



# Education and Training Monitor 2016

# Bulgaria

*Volume 2 of the Education and Training Monitor 2016 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-2015. It therefore complements the existing sources of information which offer descriptions of national education and training systems.*

*The structure of the country reports is as follows. 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 expenditure on education, and demographic and skill challenges. Section 4 focuses on early school leaving, early childhood education and care, and basic skills as important areas related to tackling inequalities and promoting inclusion. Section 5 deals with policies to modernise school education, covering, inter alia, the teaching profession and digital and language skills. Section 6 discusses measures to modernise higher education. Finally, section 7 covers vocational education and training, as well as adult learning.*

*The manuscript was completed on 15 September 2016.*

*Additional contextual data can be found online ([ec.europa.eu/education/monitor](http://ec.europa.eu/education/monitor))*

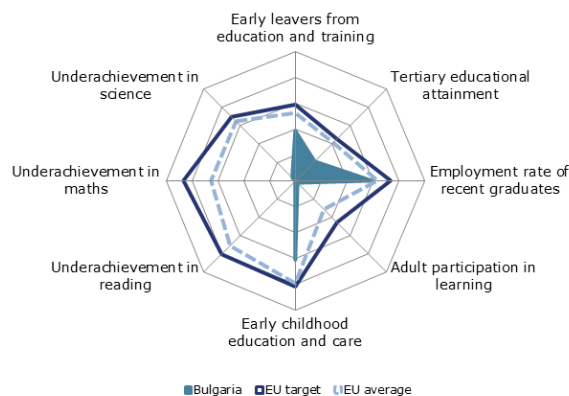
## 1. Key indicators

		Bulgaria		EU average		
		2012	2015	2012	2015	
<b>ET 2020 benchmarks</b>						
Early leavers from education and training (age 18-24)	Total	12.5%	13.4%	12.7%	11.0%	
Tertiary educational attainment (age 30-34)	Total	26.9%	32.1%	36.0%	38.7%	
Early childhood education and care (ECEC) (from age 4 to starting age of compulsory education)		86.6% <sup>11</sup>	89.3% <sup>14</sup>	93.2% <sup>11</sup>	94.3% <sup>14</sup>	
Proportion of 15 year-olds with underachievement in:	Reading	39.4%	:	17.8%	:	
	Maths	43.8%	:	22.1%	:	
	Science	36.9%	:	16.6%	:	
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-8 (total)	67.3%	74.6%	75.9%	76.9%	
Adult participation in lifelong learning (age 25-64)	ISCED 0-8 (total)	1.7%	2.0%	9.2%	10.7%	
<b>Other contextual indicators</b>						
Education investment	Public expenditure on education as a percentage of GDP	3.4%	4.1% <sup>14</sup>	5.0%	4.9% <sup>14,p</sup>	
	Expenditure on public and private institutions per student in € PPS	ISCED 1-2	€2.024	€2.178 <sup>13</sup>	:	: <sup>13</sup>
		ISCED 3-4	€2.122	€2.293 <sup>13</sup>	:	: <sup>13</sup>
ISCED 5-8		€3.834	€4.104 <sup>13</sup>	:	: <sup>13</sup>	
Early leavers from education and training (age 18-24)	Native-born	12.6%	13.5%	11.6%	10.1%	
	Foreign-born	:	:	24.9%	19.0%	
Tertiary educational attainment (age 30-34)	Native-born	26.8%	32.0%	36.7%	39.4%	
	Foreign-born	:	:	33.8%	36.4%	
Employment rate of recent graduates by educational attainment (age 20-34 having left education 1-3 years before reference year)	ISCED 3-4	56.6%	54.6%	69.7%	70.8%	
	ISCED 5-8	78.5%	87.1%	81.5%	81.9%	
Learning mobility	Inbound graduates mobility (bachelor)	3.9% <sup>13</sup>	3.4% <sup>14,e</sup>	5.5% <sup>13</sup>	5.9% <sup>14</sup>	
	Inbound graduates mobility (master)	2.7% <sup>13</sup>	2.7% <sup>14,e</sup>	13.6% <sup>13</sup>	13.9% <sup>14</sup>	

Sources: Eurostat (see section 9 for more details); OECD (PISA).

