European Commission

Education and Training
MONITOR 2018

Education and Training

The Education and Training Monitor is a European Commission Staff Working Document that presents a yearly evaluation of education and training systems across Europe.

The Monitor reports on EU and Member States' performance on the ET2020 benchmarks, and elaborates on policy priorities and initiatives for education systems. Volume 1 of the Monitor provides an analysis from cross-national and thematic points of view. Volume 2 comprises 28 individual country reports.

The report brings together the latest data, technical reports and studies, as well as policy documents, and examples of policy measures from different EU Member States. The report contributes to the implementation of the ET 2020 cooperation framework. It is also a tool for educational stakeholders and institutions in Europe to compare their country to other EU Member States, and an opportunity for peer learning.

This year's Education and Training Monitor lead theme is citizenship education and civic competences (Part 1 of Volume 1). In Part 2, progress towards the EU's 2020 education targets are analysed at EU level and in individual Member States. Finally, Part 3 looks into investment in education.

ec.europa.eu/education/monitor

EU targets for 2020 in education and training

			Current	Target
Headline target	1	**Early leavers from education and training** The share of 18 to 24 year-olds having attained ISCED level 0-2 and not receiving any formal or non-formal education or training in the four weeks preceding the survey.	10.6 %	Below 10 %
	2	**Tertiary educational attainment** The share of 30 to 34 year-olds having successfully completed ISCED level 5-8.	39.9 %	At least 40 %
Other targets	3	**Early childhood education and care** The share of children aged 4 to the age of compulsory primary education who are participating in education.	95.3 %	95 %
	4	**Underachievement in reading, maths and science** The share of 15 year-olds failing to reach level 2 in the OECD's PISA for reading, mathematics and science.	Reading: 19.7 % Maths: 22.2 % Science: 20.6 %	15 %
	5	**Employment rate of recent graduates** The share of employed 20 to 34 year-olds having successfully completed ISCED 3-8 one to three years preceding the survey and who are no longer in education or training.	80.2 %	82 %
	6	**Adult participation in learning** The share of 25 to 64 year-olds who received formal or non-formal education or training in the four weeks preceding the survey.	10.9 %	15 %

Source: Eurostat (EU-LFS 2017 for 1, 2, 5 and 6; UOE 2016 for 3) & OECD (PISA 2015 for 4). Note: ISCED 0 = early childhood education; ISCED 1 = primary education; 2 = lower secondary education; 3 = upper secondary education; 4 = post-secondary non-tertiary education; 5 = short-cycle tertiary education; 6 = bachelor's or equivalent level; 7 = master's or equivalent level; 8 = doctoral or equivalent level.

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Education and Training Monitor 2018

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

Foreword

In just a few months' time, in May 2019, Europe's citizens will have a big decision to take. The upcoming European Parliament elections will be crucial because of the sensitive and decisive political circumstances facing us. More than that, they will send a clear sign on citizens' understanding of and interest in Europe's institutions as well as its future. How many of them will exercise their right to vote? The level of abstention is the ultimate barometer of the dynamism of a democracy and in the last decade it often sent the same worrying message: a lack of trust towards institutions be they European, national or regional.

This is why I believe the theme of this year's edition of the Education and Training Monitor — citizenship education — is particularly relevant and timely. We must carefully look at our education systems and the action Member States are taking to ensure young people learn about how our democracies and institutions work. Do we teach citizenship in our schools and beyond well and with sufficient intensity? How can we influence the level of civic engagement? How can we encourage pupils to engage in their communities, for instance as volunteers?

These are some of the questions which the Monitor looks at this year. They are also among my top priorities. In a context of increasing social fragmentation, violent radicalisation, fake news and a lack of critical thinking, as well as the need to better integrate both the newly arrived and those with a migrant background in our societies, there is no choice but to strengthen citizenship education. We must create a sense of belonging based on our common European values as well as our national and local identities and traditions. We must give everyone a fair chance to make the most of their talents irrespective of their social background. We must get to know each other and ourselves better so that we are aware of both our diversities and of what we have in common. That is why I proposed to Member States a Recommendation on Common Values, Inclusive Education and the European dimension of Teaching in January which Member States adopted only shortly afterwards. Never has the European Union sent such a clear message in this field and I trust that it will help boost our efforts to further develop and strengthen citizenship education.

