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Education and Training **MONITOR 2018** Bulgaria



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EUROPEAN COMMISSION

Education and Training Monitor 2018

Bulgaria

Volume 2 of the Education and Training Monitor 2018 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, with a focus on developments since mid-2017. 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 looks at investment in education and training. Section 4 focuses on citizenship education. Section 5 deals with policies to modernise 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 manuscript was completed on 1 September 2018.

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

1. Key indicators

		Bulgaria		EU average		
		2014	2017	2014	2017	
Education and training 2020 benchmarks						
Early leavers from education and training (age 18-24)		12.9%	12.7%	11.2%	10.6%	
Tertiary educational attainment (age 30-34)		30.9%	32.8%	37.9%	39.9%	
Early childhood education and care (from age 4 to starting age of compulsory primary education)		89.3% ¹³	86.5% ¹⁶	94.2% ¹³	95.3% ¹⁶	
Proportion of 15 year-olds underachieving in:	Reading	39.4% ¹²	41.5% ¹⁵	17.8% ¹²	19.7% ¹⁵	
	Maths	43.8% ¹²	42.1% ¹⁵	22.1% ¹²	22.2% ¹⁵	
	Science	36.9% ¹²	37.9% ¹⁵	16.6% ¹²	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)	65.4%	77.7%	76.0%	80.2%	
Adult participation in learning (age 25-64)	ISCED 0-8 (total)	2.1%	2.3%	10.8%	10.9%	
Learning mobility	Degree mobile graduates (ISCED 5-8)	:	7.4% ¹⁶	:	3.1% ¹⁶	
	Credit mobile graduates (ISCED 5-8)	:	1.5% ¹⁶	:	7.6% ¹⁶	
Other contextual indicators						
Education investment	Public expenditure on education as a percentage of GDP	4.1%	3.4% ¹⁶	4.9%	4.7% ¹⁶	
	Expenditure on public and private institutions per student in € PPS	ISCED 1-2	€2 379	€2 388 ¹⁵	€6 494 ^d	: ¹⁵
		ISCED 3-4	€2 477	€2 483 ¹⁵	€7 741 ^d	: ¹⁵
		ISCED 5-8	€4 814	€5 050 ¹⁵	€11 187 ^d	: ¹⁵
Early leavers from education and training (age 18-24)	Native-born	12.9%	12.8%	10.4%	9.6%	
	Foreign-born	:	:	20.2%	19.4%	
Tertiary educational attainment (age 30-34)	Native-born	30.9%	32.6%	38.6%	40.6%	
	Foreign-born	:	:	34.3%	36.3%	
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	52.6%	61.0%	70.7%	74.1%	
	ISCED 5-8	74.5%	86.5%	80.5%	84.9%	

Sources: Eurostat (see section 10 for more details); OECD (PISA).

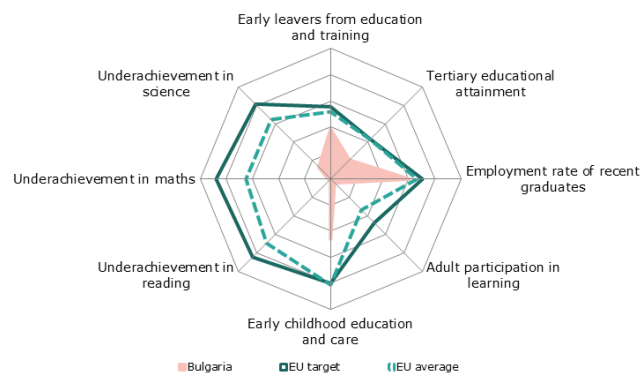
Notes: data refer to weighted EU averages, covering different numbers of Member States depending on the source;

d = definition differs, 12 = 2012, 13 = 2013, 15 = 2015, 16 = 2016.

On credit graduate mobility, the EU average is calculated by DG EAC on the available countries; on degree graduate mobility, the EU average is calculated by JRC over Eurostat and OECD data.

Further information can be found in the relevant section of Volume 1 (ec.europa.eu/education/monitor).

