*

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}
		ISCED 5-8	€12 956 ¹²	€12 680 ¹⁶	€10 549 ^{12,d}	€11 413 ^{15,d}
Early leavers from education and training (age 18-24)	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).

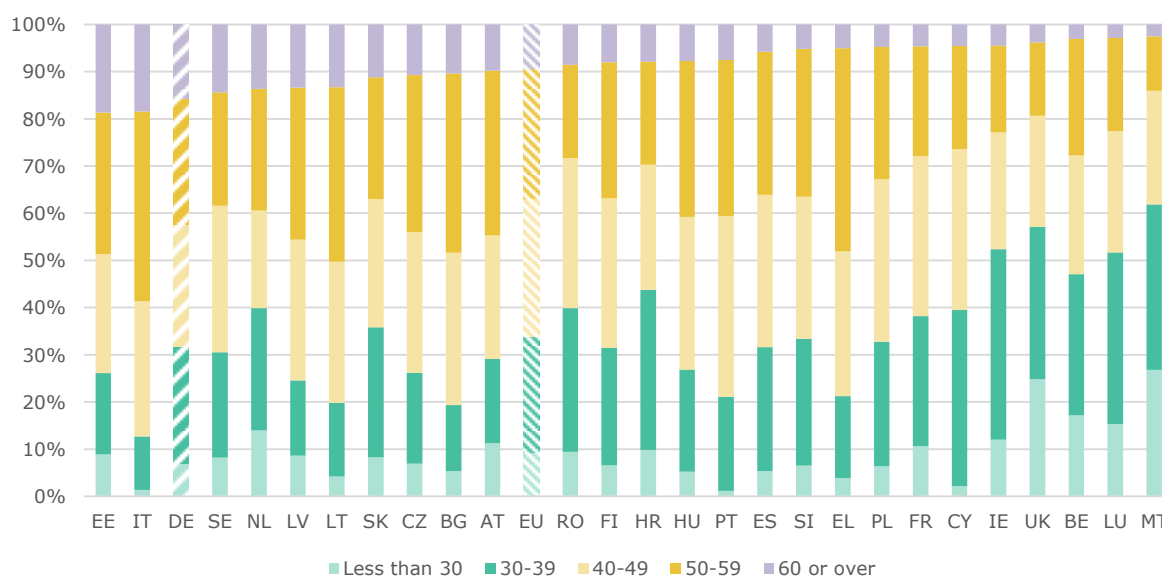
2. Highlights

- 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).

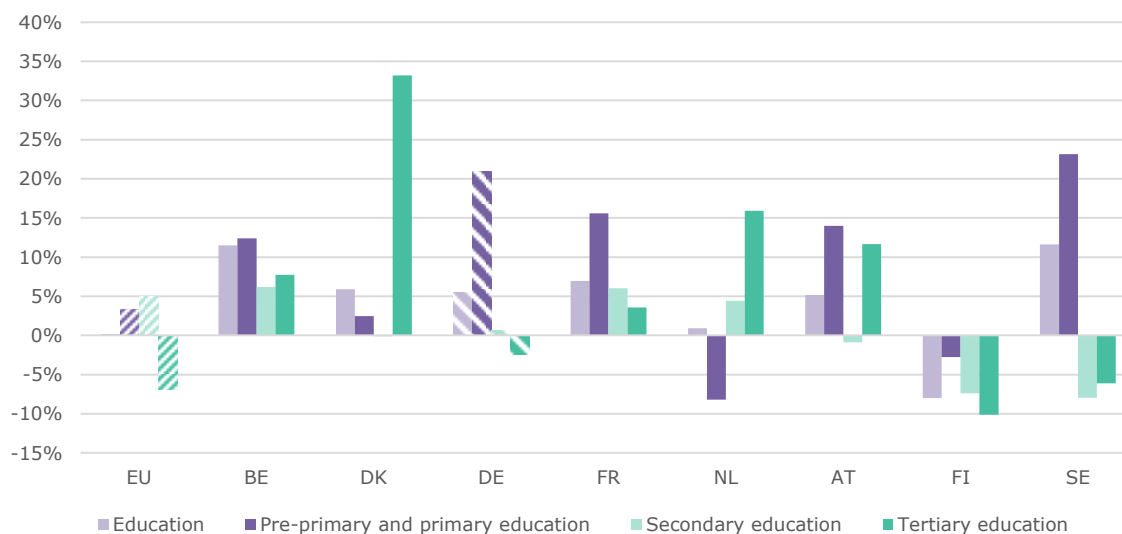
Teachers are predominantly women, as in other EU countries. In 2017, 96% of early childhood education and care (ECEC) staff were women. In primary education, 87% were women and for secondary education, 63%. In tertiary education, 39% of staff in 2017 were women, 3 pps below the EU average. A 2015 study 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 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.