The Monitor also shows our progress towards the goals we set ourselves at European level. The trend is generally positive, with the indicators on early school leaving and early childhood education practically met (even if my ambition is to go beyond these established benchmarks). Nonetheless, a major worry remains: the increasing numbers of underachievers revealed by the latest PISA survey indicate that roughly one in five European pupils cannot write, or read or do maths properly. Basic skills are the foundation of a Europe that is prosperous, competitive and cohesive. That is why increasing the level of key competences is at the heart of the European Education Area we are building with Member States, and that is why the Commission supports Member States in investing not only more but more wisely in education.

The main message from this year's Education and Training Monitor is: we are making progress, but must keep working. This is a joint endeavour, and building the European Education Area will help us make a step change in our cooperation, supported by a significantly strengthened and more open Erasmus programme. I am confident that on the way, the Monitor, the leading publication on education in the EU, will keep taking the pulse of education across our Union and help us achieve our shared ambitions.

Tibor Navracsics

Commissioner for Education, Culture, Youth and Sport

European Commission

EU targets for 2020 in education

Early leavers from education and training (age 18-24)

TARGET < 10%

NOW 10.6%

Men 12.1%

Foreign-born 19.4%

Women 8.9%

Native-born 9.6%

Source: Eurostat (EU-LFS, 2017)

Early childhood education and care (age 4+)

Source: Eurostat (UOE, 2016)

Employment rate of recent graduates (age 20-34)

TARGET 82%

NOW 80.2%

Upper secondary vocational education 76.6%

Upper secondary general education 64.1%

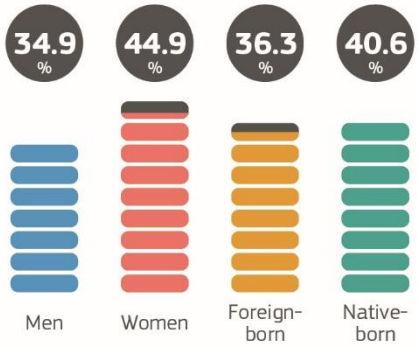
Tertiary education 84.9%

Source: Eurostat (EU-LFS, 2017)

Tertiary educational attainment (age 30-34)

TARGET 40%

NOW 39.9%

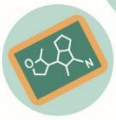


Source: Eurostat (EU-LFS, 2017)

Underachievement in

reading 19.7%

maths 22.2%



science 20.6%

TARGET below 15%

Source: OECD (PISA, 2015)

Adult participation in learning (age 25-64)

By educational attainment

Low (ISCED 0-2)	4.3%
Medium (ICSED 3-4)	8.9%
High (ICSED 5-8)	18.6%

TARGET 15%

NOW 10.9%

Source: Eurostat (EU-LFS, 2017)
Illustrations: © European Commission

Note: See front flap for sources and definitions.

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Part 1

Citizenship education and civic competences

1 Citizenship education and civic competences

Key findings

Vibrant civil societies are characterised by high levels of civic competences. School curricula include citizenship education; yet they differ greatly in how teaching practices promote the development of civic competences.

Research shows that school practices such as classroom discussion and learning by doing activities foster critical thinking, help students understand others and develop open-minded social attitudes. Students who perceive their teachers to be open to different opinions, and encouraging discussion within the classroom tend to attach higher importance to citizenship values, have greater trust in democratic institutions and to be more ready to accept the idea of equal rights for all.

Experiencing democracy in the classroom could be further reinforced by the wider school community. A whole-school approach could integrate democracy into the everyday school experience, offering the opportunity for students to observe as well as to practise democracy in their school.

Prospective teachers can specialise in citizenship education during initial teacher education in Belgium (French Community[1]), Denmark, UK (England), Ireland, Luxembourg and the Netherlands. In other countries (the Czech Republic, Estonia, Latvia, Lithuania, Austria, Poland and Slovakia), they can specialise in civic or citizenship education together with one or two other subjects, mainly history. At the time of the last survey (2010/2011), specialising in citizenship education at the level of initial teacher education was an option only in the UK (England) — thus this option is increasingly common.

Moving on to tertiary education, in almost half of the EU Member States, legislation offers support to higher education institutions promoting democratic and civic values (Austria, Czech Republic, Germany, Denmark, Estonia, Greece, Spain, France, Lithuania, Luxembourg, Malta, Poland and Romania). Yet overall, the extent to which higher education in the EU contributes to active citizenship is not monitored on a regular basis.