Figure 1. Position in relation to strongest (outer ring) and weakest performers (centre)



Source: DG Education and Culture calculations, based on data from Eurostat (LFS 2017, UOE 2016) and OECD (PISA 2015). Note: all scores are set between a maximum (the strongest performers represented by the outer ring) and a minimum (the weakest performers represented by the centre of the figure).

2. Highlights

- Bulgaria is implementing reforms at all levels of education as this is a political priority. Although measures do not yet match the magnitude of the challenges, there is an increased focus on reducing early school leaving, increasing teacher salaries, introducing dual learning, improving digital skills and strengthening inclusive education.
- Bulgaria typically invests little in pre-primary and primary education, areas which are key for an equal start in life and for preventing income inequalities later in life. The funding model for schools was revised to allocate additional resources to disadvantaged schools.
- Bulgarian students' civic knowledge has increased. Recent measures seek to expand the provision of citizenship education.
- The challenge of Roma inclusion in education remains significant.
- The skills of graduates in higher education and vocational education and training insufficiently match the labour market needs. Participation in adult learning remains very low.

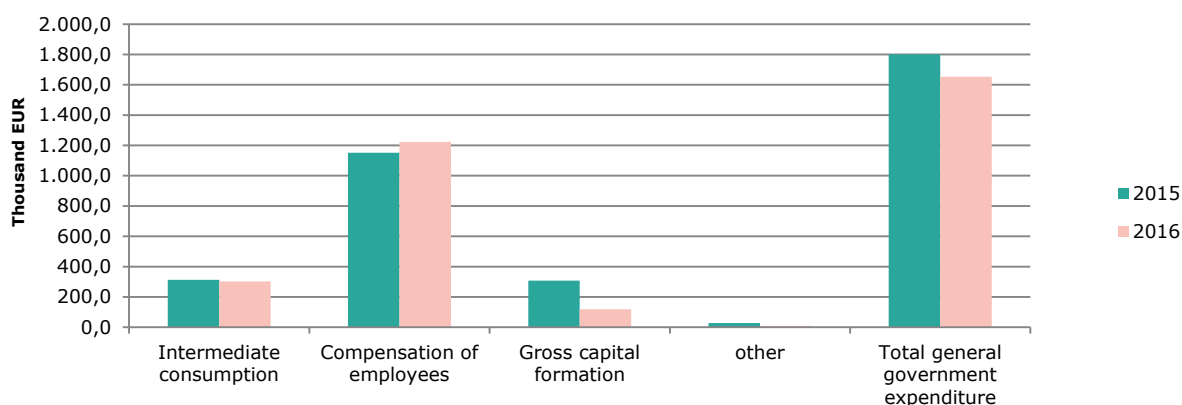
3. Investing in education and training

Spending on education was low in 2016 and impacted by the cycle of absorption of EU funds. In 2016 general government expenditure on education fell in real terms by 9.1 %, the steepest percentage decrease in the EU. As a result, spending on education dropped to 3.4 % of GDP from 4 % in 2015, significantly below the EU average of 4.7 %. Education as a share of total government spending remained at the same level of 9.8 %, below the EU average (10.2 %). These trends are explained by the sharp decrease in 'gross capital formation' (see Figure 2), which covers investment in educational infrastructure (e.g. buildings, computers, IT infrastructure). This was in part due to the closure of the EU's 2007-2013 multiannual financial framework in 2015 and the slow start of spending under the 2014-2020 programming period. This highlights the extent to which such spending in Bulgaria is dependent on EU funds. A commitment to double the salaries of teachers in pre-school and school education by 2021 (see Section 5) can be expected to drive major rises in the 'compensation of employees' category. The total cost for doubling teachers' wages over the period 2017-2021 is estimated at BGN 1.4 billion (EUR 715 million), equivalent to 1.4 % of Bulgaria's GDP in 2017 (IMF, 2018a).