Notes: data refer to weighted EU averages, covering different numbers of Member States depending on the source; b = break in time series, d = definition differs, p = provisional, u = low reliability, 11 = 2011, 13 = 2013, 14 = 2014. Further information can be found in the relevant section of Volume 1 ([ec.europa.eu/education/monitor](http://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 2015) and OECD (PISA 2012).

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 taking the first steps in the implementation of the Pre-school and School Education Act with the adoption of several state educational standards.
- The early school leaving rate increased and shows large regional variations.
- In terms of educational outcomes, vulnerable groups such as Roma and pupils from rural areas perform significantly below average.
- In tertiary education, attainment rates continue to increase and a model for performance-based financing was introduced, but several challenges remain including insufficient labour market relevance.
- General government expenditure on education remains among the lowest in the EU.

### Box 1: The 2016 European Semester country-specific recommendation on education and training

The 2016 European Semester country-specific recommendations (CSRs) to Bulgaria (Council of the European Union 2016) included a recommendation on education and training:

Increase the provision of quality education for disadvantaged groups, including Roma

## 3. Investing in education to address demographic and skill challenges

General government expenditure on education in Bulgaria is among the lowest in the EU. In 2014, it accounted for 4.1 % of GDP (below the EU average of 4.9 %) and for 9.7 % of total general government expenditure.<sup>1</sup> While the system is underfunded at all levels, the authorities estimate that – in relative terms – spending on education will decrease as a result of measures to increase the transparency and efficiency of spending and optimisation of the school system network. According to the 2016-2019 Convergence Programme for Bulgaria, educational expenditure is projected to decrease to 3.2 % of GDP in 2019 and to 8.7 % of total public spending. Nevertheless the authorities have announced that spending on education will be a priority in the 2017 budget. Bulgaria has already introduced changes to the funding model at all educational levels, including the use of delegated budgets and unified cost standards since 2007.<sup>2</sup> A further improvement of the funding formula is part of the Pre-school and School Education Act. Finally, performance-based funding in higher education was recently introduced (see section 6).

The school population is dropping as a consequence of demographic trends. In the 2015/2016 school year, the total number of pupils and students was 1,24 million, 2.7 % less on to the previous year. The number of students in pre-primary (-3,7 %) and tertiary education (-4.3 %) decreased, but remained stable for primary and lower secondary education (National Institute for Statistics 2016).

The employment rate (25-64) for those with upper secondary (ISCED 3-4) and tertiary education (ISCED 5-8) is around the EU average,<sup>3</sup> but it is significantly lower for those with primary or lower secondary education at most (ISCED 0-2). Skills shortages remain a challenge, with most bottlenecks vacancies in high-skilled occupations, such as management, engineering,

<sup>1</sup> Source: Eurostat, General government expenditure by function (COFOG) database.

<sup>2</sup> The reform resulted in money savings and increases in teachers' salary (World Bank 2009), but recent evidence suggests that the results were mixed, and that the funding principle may have disadvantaged students from vulnerable groups (World Bank 2014).

<sup>3</sup> In 2015, ISCED 0-2: 40.3 % vs an EU average of 53.2 %; ISCED 3-4: 73 % vs an EU average of 73.9 %; ISCED 5-8: 84.9 % vs 84.1 %.

the medical professions and IT. There is also an unmet demand in sectors such as tourism, trade and textiles where lower skills qualifications are required (European Commission 2014).