1.1 Citizenship education

Education has a fundamental role to play in sharing and teaching fundamental values and civic rights and obligations. It also has a role to play in promoting social inclusion, notably by combating hostile attitudes towards vulnerable groups. Education helps young people exercise their democratic rights, learn to cooperate with their fellow citizens, assess the media critically and strengthen their sense of belonging. Instilling these values and competences in individuals by education has the power to strengthen the cohesion of European societies.

Research documents education's role of instilling and fostering civic competences, but it also paints a complex picture where actions by different stakeholders need to be aligned. Education is a possible cradle for politically activating young people[2] — a role that is desirable within the boundaries of democratic participation and hence should be mirrored in educational policies at all levels. Teaching civic competences is clearly an issue that is transversal in nature and need

[1] For the definition of the French Community aka Federation Wallonia-Brussels see here.

[2] Ribeiro, N., Neves, T. and Menezes, I. (2017). An Organization of the Theoretical Perspectives in the Field of Civic and Political Participation: Contributions to Citizenship Education. *Journal of Political Science Education,* 13:4,426-446.

to be anchored in descriptions of desired values and competences that overarches standard curricula.

The 2018 Council Recommendation on Key Competences for Lifelong Learning[3] invites Member States to foster the development of civic competences also with the aim of strengthening the awareness of European values as referred to in Article 2 of the Treaty on the European Union and the Charter of Fundamental Rights of the European Union. The newly revised European Framework of Key Competences for Lifelong Learning as defined in the aforementioned Council Recommendation defines the 'citizenship competence' as the ability to act as responsible citizens and to fully participate in civic and social life, based on understanding of social, economic and political concepts and structures, as well as global developments and sustainability. 'Citizenship competence' includes essential related knowledge, skills and attitudes such as understanding and knowledge of contemporary events, European and world history, critical thinking skills and critical use of all forms of media, support for social and cultural diversity, and promotion of peace and non-violence.

Regarding the operationalisation of citizenship education into teaching practices, several Member States have references to 'citizenship education' in their curricular frameworks; yet they differ greatly in how teaching practices promote the development of this competence. According to Eurydice[4], 'citizenship education' is a subject area which aims to promote harmonious co-existence and foster the mutually beneficial development of individuals and the communities in which they live. In democratic societies, citizenship education supports students in becoming active, informed and responsible citizens, who are willing and able to take responsibility for themselves and for their communities at the national, European and international level[5].

The goals of citizenship education include internalising democratic values and fostering cultural diversity, respect for human rights and responsibilities, mutual respect and open-mindedness, openness to dialogue and change, empathy, and critical thinking. These competences — which can be labelled 'civic' or 'citizenship' competences — are an umbrella term to encompass elements such as the following:

- Knowledge of how democratic institutions function, thus allowing individuals to make informed political decisions.
- The ability to gather, interpret and critically assess information about current political and societal developments as well as to communicate in a world shaped by new technologies.
- The values that underpin positive social behaviours in a democratic society. These values include tolerance, openness, non-discrimination, mutual learning and a culture of respectful debate and engagement.
- The attitudes that make for a vibrant and cohesive society. These include:
    - trust in other people in general and fellow citizens in particular;
    - readiness to offer one's free time for volunteer work; and
    - willingness to assume responsibility for one's local community through direct democracy and engagement in political life at regional, national or European level through indirect democracy (i.e. voting).
    - Common values and a sense of belonging and the feeling of being connected with one's community.

[3] Following the Social Summit in Gothenburg in November 2017 and the Commission Communication on strengthening European identity through education and culture (COM(2017)673), and in response to the European Council Conclusions of December 2017, a number of initiatives were adopted, including the Council of the EU (2018). *Recommendation on Key Competences for Lifelong Learning*, 22 May 2018. The revised Key competences framework includes: literacy and multilingual competence; mathematical competence and competence in science, technology, engineering; digital competence; personal, social and learning to learn competence; citizenship competence; entrepreneurship; and cultural awareness and expression.

[4] Network of national correspondents all 38 countries of the Erasmus+ programme.

[5] European Commission/EACEA/Eurydice (2017). Citizenship education at school in Europe, 2017.