Bulgaria typically invests little in pre-primary and primary education, areas which are key for an equal start in life. In 2016, spending on this level of education was equal to 0.7 % of Bulgaria's GDP, less than half the average of 1.5 % across the EU. It represented 23.1 % of total general government spending on education, compared to 31.7 % on average in the EU. Recent evidence shows that a large part of today's income inequalities in the EU are explained by inequalities of opportunity, which are, in turn, strongly associated with how much countries spend at pre-primary level (Checchi et al., 2015). Income inequalities in Bulgaria are among the biggest in the EU and the impact of parents' socio-economic status on students' educational attainment is strong. Evidence shows that the relationship between inequality and economic growth is largely negative through the negative impact that unequal opportunities have on human capital (WB, 2018). When measured as a percentage of GDP, Bulgaria's spending on secondary (1.7 %) and higher education (0.7 %) is more similar to the EU average (1.9 % and 0.7 %, respectively).

Bulgaria revised its funding model for school education to improve equity. Although the scope for making Bulgaria's public spending more efficient is wide, this is less the case for education, suggesting that more resources and better access to education could improve educational outcomes (IMF, 2018b). Since it introduced delegated budgets in 2007, Bulgaria has managed to improve the cost efficiency of its education spending (EC, 2017) by optimising the school network. However, the process did not cover higher education (see Section 6). In 2018, Bulgaria revised the school funding model to allocate more funding to disadvantaged schools, including those in rural areas, smaller schools and those with a concentration of disadvantaged students.

Figure 2. General government spending (COFOG) on education in Bulgaria



Source: DG EAC, based on Eurostat data and the Classification of the functions of government (COFOG). Online data code: gov_10a_exp.

4. Citizenship education

Bulgarian students' civic knowledge has increased. The International Civic and Citizenship Education Study (ICCS¹) shows that in 2016 Bulgarian teenagers scored 485 points on average, 19 more than in 2009. However, this level is still below the average of 20 countries surveyed (517 points). 27 % of Bulgarian eighth graders have a very high level of civic knowledge (compared with the ICCS average of 35 %), while 22 % scored very low (ICCS: 13 %). Girls continue to outperform boys. Like other international surveys, ICCS confirms the strong impact of parents' socio-economic status on students' performance. In answering questions on values and attitudes, Bulgarian students showed less support for equal opportunities for women and men and for equal rights for ethnic minorities compared to the average among the 20 countries surveyed (MES, 2017). 84 % of teenagers in Bulgaria reported that they would vote in local elections in the near future, 79% would vote in national elections and 65 % in European elections. A higher than average proportion of Bulgarian students considers that working hard is important for good citizenship (53 % vs 42 %), but only 42 % consider that always respecting the law was very important (average: 59 %). The percentage of students who voted for class or school parliament was 56 % (survey average: 77 %).

Recent measures seek to provide more citizenship education. In Bulgaria citizenship education is integrated into social sciences in primary and secondary education (grades 3-7 and 11-12). It is also taught as a compulsory subject in upper secondary (grade 11-12) and as an optional subject in initial vocational education and training. 'Consumer rights and behaviour' is included in the curriculum (Eurydice, 2017). Bulgaria provides continuing professional development for school heads on citizenship education. The revised Education Act, in force since August 2016, extended the recommendations on student councils to primary schools and introduced the right of student representatives to participate, without voting rights, in school boards. Each year class teachers prepare students' personal profiles which include an assessment of their participation in out-of-school civic activities. There are plans to introduce European citizenship and knowledge of European institutions in citizenship education in upper secondary.