## 4. Tackling inequalities and promoting inclusion

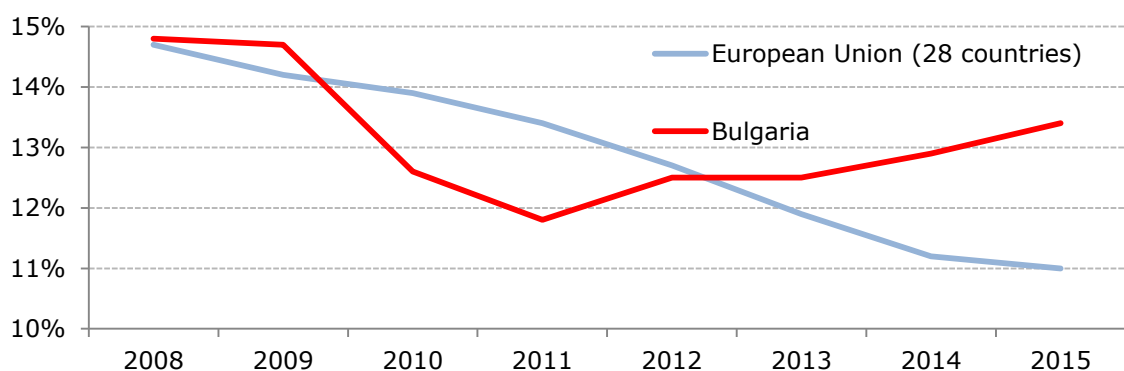
Contrary to the overall EU trend, the early school leaving rate (ESL) in Bulgaria has been increasing since 2011, reaching 13.4 % in 2015. The ESL rate shows large differences between regions, between urban and rural areas, and for minority groups. The ESL is low in only one region – the South-West region (5.7 %) – which includes the capital Sofia. In all the other five regions, the proportion is above the national average, reaching an alarming 23.1 % in the North-West.

As from the 2013/2014 school year, an ‘all-day school programme’ was introduced for all students in primary education (grades 1 to 4). The 2015 Pre-school and School Education Act provides for an extension of this programme until the 7th grade. Recently, the authorities defined the all-day school programme as one of the main measures to improve educational outcomes and reduce the number of drop-outs.<sup>4</sup> Furthermore, in 2013 Bulgaria adopted a Strategy for Reducing the Share of Early School Leavers. Its interim evaluation reports point to some progress in achieving the Strategy milestones, but an early-warning system has yet to be developed (Ministry of Education and Science 2015a).

Bulgaria has the highest inequality of educational opportunities and social stratification in the EU, as defined by the correlation between the PISA student’s socioeconomic status and the average school’s socioeconomic status (World Bank 2014). At the same time, there are gaps in the quality of education between elite schools in regional centres and vocational schools in small towns.

Participation in early childhood education and care (age four to mandatory school age) remains below the EU average (94.3 %), but is increasing, and reached 89.3 % in 2014. As of 2012/2013, a mandatory two-year pre-school education programme was introduced. For children who come from areas without a kindergarten, free transport is provided within the municipality or to an adjacent municipality.

**Figure 2 Early school leaving rate**



Source: European Commission elaboration on Eurostat data. Online data code: *edat\_ifse\_14*

In general, the enrolment rates, completion rates and the educational outcomes for disadvantaged groups remain significantly below the national average. Socio-economic status has a major impact on educational opportunities, and there are important regional differences in terms of participation and performance, as well as between urban and rural areas. Language is often a barrier for Roma children. This results in lower educational performance and lower access to quality education. Other barriers are hidden educational costs, poor infrastructure, the

<sup>4</sup> Updated Medium Budget Forecast for the 2016-2018 period (Motives for the State Budget of the Republic of Bulgaria, 2016), draft.

lack of kindergarten capacity (in towns), lack of trained staff, the need to better cooperate with parents and NGOs.

Data from the 2011 national census show that 93 % of Roma did not complete upper secondary education, compared to 30 % of ethnic Bulgarians. The data also show that almost a quarter of Roma children aged 7-15 were outside the education system (European Commission, 2016). The proportion of NEETs<sup>5</sup> (aged 16-24) among Roma is very high (61 %) (European Union Agency for Fundamental Rights 2014). Drop-out rates are higher among children of Roma ethnicity while around 26 % of Roma children receive education in *de facto* segregated schools, as defined in the Roma Inclusion Index (2015). The 2015 implementation report of the National Roma Integration Strategy (2012-2020) points to the need for stronger political commitment, accompanied by increased cooperation between different levels of public administration and other stakeholders, systematic monitoring and the provision of integrated measures. Challenges remain in terms of discrimination, negative stereotypes, and socio-economic and cultural factors, which contribute to marginalisation.

More efforts are also needed for desegregation measures and intercultural education in an ethnically mixed environment. The educational integration of children and young people from disadvantaged groups features prominently in several recently adopted strategies and legislative acts, primarily the Strategy for Educational Integration of Children from Ethnic Minorities (2015-2020), which sets out four strategic aims: (i) the comprehensive socialisation of children and pupils from ethnic minorities; (ii) ensuring equal access to quality education for children and students from ethnic minorities; (iii) promoting intercultural education as an integral part of the process of modernising the Bulgarian educational system; and (iv) preserving and developing the cultural identity of children and students from ethnic minorities. The adoption of the Strategy (and its action plan) is a positive sign of continuous political attention to Roma integration on behalf of the Ministry of Education. Nevertheless, considering that no additional budget has been allocated for its implementation,<sup>6</sup> it's even more crucial to ensure consistency between the strategy's aims, the new educational standards and the programmes in the field of education financed from the European Social Fund.