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

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 Weinhart, 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).

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.

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.

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.

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

⁵ Bundesministerium für Bildung und Forschung.

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.

9. References

Anger, Ch., Plünnecke, A., Schüler, R. (2018), *INSM – Bildungsmonitor 2018 – Teilhabe, Wohlstand und Digitalisierung*. https://www.insm-bildungsmonitor.de/pdf/Forschungsbericht_BM_Langfassung.pdf

Autorengruppe Bildungsberichterstattung (2018), *Bildung in Deutschland 2018*. <https://www.bildungsbericht.de/de/bildungsberichte-seit-2006/bildungsbericht-2018/pdf-bildungsbericht-2018/bildungsbericht-2018.pdf>

Bundesinstitut für Berufsbildung – BIBB (Hrsg.) (2019): *Datenreport zum Berufsbildungsbericht 2019*. https://www.bibb.de/dokumente/pdf/Datenreport_2019_Vorabversion_final.pdf

Cedefop (forthcoming). *Developments in vocational education and training policy in 2015-19: Germany*. Cedefop monitoring and analysis of VET policies.

Council of the European Union (2012), *Council Recommendation on the validation of non-formal and informal learning*, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012.1222%2801%29>

Council of the European Union (2019), *Council Recommendation on the 2019 National Reform Programme of Germany and delivering a Council opinion on the 2018 Stability Programme of Germany*. <http://data.consilium.europa.eu/doc/document/ST-10158-2019-INIT/en/pdf>

Deutsche Bank Research (2019), EU-Monitor, *Digitale Ökonomie und Struktureller Wandel, Digitaler Strukturwandel und der Sozialstaat im 21. Jahrhundert*. https://www.dbresearch.de/PROD/RPS_DE-PROD/PROD000000000486872/Digitaler_Strukturwandel_und_der_Sozialstaat_im_21.pdf

European Commission (2019). *Country Report Germany 2019*. https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-germany_en.pdf

European Commission/EACEA/Eurydice (2018), *Teachers' and School Heads' Salaries and Allowances in Europe – 2016/17*.

Federal Ministry for Economic Affairs and Energy (BMWi) (2019), *National Reform Programme 2019 Germany*. <https://ec.europa.eu/info/sites/info/files/2019-european-semester-national-reform-programme-germany-de.pdf>

Federal Ministry of Education and Research (BMBF) (2019), *VET Report 2019*. <https://www.bmbf.de/de/positive-entwicklung-auf-dem-ausbildungsmarkt-8361.html>

Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ) (2015): *Männliche Fachkräfte in Kindertagesstätten*. <https://www.bmfsfj.de/blob/94268/a974404ff4a9f51a20136bfc8a1e2047/maennliche-fachkraefte-kitas-data.pdf>

Forsa (2018), *Die Schule aus Sicht der Schulleiterinnen und Schulleiter – Berufszufriedenheit von Schulleitungen*. 27 February 2018. https://www.vbe.de/fileadmin/user_upload/VBE/Service/Meinungsumfragen/2018-03-02_forsa-Bericht_Schulleitungen_Bund.pdf

Hippach-Schneider, U.; Huismann, A. (2019), *Vocational education and training in Europe: Germany*. Cedefop ReferNet VET in Europe reports 2018. http://libserver.cedefop.europa.eu/vetelib/2018/ReferNet_Germany_VET_in_Europe_2018.pdf

Horneber, S., Weinhardt, F. (2018), *GymnasiastInnen aus Elternhäusern mit niedrigem Bildungsniveau verlieren im Laufe der Schulzeit deutlich an Boden*, in: DIW Wochenbericht, 85. Jg., Nr. 23, S. 477-483. https://www.diw.de/documents/publikationen/73/diw_01.c.591249.de/18-23-1.pdf

Klemm, K., Zorn, D. (2018), *Lehrkräfte dringend gesucht. Bedarf und Angebot für die Primarstufe*. Bertelsmann Stiftung, Gütersloh.