5. Modernising school education

Reducing early school leaving is a priority. In 2017 the percentage of early leavers from education and training among those aged 18-24 decreased for the first time since 2011. The rate was 12.7 %, 1.1 percentage points (pps) lower than in 2016. However, it remains above the EU average of 10.6 % and the national Europe 2020 target of 11 %. Early school leaving is particularly

¹ In 2016, 14 EU Member States participated in ICCS: Belgium-Flanders, Bulgaria, Croatia, Denmark, Estonia, Finland, Germany (North Rhine-Westphalia), Italy, Latvia, Lithuania, Malta, the Netherlands, Slovenia and Sweden.

high in rural areas (27.9 %) and among Roma (67 %², (FRA, 2016)). To tackle early school leaving Bulgaria has launched multidisciplinary teams (see Box 1) and is taking measures to support students to stay in school. Although not reflected automatically in the rate of early school leaving, data suggests that almost half of the students who dropped out of primary and lower secondary education in 2016/2017 have in fact emigrated, respectively one quarter of dropouts in upper secondary. However, the data collection and monitoring system is insufficiently developed.

Box 1: The multidisciplinary teams

In 2017 Bulgaria introduced a mechanism for interinstitutional cooperation to identify out-of-school children and return them to education. More than 1 100 multidisciplinary teams, comprising teachers, social workers, Roma mediators and other experts, were formed. They visited around 209 000 homes of children who had dropped out or never gone to school, emigrated or had changed school, but were not being tracked. Almost 22 000 children aged 5-18 were brought back to school.

For comparison, in 2016, 20 000 students from grades 1-12 abandoned school, of which more than 40 % are believed to have emigrated. Of the students re-enrolled, 1 200 (or 5 %) had dropped out by the end of the first school term, along with 4 500 other students not in the scheme. These figures point to the importance of complementing return-to-school efforts with retention measures. Legislation is being prepared to make the teams' mandate permanent.

Box 2: 'Your class'

'Your class' is a project financed by the European Social Fund to reduce school drop-out and improve school retention. The project is open to all schools, but funding is differentiated based on the concentration of students at risk of drop-out, including Roma, those from socio-economically disadvantaged backgrounds and those with special educational needs or health problems.

The project funds additional pedagogical support such as language training for students whose mother tongue is not Bulgarian and additional classes to overcome learning gaps. Extra-curricular activities aim to increase students' motivation. These include theatre classes, painting and photography workshops, robotics, coding clubs, civic education projects and health-related activities. 'Your class' supports parental involvement and school partnerships with NGOs and municipalities. Phase I of the project has a budget of EUR 54 million and is running between September 2016 and 2018. Phase II will run until 2022 at the latest.

The need to improve access to quality early childhood education and care is very important in Bulgaria, but remains a challenge. Participation in early childhood education and care (ECEC) by children aged between 4 and the compulsory school age (7) fell in 2016 to 86.5 % (-2.7 pps). This is significantly below the EU average (95.3 %) and the EU's 'Education and Training 2020' benchmark of 95 %. Enrolment rates are particularly low for children aged 4 (75.4 %). The rate is higher for 5 and 6 year-olds (89.4 % and 94.4 %, respectively), for whom pre-school attendance is compulsory. Authorities plan to extend the compulsory programme to age 4. Participation by Roma children in ECEC is particularly low at 66 % (FRA, 2016). Kindergarten fees are seen as the main barrier to attendance. Municipalities have the right to charge fees for care-related activities and the vast majority do so. Data available for 205 of Bulgaria's 264 municipalities (Amalipe, 2018) shows that only 9 % do not charge fees for the compulsory pre-school programme; only 5 % do not collect fees throughout the entire provision of kindergarten. Monthly fees range from EUR 5 to 35, with some municipalities charging reduced fees for the

² The indicators used in the 2016 FRA survey closely resemble those applied in standard European surveys (EU-SILC, EU LFS) but full comparability was not intended. For more details see FRA 2016.

compulsory programme. For comparison, the level of the minimum guaranteed monthly income under social assistance is EUR 38 (BGN 75). A large-scale experiment in disadvantaged, mostly ethnically segregated communities showed that offering free access is the most cost-efficient strategy to get children to attend kindergarten (WB, 2017). Recent measures to invest in pre-primary education include the project 'Active inclusion in the pre-school education system' co-financed by the European Social Fund. The project was approved in 2018 and has a budget of EUR 41.2 million. Additional training for children whose mother tongue is not Bulgarian is also being provided.