## 5. Modernising school education

The Bulgarian education system has been characterised by low quality (as measured by PISA 2012), outdated curricula and inequalities between pupils in different types of schooling. To address these challenges, Bulgaria embarked on an important educational reform by adopting the Pre-School and School Education Act, which entered into force in August 2016. The new law defines education as a national priority and puts forward a series of changes to the educational system (see Box 2). As a first step of implementation, several state educational standards were adopted, such as the standards on pre-school education, the curriculum, use of literary Bulgarian language, and textbooks. The new curricula for general subjects are being developed with a view to gradually entering into force. Other educational standards defined by the reform are still to be approved, such as the standards on professional qualifications, inclusive education, evaluation of learning outcomes, inspection of kindergartens and schools, financing of institutions or intercultural education.

Additional challenges of the Bulgarian school system relate to the relatively low attractiveness of the teaching profession and a steady trend of ageing among teaching staff<sup>7</sup>. Bulgaria is also implementing a National Strategy for the Development of Pedagogical Staff (2014-2020) with the aim of creating conditions for attracting young specialists in pre-primary and school education and improving retention. It aims to create a framework of national policies for the education, training and career development of pedagogical staff, thereby improving the quality of education. Teachers' salaries were increased by 12.6 % in October 2015.

<sup>5</sup> Young people not in Education, Employment, or Training (NEETs)

<sup>6</sup> Except a modest budget of the Centre for Educational Integration of the children from ethnic minorities

<sup>7</sup> Teachers in Bulgaria are on average older than in most other TALIS countries (47.4 years compared to an average of 42.9 among surveyed countries) (OECD 2014).

## Box 2: Changes introduced by the Pre-School and School Education Act

### 1. A new education structure and new types of schools

A new structure came into force with the 2016/2017 school year. The school system will comprise first primary (grades 1-4), second primary (grades 5-7), first secondary (grades 8-10), and second secondary (grades 10-12). Basic education will be completed at the end of grade 7 instead of grade 8. School education will continue to be mandatory until the age of 16. The reform defines 'united schools' (grades 1-10). In practice, by the end of May 2017, municipal councils have to decide whether any basic schools in their municipalities are to be transformed into schools offering grades 1-7 or into 'united schools' offering grades 1-10, and which ones.

### 2. Increased school autonomy

'Innovative schools' will develop and implement innovative education methods to accommodate students with special talents who need a less standard approach. School autonomy is being strengthened at all levels of the teaching process and curriculum development to better adapt them to student needs and interests. Kindergartens are being given full autonomy in relation to the organisation of work, strategy for development, distribution of learning time and choice of educational books.

### 3. Emphasis on inclusive education

Individualised support based on assessment (including individual curricula and programmes) is to be provided to students with special educational needs, but also to students at risk or children with chronic diseases. The law prohibits the creation of separate classes for children with special educational needs or based on the ethnicity of pupils. Furthermore, schools accommodating students with special needs are to be transformed into personal development centres by August 2017. In addition to mandatory education programmes, students in these centres will be supported by special activities such as rehabilitation treatments, diagnostic and therapeutic procedures, psychological support and career guidance. These centres would only accommodate students who cannot be integrated into mainstream education.

### 4. Subsidies for private pre-school and school establishments

Private education establishments may receive public funding under certain conditions: 20 % of places must be offered free of charge and schools must charge fees for after-school activities not covered by public funding.

### 5. Improved monitoring

The newly established National Education Inspectorate will perform school inspections and school assessments and provide guidance on the quality of school education. At the same time, every pre-school and school will appoint a public council made up of stakeholders to scrutinise the education process and the school management.