Kultusministerkonferenz (2018), *Statistische Veröffentlichungen, Dokumentation Nr. 2016 – Oktober 2018*. https://www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Dok_216_Bericht_LEB_LEA_2018.pdf

Ministerium für Wissenschaft, Forschung und Kunst Baden Württemberg. <https://mwk.baden-wuerttemberg.de/de/hochschulen-studium/lehrerbildung/berufsziel-lehrerin-und-lehrer/>

Moses Mendelssohn Institut (MMI) (2018), *Selbst der neue BAföG-Höchstssatz reicht in den beliebten Hochschulorten den Studierenden nicht zum Leben*. 13 November 2018. https://moses-mendelssohn-institut.de/presse/PM_MMI_Lebenshaltungskosten.pdf

NRW (2018) Landesportal. *NRW startet Lehrerwerbekampagne*. <https://www.land.nrw/de/pressemitteilung/ministerin-gebauer-ein-job-mit-pultstatus-lehrerin-oder-lehrer-werden-nrw-lohnt>

OECD, (2013), *Teachers for the 21st Century, Using evaluation to improve teaching*, OECD Publishing, Paris. www.oecd.org/site/eduistp13/TS2013%20Background%20Report.pdf

⁶ Education and Training Monitor 2018; *European Council Recommendation on Upskilling Pathways* (2016) https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOC_2016_484_R_0001.

OECD, (2017), *Starting Strong V: Transitions from Early Childhood Education and Care to Primary Education*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264276253-en>

OECD, (2018a). *Education at a Glance 2018*, OECD Publishing, Paris. <http://www.oecd.org/education/education-at-a-glance/>

OECD, (2018b). *Effective Teacher Policies: Insights from PISA*, PISA, OECD Publishing, Paris <http://www.oecd.org/education/effective-teacher-policies-9789264301603-en.htm>

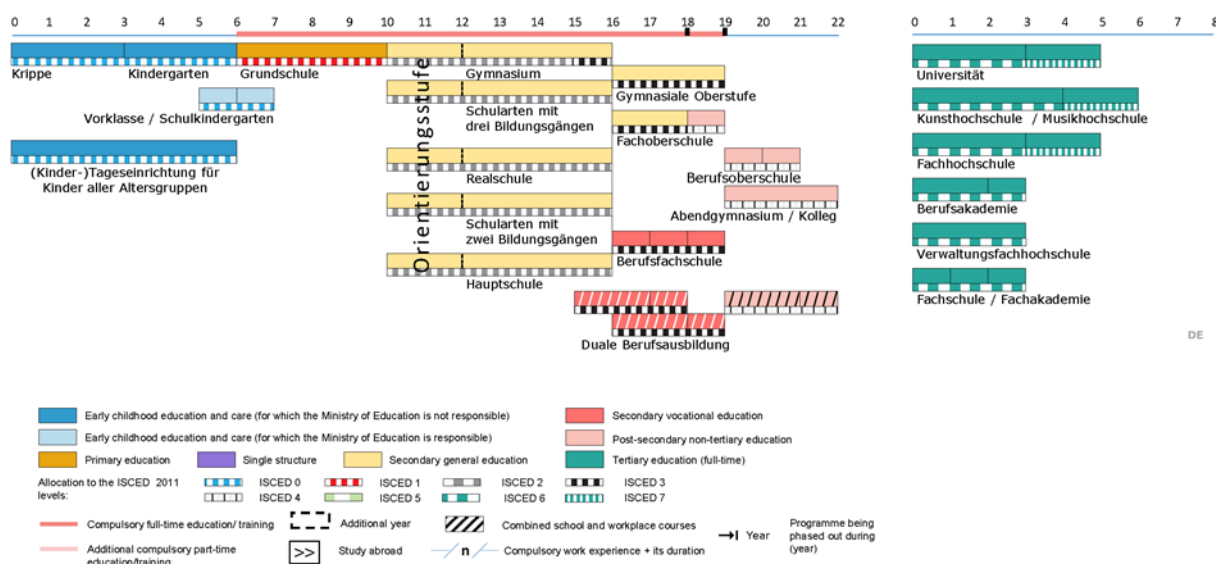
Rauschenbach, T., Schilling, M. & Meiner-Teubner, C. (2017). *Plätze. Personal. Finanzen — der KitaAusbau geht weiter. Zukunftsszenarien zur Kindertagesund Grundschulbetreuung in Deutschland*. Version 22017. Dortmund: Eigenverlag Forschungsverbund DJI/TU Dortmund an der Fakultät 12 der TUDortmund. https://www.dji.de/fileadmin/user_upload/bibs2017/rauschenbach_schilling_plaetze_personal_finanzen.pdf