Further to this, the conceptual framework adopted from the Council of Europe's competences for a democratic culture[6], identifies four citizenship education areas, based on the relevant knowledge, skills and attitudes:

- interacting effectively and constructively with others including personal development (self-confidence, personal responsibility and empathy; communicating and listening; cooperating with others);
- thinking critically (reasoning and analysis; media literacy; knowledge and discovery; use of sources);
- acting in a socially responsible manner (respect for the principle of justice and human rights; respect for other human beings, for cultures and other religions; developing a sense of belonging; understanding issues relating to the environment and sustainability);
- acting democratically (respect for democratic principles; knowledge and understanding of political processes, institutions and organisations; knowledge and understanding of fundamental social and political concepts).

At school level, the 2016 International Civic and Citizenship Education Study (ICCS)[7] surveyed 53 000 eighth grade students (13-14 years of age) in 14 European countries or territories: Belgium (Flemish Community[8]), Bulgaria, Denmark, Germany (only the federal state of North Rhine-Westphalia), Estonia, Croatia, Italy, Latvia, Lithuania, Malta, the Netherlands, Slovenia, Finland and Sweden. Among the topics covered we find the curriculum, teaching practices, school climate and culture, and students' knowledge of civic and citizenship issues in general. The survey includes a European regional module with information relating directly to knowledge and perceptions about the EU. The study is also a source of global comparisons as it covers 94 000 14-year-old lower secondary school students in 24 countries or administrative entities.

At policy level, the Eurydice network of national education correspondents coordinated by the EU Education, Audio-visual and Cultural Executive Agency (EACEA) provides up-to-date descriptive and qualitative information about how education systems in Europe are structured. A special report on citizenship education in Europe was published in 2017[9].

The 2016 ICCS study[10] shows that students' civic knowledge and participation in school activities correlates positively with declared intentions to vote. Motivating students to take part in within-school activism, such as voting for student-representatives, is likely to increase their actively engaging in the democratic process later in life. It also shows that parental background seems to be correlated with civic competences gains measured on the citizenship and institutional trust scales, and intention to vote.

Many studies have found a robust positive relationship between educational attainment and the probability of voting.[11] Education is viewed as one of the most important factors that influence active social participation and civic engagement. People with high educational attainment tend to be more 'active citizens'[12]. According to 2015 data, EU citizens with higher education degrees are much more 'active' than people with upper-secondary or less than primary education. The participation rates are 22.6 % (ISCED 5-8), 12.1 % (ISCED 3-4) and 6.1 % (ISCED 0-2) respectively. In some countries (for example France, the Netherlands, the UK and Portugal), the difference between the activity level of highly-educated and less-educated people is even more pronounced (more than 20 percentage points (pps)). Denmark is an exception, as people with the lowest income appear to be somewhat more 'active citizens' than those with the highest income.

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6 Council of Europe (2016). *Competences for democratic culture — Living together as equals in culturally diverse democratic societies*.

7 Schulz, W., Ainley, J., Fraillon, J., Losito, B. and Agrusti, G. (2016). *IEA International Civic and Citizenship Education Study 2016 Assessment Framework*.

8 For the definition of the Flemish Community in Belgium see here.

9 European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.

10 Schulz, W., Ainley, J., Fraillon, J., Losito, B. and Agrusti, G. (2016). *IEA International Civic and Citizenship Education Study 2016 Assessment Framework*.

11 Burden, B. C. (2009). The dynamic effects of education on voter turnout. *Electoral Studies* 28: 540–549.

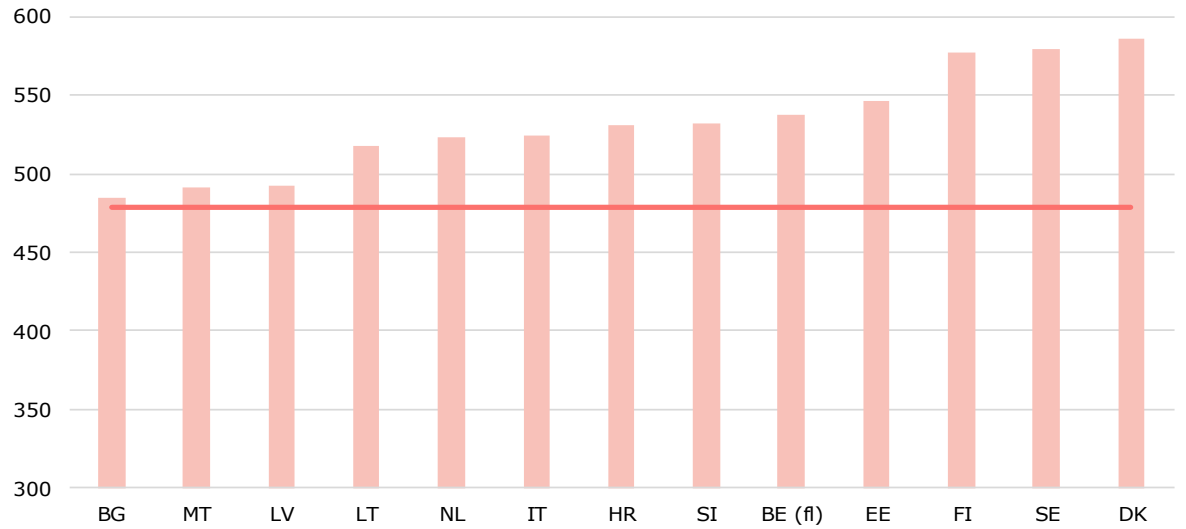
12 Data on 'active citizenship' by educational attainment level (Eurostat, online data code: ilc_scp19).