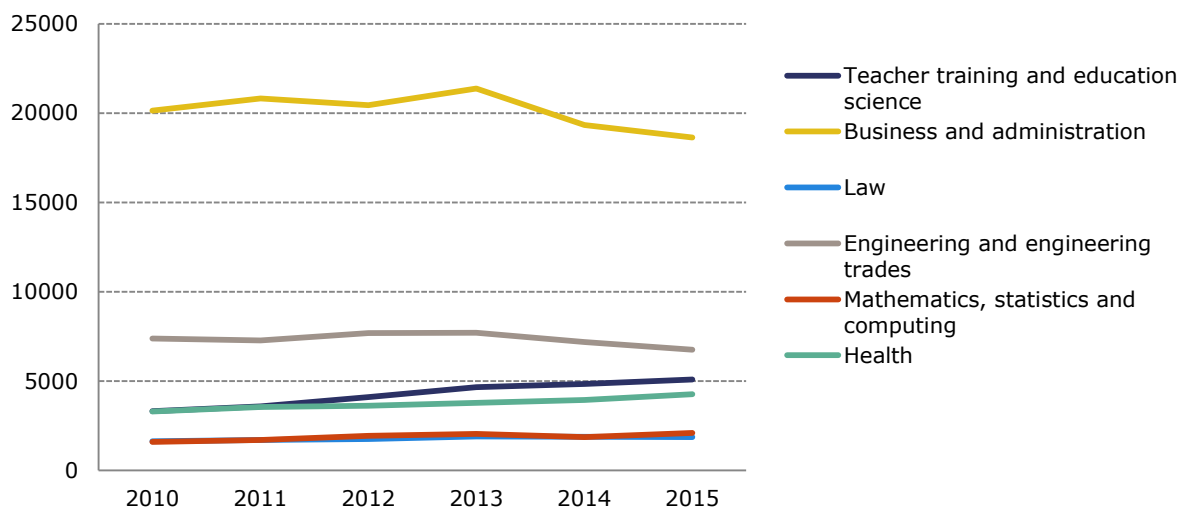
While implementation of the reform has started, success is contingent on key factors such as securing financial resources, and increasing capacity at national, local and school level. Financial support will also be provided from the Operational Programme Science and Education for Intelligent Growth 2014-2020, with support from the European Social Fund and the European Regional Development Fund (EUR 701 million in total, including the national co-financing).

## 6. Modernising higher education

The rate of tertiary educational attainment (for 30-34 year-olds) increased to 32.1 % in 2015 which means that Bulgaria is on track to reach its national Europe 2020 target of 36 %. There are however significant gender disparities: the attainment rate of women is around 15 percentage points higher than that of men.

The employment rate of recent tertiary graduates<sup>8</sup> increased significantly, reaching 87.1 % in 2015, and is now above the EU average of 81.9 %. This is largely due to improving labour market prospects. In 2015, the highest proportion of graduates had studied business and administration (29.7 %), followed by social and behavioural science (13.7 %), engineering and engineering trades (10.7 %), Teacher training and education science (8.12 %), and Health (6.81 %). One of the lowest proportion of graduates were recorded in computing (3.18 %), life sciences (0.83 %), and mathematics and statistics (0.16 %)(National Institute for Statistics 2016). The proportion of graduates in social science, business and law is one of the highest in the EU, but on a decreasing trend, whereas the proportion of graduates in science, mathematics and computing, as well as health and welfare is one of the lowest in the EU, but on the rise.<sup>9</sup>

**Figure 3 Number of graduates by major fields (all tertiary qualifications)**



Source: Own calculations based on figures from the National Statistical Institute of the Republic of Bulgaria.

Note: "All tertiary qualifications" includes Professional bachelor's degrees, Bachelor's degrees, Master's degrees, and Doctoral degrees.

The Strategy for the Development of Higher Education (2014-2020) identifies a series of key challenges such as underfinancing, insufficient labour market relevance, insufficient links between training and research, difficulties in attracting lecturers and in the career advancement of lecturers, inadequate opportunities for lifelong learning, as well as access difficulties for vulnerable groups. The challenges of low labour market relevance are linked to the mismatch between graduates' competencies and labour market needs, shortages of personnel in the field of engineering, technical or educational training, limited connection between curricula and the labour market, the need for more practical training and insufficient career guidance (Ministry of Education and Science 2015b).

There are also challenges in respect of the quality of Bulgarian higher education and its compatibility with the European higher education system due to teaching methods that lag behind innovative trends, the low level of scientific results in some areas, complicated and inefficient procedures for accrediting and evaluating higher education universities, as well as insufficient outgoing and weak incoming mobility of students.