Roma inclusion in education remains a major challenge. Roma are at a higher risk of dropping out of school and fewer Roma children go to kindergarten. Segregation in education remains a problem, with an estimated 60 % of Roma students (FRA, 2016) studying in educational settings where all or most other students are Roma. In many cases in rural areas this is due to demographics: there are few or no ethnic Bulgarian children and most schools in rural areas are attended only by ethnic Roma, Turkish or Muslim Bulgarians (Amalipe, 2018). In urban areas, this is linked to residential segregation or secondary school segregation — the 'white flight' phenomenon. Segregation into separate classes or buildings is prohibited by law, but monitoring and enforcement are faced with challenges. In addition, almost all Roma-majority schools were classified as 'most-troubled schools' (ibid.). Notwithstanding efforts to increase participation rates and reduce dropping out, significant challenges remain in promoting ethnically-mixed schools and desegregation measures.

There is an increased focus on teachers. Bulgaria has one of the fastest-ageing teaching staff in the EU. In 2016, 49 % of school teachers were aged over 50 and 30 % were 55+. This means Bulgaria will see about half of its teachers retiring in the next 10 years. To make the profession more attractive, in May 2017 the government committed to doubling teacher salaries by 2021. Last year salaries increased twice: by 10 % in January and by 15 % in September. An additional differentiated pay rise is expected in January 2019. Initial teacher education was recently strengthened with the introduction of courses on early identification of educational difficulties and an increase in the number of hours of practical training, but difficulties remain. Mentoring training has been prioritised in continuing professional development programmes for teachers. Since January 2018, teachers' costs for commuting and for accommodation in remote and mountainous areas are eligible for reimbursement.

Improving equity in education and educational outcomes remain key challenges. About 40 % of Bulgarian 15 year-olds (twice the EU average) do not have a minimum level of basic skills in science, reading or mathematics, according to the 2015 PISA survey. Only 54 % of Bulgarians aged 16-24 have a basic or above basic level of digital skills, well below the EU average of 81.9 %). Moreover, the impact of socio-economic background on students' performance is significant. Social segregation — measured as the clustering of disadvantaged students in lower-quality schools — is high in Bulgaria and has been shown to be a major driver of the skills divide (WB, 2018). A new school curriculum is being implemented and innovative teaching at school level is being supported. In information and communication technologies (ICT), the number of classes has been increased, training of teachers in digital skills prioritised and coding clubs funded by the European Social Fund (ESF). While welcome, recent measures do not yet match up to the magnitude of the challenges and the need to ensure that education becomes a force for higher skills and inclusive growth. In this context, the Council of the European Union addressed a country-specific recommendation to Bulgaria in 2018 calling on it to 'improve the provision of quality inclusive mainstream education, particularly for Roma and disadvantaged students' (Council of the European Union, 2018).