1.1.1 Students' civic knowledge and attitudes

The 2016 ICCS 2016 study[13] measured civic knowledge among eighth graders by a comprehensive test based on a framework for civic and citizenship competences. The results are presented on a scale where the mean is set to 500 points (based on all countries taking part). The construction of the scale allows proficiency levels to be defined on the basis of desired outcomes. A proficiency level of above 478 points (red horizontal line in Figure 1) signifies a sufficient understanding of democratic principles, the functioning of democratic institutions and ability to generalize principles and values from specific examples of politics and law[14].

The results showed wide variation among the EU Member States participating. Denmark, Sweden and Finland scored over 580 points, while Bulgaria scored 485.

Figure 1 — Index of students' civic knowledge in selected EU Member States



Source: ICCS 2016.
Note: The Y-axis represents the index of civic knowledge. The red horizontal line shows a satisfactory level.

The European student questionnaire[15] in ICCS 2016 shows that:

- 50 % of students have trust in civic institutions,
- 53 % of students felt that they have a sense of European identity,
- 50 % of students report having opportunities for learning about Europe in school,
- 70 % of students trust the European Union and 72 % the European Parliament,
- 65 % of students expect to vote in European elections,
- 85 % expect to vote in national elections.

The correlation between civic knowledge education and development in general is well documented in IEA's international ICCS study. Figure 2 plots — for 21 countries — the score in civic knowledge against the country's UNDP Human Development Index[16] that also entails the country's educational development.

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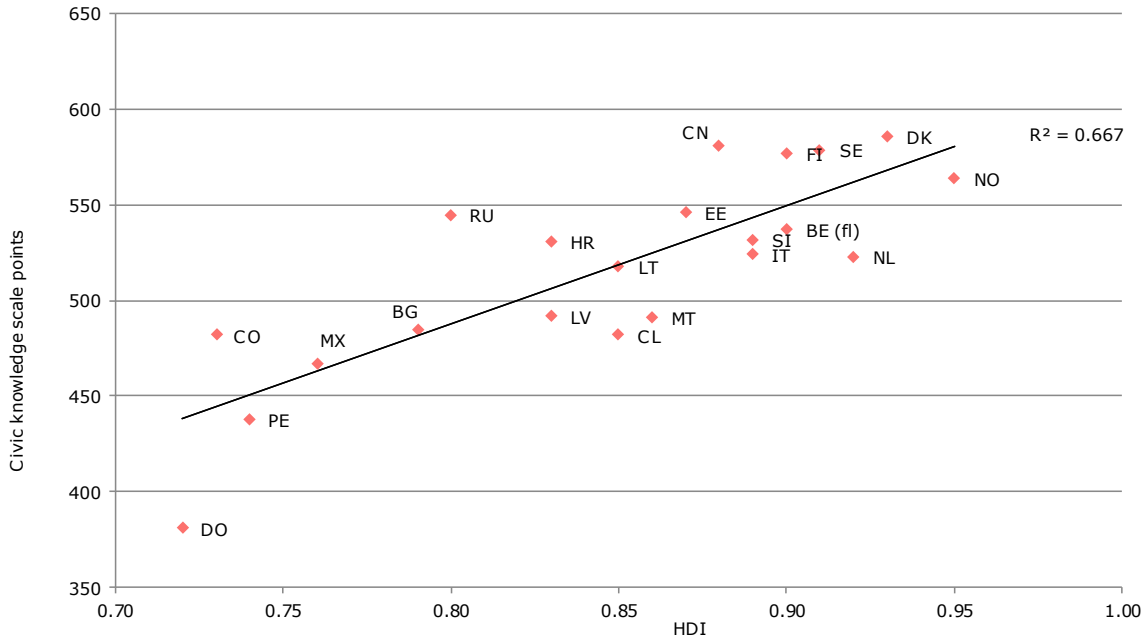
13 Schulz, W., Ainley, J., Fraillon, J., Losito, B., and Agrusti, G. (2016). *IEA International Civic and Citizenship Education Study 2016 Assessment Framework*.