Schulleitungsmonitor (2018). *Wie erfolgreich fühlen sich Schulleitungen und welche Unterstützungsbedürfnisse haben sie?* Zusammenfassung zentraler Ergebnisse, Oktober 2018. https://wuebbenstiftung.de/fileadmin/media/publikationen/pdf/Wuebben_Stiftung_Schulleitungsmonitor_Zusammenfassung_2018.pdf

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:
Klaus KOERNER
klaus.koerner@ec.europa.eu
or
EAC-UNITE-A2@ec.europa.eu

Executive summary

Highlights of the cross-national analysis

Highlights of the country analysis



Highlights of the cross-national analysis

Among all factors in the school environment, teachers are considered to have the greatest impact on students' learning outcomes. At the same time, more than 60%⁷ of public expenditure in education in the EU is spent on teachers. Any policy effort seeking to improve educational outcomes – or the efficiency of education and training – is bound to take a close look at the role of teachers and look for ways to help teachers excel in their demanding profession. New evidence from the OECD TALIS survey sheds more light on teachers. The recent survey data inform the 2019 Education and Training Monitor, which contains a dedicated analysis of school teachers in the EU. Being a unique source of information on teachers' motivations, lifelong learning and careers, the new evidence from TALIS 2018 can help policy-makers harnessing the full potential of teachers by preventing and addressing challenges.

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

At the core of learning: the teachers

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

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

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

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

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

⁷ DG EAC calculation on Eurostat's general government finance statistics, reference year 2017 ([gov_10a_exp](#)).

needs hinders the quality of instruction at their school. Principals also point to shortages of teachers who have competences in teaching in a multicultural or multilingual setting (the largest shortages are in France, Italy and Portugal); and competences in teaching students from socio-economically disadvantaged homes (largest shortages in France, Italy, and Portugal). This second type of shortage is driven by change (technology; diversity in classrooms) and points to a need to improve training (initial and continued).

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

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

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

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

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

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

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

target of less than 15% by 2020⁸ remains a challenge, particularly for pupils from disadvantaged socio-economic backgrounds. Failing to achieve basic mathematics, reading or science tasks at the age of 15 impacts on individuals' chances to continue studying, find and maintain employment later in life, cope with fast-paced technological change, and develop as citizens. Between 2012 and 2015, the EU has actually moved further away from meeting this target. Approximately one fifth of pupils in the EU cannot complete basic reading tasks, and the share is slightly higher for science and maths (2015 data). Despite less favourable or sometimes adverse background conditions, around a quarter of socio-economically disadvantaged pupils born in another country are considered academically resilient. Individual factors associated with higher resilience include high academic expectations, and not repeating grades; while disengagement from school (for example skipping classes, and abusing substances) has a negative association with resilience. At school level, the use of school evaluations, connecting the students' test results to teachers' performance, adequate provision of study rooms and being surrounded by pupils with higher socio-economic status are all factors correlating positively with resilience.