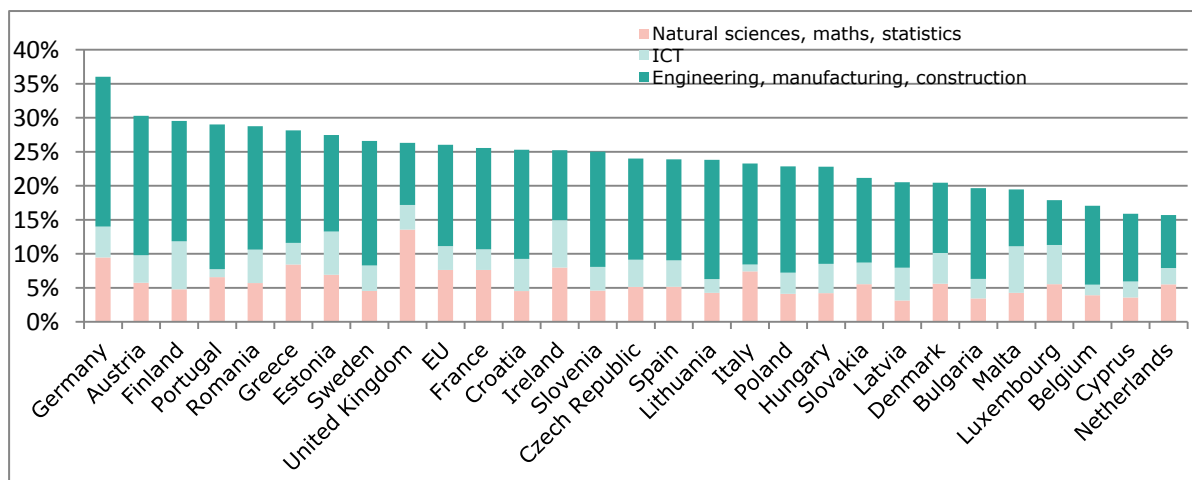
6. Modernising higher education

The skills of higher education graduates do not sufficiently match the needs of the jobs market. In 2017, tertiary educational attainment among Bulgarians aged 30-34 decreased slightly to 32.8 %, still well below the EU average (39.9 %) and the national Europe 2020 target of 36 %. The employment rate of recent tertiary graduates increased by 8 pps to 86.5 %, and is now above the EU average (84.9 %). However, skills shortages, particularly in the manufacturing, construction and digital sectors, and skills mismatches persist (EC, 2018a). Employers often identify knowledge and skills deficiencies, in particular related to the lack of soft skills among fresh graduates (Cedefop, 2018a). There are only 13.9 graduates in science, technology, engineering and

mathematics (STEM) for every 1 000 inhabitants in the 20-29 age group, well below the EU average of 19.1, and the proportion of students graduating in these subjects is rather low (see Figure 3). One in two students in Bulgaria graduates in social sciences, business administration or law, compared to one in three in the EU. Bulgaria is currently implementing a higher education reform focusing on STEM and performance-based funding: 60 % of funding is set to be performance-related by 2020. State-funded study places in certain professional fields, including economics, business administration and tourism, are being reduced or cut completely in universities with low rankings in these subjects under the Bulgaria University Ranking System (BURS).

The decline in student numbers is accelerating. From 2012 to 2017 the number of students in higher education declined by 17 %. This is due to a combination of demographic factors and a preference for studying abroad (in 2016 the number of Bulgarians studying abroad was the equivalent of 9 % of students at home, whereas the proportion of international students was only 3 %). These trends raise concerns over the efficiency of the fragmented network of higher education institutions, of which 37 are publicly funded and 14 are private. Bulgaria has one of the EU's highest numbers of public higher education institutions compared to its population (EC, 2018b). A 2018 independent experts' review of the Bulgarian research system (ibid)³ recommends radically reducing the system's fragmentation through mergers – it proposes a new landscape of 5-6 new research universities and 5-6 new entrepreneurial universities, while the remainder would focus on teaching. Through its European Semester country reports, the European Commission will follow the development and/or implementation of the recommendations of the independent review.

Figure 3. Distribution of tertiary graduates by STEM fields in 2016, as a proportion of total graduates



Source: DG EAC based on Eurostat data. Online data code: *educ_uoe_grad02*.

7. Modernising vocational education and training

The quality and relevance of vocational education and training (VET) are still faced with challenges, but some steps have been taken to improve the situation. The employment rate of Bulgarian VET graduates is low: 59.1 % of recent graduates were in employment in 2017, well below the EU average of 76.6 %. A plan for the development of VET was approved following extensive consultations. All learning plans and programmes are being updated in cooperation with business representatives. Dual VET was introduced in Bulgaria in 2016, confirming apprenticeship as a form of practical training. Pilot projects are being implemented in cooperation with Switzerland, Germany and Austria. In

³ Requested by the Bulgarian authorities and financed by the European Commission.

2017, a total of 1 742 students (1 % of students in vocational 'gymnasiums'⁴) were in dual VET programmes. The highest demand was for technicians for computerised numerical control machines, electronic engineering, transport equipment, electro, gas, wood-processing, and milk and dairy production. Roll-out of the dual education system is to be supported by the ESF. Performance-based funding will be introduced in VET to direct learners to vocational programmes, targeting professions that are in short supply on the labour market. Financial incentives will be offered to VET schools offering these professions.