14 Schulz, W., Ainley, J., Fraillon, J., Losito, B., Agrusti, G. and Friedman, T. (2018). Becoming Citizens in a Changing World, IEA International Civic and Citizenship Education Study. The 2016 International Report.

15 Schulz, W., Ainley, J., Fraillon, J., Losito, B. and Agrusti, G. (2016). *IEA International Civic and Citizenship Education Study 2016 Assessment Framework*.

16 HDI is a summary measure combining life expectancy, education index and the Gross National Income per capita.

Figure 2 — Civic knowledge and Human Development Index



Source: calculations by DG EAC, European Commission based on Table 3.9: Schulz, W., Ainley, J., Fraillon, J., Losito, B., Agrusti, G. and Friedman, T. (2018). *Becoming Citizens in a Changing World*, *IEA International Civic and Citizenship Education Study*.
Country abbreviations: BE(fl): Belgium (Flemish Community); BG: Bulgaria; CL: Chile; CN: Chinese Taipei; CO: Colombia; HR: Croatia; DK: Denmark; DO: Dominican Republic; EE: Estonia; FI: Finland; IT: Italy; LV: Latvia; LT: Lithuania; MT: Malta; MX: Mexico; NL: Netherlands; NO: Norway; PE: Peru; RU: Russian Federation; SI: Slovenia; SE: Sweden.

The correlation between education and civic knowledge could also be interpreted the other way around; i.e. that civic knowledge affects human capital. For example, in a trusting society, individuals are more likely to invest in their education because they would expect higher returns[17]. However this is not always the norm. For instance in Greece, although low levels of social trust are observed, society invests a lot of private resources in education and, in general, places a high value on education. Knack and Keefer[18] argue that higher learning makes individuals better informed and conscious of their actions, thus investing in education.

1.1.2 Schools and the promotion of citizenship competences

Education plays a major role as a critical societal institution to both shape and uphold EU citizens' values, commitment to civil society and active pro-social behaviour. In this regard, schools play a particular role as a formative arena for citizenship competences, as well as non-formal and informal learning arenas. Students' family background, individual experiences and their demographic and social characteristics play an essential role in the process of creating civic knowledge and shaping their attitudes. However, analysis[19] of data from the ICCS[20] confirms that certain schools' practices have a moderate but non-negligible influence on the fostering of adolescents' civic attitudes and behavioural intentions in Europe. This happens when schools

17 Papagapitos, A. and Riley R. (2009). Social trust and human capital formation. *Economics Letters*. 102 (3): 158-160.
18 Knack, S. and Keefer, P. (1997). Does Social Capital Have an Economic Pay-off? A Cross-country Investigation. *Quarterly Journal of Economics*, 112.4:1251-1288.
19 Blasko, Z., Dinis da Costa, P. and Vera-Toscano, E. (2018). *Civic attitudes and behavioural intentions among 14-year-olds*. A Joint Research Centre 'Science for Policy' report.
20 Schulz, W., Ainley, J., Fraillon, J., Losito, B. and Agrusti, G. (2016). *IEA International Civic and Citizenship Education Study 2016 Assessment Framework*.

adopt an 'open classroom climate', involve students in democratic practices at school, create a suitable learning environment and promote students' civic knowledge and self-efficacy.