To address these challenges, the Strategy for Higher Education proposes a series of measures across seven objectives: 1) improving access to higher education and increasing the number of university graduates; 2) increasing the quality of higher education; 3) setting up a sustainable and efficient link between higher education institutions and the labour market; 4) promoting research; 5) updating the governing system and clearly defining higher education institutions;

<sup>8</sup> People aged 20-34 who left tertiary education between one and three years before the reference year.

<sup>9</sup> According to Eurostat (online data code: *educ\_uoe\_grad02*), in 2014, the proportion of graduates in science, mathematics and computing was 5 % (EU-average 10%, whereas the proportion of graduates in social science, business and law was 49%.



6) increasing the funding of higher education and science and 7) overcoming the negative trends in the career development of lecturers at higher education institutions and creating incentives for them.

In line with the Strategy, Bulgaria has recently introduced a performance-based financing model for higher institutions. Whereas in 2014, 14.6 % of state funding to public institutions was allocated based on criteria designed to measure quality and labour market relevance, the proportion will increase to 30 % in the 2016/2017 academic year, and then by 10 percentage points each year until it reaches 60 % in 2019/2020. State funding will no longer be based primarily on the number of students registered in a programme, but will be defined according to specific criteria on quality of training and compliance to labour market needs, such as an evaluation of accreditation and research activities and data about graduate employability, but also socio-economic priorities. As such, 32 specialties were defined as 'priority areas' and 12 others considered as 'protected' (i.e. important but not attractive to applicants). The list of priority areas includes mathematics, engineering, bio-technology, chemistry, energetics, food technology, as well as informatics, computer science and technology. Finally, the protected specialties defined are mostly in the field of philology (e.g. Korean studies, Greek philosophy and Japanese studies)

## 7. Modernising vocational education and training and promoting adult learning

The participation rate of upper secondary students in vocational education and training (VET) is above the EU average (52.4 % compared to an EU average of 48.9 % in 2013). The labour market outcomes (employment rates) of upper secondary VET graduates are better than those of general upper secondary graduates, but still below the EU average (61.5 % compared to 73 %). However, the quality and attractiveness of VET, and the provision of relevant skills for further training and employment, remain insufficient. Underfinancing, poor cooperation with the business sector, increasing drop-out rates and lack of a coherent system to assess the quality of VET continue to be a challenge (Court of Auditors 2016). Adult participation in lifelong learning is the second lowest in the EU (2 % in 2015 compared to the EU average of 10.7 %). It has increased by 0.4 percentage points since 2011. Project-based continuous vocational education and training (CVET) is provided through the European Social Fund and active labour market policies, but it is rather fragmented.

The 2014 reform of the law on vocational education and subsequent legislation paved the way for the introduction of dual education in Bulgaria. A series of pilot projects in secondary schools were launched in the 2015/2016 academic year. Other recent VET measures include an Action Plan (2015-2017) of the VET Strategy, and recently adopted amendments in VET legislation and by-laws/ordinances. Their aim is to boost quality, introduce work-based learning (WBL), adapt VET curricula to labour market needs and develop a system for validating non-formally and informally acquired learning outcomes.

The annual action plans of the Lifelong Learning Strategy (2014-2020) lay down concrete measures to increase the adult participation rate to 5 % by 2020 and to widen the coverage of the provision, including a focus on disadvantaged groups. At the moment, implementation of the measures is still at an early phase.

Progress in both VET and adult learning reforms will depend on:

- concrete follow-up and implementation;
- improved multilevel governance and stepping up cooperation with business and social partners, including shared school-business WBL;
- mainstreaming pilot project results in the education system;
- a fully-fledged information and monitoring system as well as feedback mechanisms to provide information on VET/adult learning provision.

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## 9. Annex. Key indicator sources

Indicator	Eurostat online data code
Early leavers from education and training	edat_lfse_02 + edat_lfse_14
Tertiary educational attainment	edat_lfse_03 + edat_lfs_9912
Early childhood education and care	educ_ipart (2011), educ_uoe_enra10 (2014)
Employment rate of recent graduates	edat_lfse_24
Adult participation in lifelong learning	trng_lfse_01
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	educ_uoe_mobg03

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