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

Developing competences for future life and employment

Research has long established the positive outcomes of being able to study abroad. Transnational learning mobility is associated with future mobility, higher earnings, and lower risk of unemployment. 'Making learning mobility a reality for all' is one of the objectives of the European Education Area⁹. In 2017, 11.6% of higher education graduates 'were mobile', meaning that they studied partially or entirely abroad. About 8% of them were abroad for short-term periods, while 3.6% graduated in another country. The Erasmus+ programme supported about half of the short-term study periods spent abroad by EU graduates. Overall, Luxembourg, Cyprus, the Netherlands, and Finland (in descending order) have high shares of mobile graduates. As to inward mobility, capturing the volume of students coming into a country for a period of study, it can be read as a measure of the attractiveness of the education system. On this indicator the United Kingdom leads the way – both in percentage of inward graduates and in absolute numbers.

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

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

⁸ Data for this benchmark come from the OECD PISA survey. Students scoring below level 2 are considered underachievers.

⁹ In November 2017, EU leaders met in Gothenburg to discuss the social dimension of Europe, including education and culture. As part of the debate on the Future of Europe, the Commission set out its vision and concrete steps to create a European Education Area by 2025. One of the main objective of the European Area of Education is 'making mobility a reality for all', by building on the positive experiences of the Erasmus+ programme and the European Solidarity Corps and expanding participation in them, as well as by creating an EU Student Card to offer a new user-friendly way to store information on a person's academic records. Other measures to boost mobility under the European Education Area include initiating new processes to ensure the mutual recognition of diplomas; improving language learning; creating a network of European universities; and supporting teachers and their mobility.

building for digital assessment needs to be implemented for learners, teachers, schools and education systems.

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

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

Public investment in education

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

Highlights of the country analysis

Austria

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

Belgium

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

Bulgaria

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

Croatia

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

Cyprus

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

Czechia

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

Denmark

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

Estonia

Estonia is developing an education strategy for 2021-2035, aiming to bring gradual changes to the system to respond to changes in the labour market and society. Due to demographic trends and

the limited responsiveness of the education and training system to labour market needs, aligning skills supply and labour demand remains a challenge. The ageing of the teaching population coupled with the low attractiveness of the teaching profession are a long-term challenge for the functioning of the education system. Participation in adult learning has reached a record high but the need for upskilling and reskilling remains high.

Finland

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

France

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

Germany

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

Greece

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

Hungary

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

Ireland

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

Italy

Italy invests well below the EU average in education, particularly in higher education. The share of teachers satisfied with their jobs is among the highest in the EU, but only a small share believe that theirs is a valued profession. Compulsory work-based learning in vocational education and training could help provide more structured training for apprentices and ease the transition from education to work. The level of tertiary educational attainment is low, and the transition from education to work remains difficult, even for highly qualified people.

Latvia

Latvia has already met and exceeded its Europe 2020 education targets. Latvia should achieve further improvements in learning outcomes through the new competence-based curriculum, a stronger individual approach to students at risk and support for inclusion of students with special educational needs. Enrolment in vocational education and training (VET) is increasing and the employment rate of VET graduates is improving, although both remain below the EU average. In higher education, a gradual increase in investment and incremental changes in quality assurance are welcome, but the sector remains fragmented and international competitiveness low.

Lithuania

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

Luxembourg

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

Malta

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

Netherlands

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

Poland

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

Portugal

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

Romania

Concrete ideas have been presented for major reform of the education and training system. Clear steps need to be taken for the implementation of the reform. Public spending on education is low in EU comparison, while the sector's investment needs are high. Any major reform is likely to require additional funding linked to stronger equity and efficiency mechanisms. Better support for teachers – in particular by redesigning initial teacher education and strengthening continuing professional

development – can help improve quality and equity. Efforts were made to expand dual education. Participation in adult learning remains low despite the high need for upskilling and reskilling.

Slovakia

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

Slovenia

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

Spain

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

Sweden

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

United Kingdom

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

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications at: <https://publications.europa.eu/en/publications>.

Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