The ICCS study shows that students do not learn about citizenship only by acquiring knowledge. School practices such as classroom discussion and learning by doing activities foster critical thinking and help students understand others and develop open-minded social attitudes. Students who perceive their teachers to be encouraging and open to different opinions and discussion within the classroom tend to attach higher importance to citizenship values, have greater trust in democratic institutions and are more ready to accept the idea of equal rights for all, independently of their social or ethnic background. An open classroom climate, is defined as a place where students are encouraged to express their views freely, ask questions openly and contrast different opinions. The open classroom climate has been shown to be closely related to what is called interactivity and is listed among the six characteristics of effective teaching in citizenship education in Eurydice's latest report. As explained there, interactive learning happens '*through discussion and debate (and) offers students an opportunity to develop their understanding of others, their ability to express their views and experience in negotiating conflicting opinions through discussion and debate*'[21]. Maintaining an open classroom climate is an effective factor associated with positive civic attitudes (see Figure 3). These include citizenship values, trust in democratic institutions, willingness for future political participation, and the level of acceptance of equal rights for minority groups.

It can be noted that the school and classroom climate is among the frequently considered aspects of external school evaluation across Europe.

Figure 3 — Relationship between open classroom climate and students' civic attitudes[22]

Civic attitudes and behaviours: …students' opinion on:	BE (Fl)	BG	DK	FI	HR	IT	LT	LV	MT	NL	SE	SI
conventional citizenship	*	*	*	*	*	*	*	*	*	*	*	
social-movement-related citizenship	*	*	*	*	*	*	*	*	*	*	*	*
the importance of personal responsibility for citizenship	*	*	*	*	*	*	*	*	*	*	*	*
trust civic institutions		*	*	*	*	*	*		*	*	*	*
expected electoral participation	*		*	*	*	*	*		*	*		
expected active political participation						*	*			*		
equal rights for ethnic/racial groups	*	*	*	*	*	*	*	*	*	*	*	*
equal rights for migrants			*	*	*	*	*		*	*	*	*

Source: ICCS 2016. Calculations by the European Commission´s Joint Research Centre.
Note: (*) = positive and statistically significant relationship between open classroom climate and students' opinion on the civic attitudes in the first column in the table. Cells are empty when a statistically significant relationship was not found in the model.

Results from ICCS 2016 also show that students' active participation in democratic practices in school is positively related to their expected future political and electoral participation. Motivating students to take part in various forms of activism in school, such as voting for student representatives or taking part in discussions in the student assembly, etc., most likely helps to increase their interest in actively engaging in democratic processes later in life. Similarly, encouraging active community involvement is positively associated with students' civic attitudes (see Figure 4).

[21] European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe 2017*.
[22] Blasko, Z., Dinis da Costa, P. and Vera-Toscano, E. (2018). *Civic attitudes and behavioural intentions among 14-year-olds*. A Joint Research Centre 'Science for Policy' report. Estonia and the federal state of North Rhine-Westphalia were excluded from the analysis.

Figure 4 — Relationship between:

(i) students' participation in democratic practices in school and students' opinion on civic attitudes and behaviours:

Civic attitudes and behaviours: …students' opinion on:	BE (fl)	BG	DK	FI	HR	IT	LT	LV	MT	NL	SE	SI
conventional citizenship	-						*	*				
social-movement-related citizenship			*					*	*			
the importance of personal responsibility for citizenship									*			
trust civic institutions		*					*					
expected electoral participation	*	*	*	*				*	*	*	*	*
expected active political participation	*	*	*		*	*	*	*	*	*		*
equal rights for ethnic/racial groups											*	
equal rights for migrants				-				-				

(ii) students' active community involvement and students' opinion on civic attitudes and behaviours:

Civic attitudes and behaviours: …students' opinion on:	BE (fl)	BG	DK	FI	HR	IT	LT	LV	MT	NL	SE	SI
conventional citizenship					*							
social-movement-related citizenship	*		*	*	*			*	*	*	*	*
the importance of personal responsibility for citizenship	*		*									
trust civic institutions									-			
expected electoral participation									*	*		
expected active political participation			*								*	
equal rights for ethnic/racial groups										*		
equal rights for migrants			*									

Source: ICCS 2016, calculations by the European Commission's Joint Research Centre.
Note: Cells are empty when a statistically significant relationship was not found in the model. (*) = positive and statically significant relationship between one of the variables listed in the first column and `participation in democratic practices in school´ in the upper table *(i)* and `active community involvement´ in the table *(ii)*; (-) = negative and statistically significant relationship.

Experiencing democracy in the classroom could be further reinforced by the wider school community. A whole-school approach could integrate democracy into the everyday school experience, offering the opportunity for students to observe as well as to practise democracy in their school.