8. Promoting adult learning

Participation in adult learning remains very low. Bulgaria has one of the lowest adult participation rates in learning in the EU (2.3 % in 2017 vs 10.9 % EU average), according to the EU Labour Force Survey (LFS). 26.5 % of employees participated in continuing vocational training, well below the EU average of 40.8 %, according to the Continuing Vocational Training Survey (CVTS) from 2015. Participation by adults in education and training was 24.6 % in 2016 (also well below the EU average of 45.1 %), according to the Adult Education Survey (AES). These differences can be explained by the narrow spectrum of adult learning activities captured by the LFS and the difference in reference periods (4 weeks compared to 1 year for AES and CVTS). Bulgaria's overall level of digital skills is among the lowest in the EU (31 % in 2017 vs 59 % EU average) and closely linked to socio-economic status. The Bulgarian Digital National Alliance⁵ continues to carry out activities to increase digital skills among different segments of the population. With funding from the ESF and national funds, the National Employment Agency helps employed and unemployed people with at most secondary education to acquire a professional qualification and learn digital skills and foreign languages.

Several measures seek to increase the flexibility and responsiveness of the education and training system. The implementation of the National Qualifications Framework is being supported by the European Commission's Structural Reform Support Service (SRSS) with the aim of adjusting the national list of professions to the requirements of the economy. While anticipating and matching skills is at an early stage in Bulgaria, cooperation with the European Centre for the Development of Vocational Training (Cedefop) started in 2017 to create the model and tools to connect the supply of and demand for skills and qualifications. Initial findings (Cedefop, 2018a) show that while steps have been taken in the right direction, effective coordination mechanisms at national, regional and local level to help stakeholders find work are still missing. The link between skills forecasting and education is weak. The scope of current occasional foresight activities, usually carried out for specific occupations, needs to be broadened. In addition, the dependence on EU funding encourages a project-based approach. In parallel, the 2016 ESF project 'Development of National Competences Assessment System – My competence' is analysing the skills needs in 20 economic sectors. It aims to develop sectoral competence models, e-training programmes and modules to assess employees' training needs.

⁴ Which provide third and second level of professional qualification.

⁵ European Commission initiative in response to the shortage of ICT professionals and experts.
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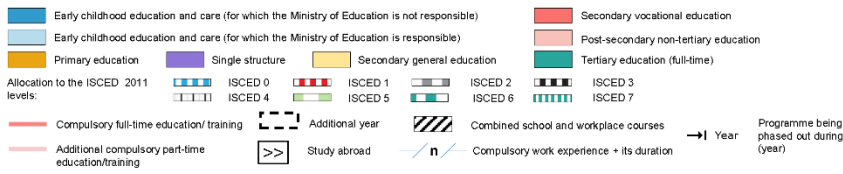
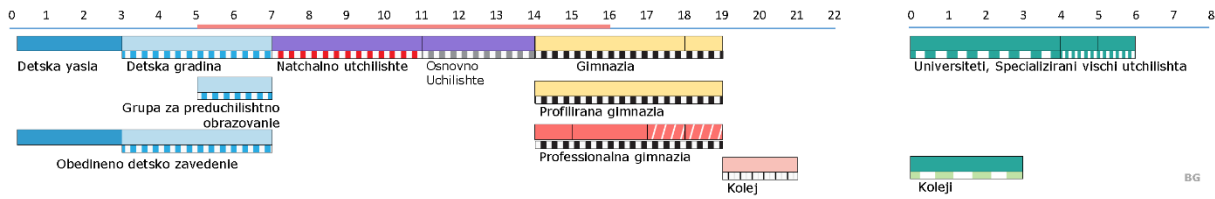
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10. Annex I: Key indicator sources

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	educ_uoe_mobc02

11. Annex II: Structure of the education system



Source: European Commission/EACEA/Eurydice, 2017. *The Structure of the European Education Systems 2017/18: 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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