The ICCS study shows a clear possibility to increase European students' future civic engagement and openness by shaping policies that increase their participation in activities that serve the wider community. Presently, voluntary work is included in the citizenship curricula[23] of 8 Member States at ISCED 1 level, 9 Member States at ISCED 2 level and 12 Member States at ISCED 3 level[24].

Both civic knowledge and civic self-efficacy, i.e. the students' self-belief in undertaking various civic actions, have been shown to be important predictors of students' perceptions of democratic institutions. Students with better civic and citizenship knowledge tend to have a better understanding of civic life which might also imply more critical thinking and questioning of established institutions. As a result, the level of civic knowledge is only loosely, and in some cases even negatively, related to their expressed trust in democratic institutions.

[23] European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.
[24] ISCED = the International Standard Classification of Education.

Students' 'civic self-efficacy', correlates positively with their civic attitudes. Hence, educational systems that aim to improve students' civic attitudes have proven more effective when they foster their civic self-efficacy. As civic self-efficacy is also positively related to civic knowledge[25], policies that cater for that knowledge and the simultaneously improved self-efficacy have proven to be more effective.

Results of a public consultation[26] reveal what type of policy approaches, tools and methods respondents consider effective in promoting shared values and social inclusion. Respondents were mainly teachers in their individual capacity, but also representatives of an organisation, students, researchers, consultants and other individuals working in education. Almost 82 % of respondents considered 'offering citizenship education' the single most effective positive approach. Other approaches considered highly effective (from over 80 % of respondents) included 'promoting courses on culture and arts to enhance intercultural understanding' and 'using curricula that enhance knowledge and understanding of shared values'. Respondents also singled out the most effective practices that schools can promote, and listed some of practices analysed in this section — including 'promoting group work and critical thinking', 'creating a space for dialogue in the classroom on controversial issues to encourage self-reflection and mutual understanding'. At the level of the learning environment and the local communities, respondents rated highly 'creating opportunities for civic engagement and volunteering', and 'supporting a democratic learning environment to allow learners to experience democracy and mutual respect'.

1.1.3 The role of non-formal and informal learning in promoting citizenship competences

In a fast-changing world that is shaped by new technology and media, learning contexts and spaces have widened. Consequently, there is an increasing role of non-formal[27] and informal learning. Modern societies need to face challenges like integrating people with migrant background and combating social inequalities as well as economic uncertainty. Thus, education needs to cover broader areas that go beyond the traditional concept of schools and formal education. This is especially necessary for creating and encouraging democratic involvement in citizenship and activism in various forms, and to tackle societal challenges as they arise. This shift of education towards learning as participation and enabling an interconnection of learning experiences in a community-driven process is more personalised and collaborative and can be a means for addressing community needs[28].

Youth work is one of the main vehicles for non-formal and informal learning and a key instrument for developing young people's transversal skills[29]. Even though youth work is built on distinct national traditions and practices and varies widely across Europe, the learning processes taking place in youth work activities have recognisable common features. These are:

- learning by doing outside the formal school system;
- being dynamic, flexible and interdisciplinary;

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25 Isac, M. M., Maslowski, R., Creemers, B. and van der Werf, G. (2014). *The contribution of schooling to secondary-school students' citizenship outcomes across countries*. School Effectiveness and School Improvement, 25(1), 29-63.
Solhaug, T. (2006). Knowledge and Self-efficacy as Predictors of Political Participation and Civic Attitudes: with relevance for educational practice. *Policy Futures in Education*, volume 4, no. 3, p. 265.

26 European Commission (2018). *Commission Staff Working Document accompanying the Commission Proposal for a Council Recommendation on common values, inclusive education and the European dimension of teaching*.

27 Formal learning takes place within the organised systems of general education, initial vocational training or higher education and leads to a diploma. Non-formal learning takes place through planned activities (in terms of learning objectives, learning time) where some form of learning support is present. Informal learning means learning from daily work, family activities or leisure and is not organised. See Council of the EU (2012). *Recommendation on the validation of non-formal and informal learning* (2012/C398/01).

28 Norqvist, L., and Leffler, E. (2016). *Learning in non-formal education*. International Review of Education 63(6) March 2017.

29 Council of the EU (2014). *Conclusions of 20 May 2014 on promoting youth entrepreneurship to foster social inclusion of young people*, OJ C 183/18, 14.6.2014.

- taking place on a voluntary basis in real-life situations, through peer interactions and participatory approaches;
- applying individualised and enjoyable ways of learning;
- being accessible to all irrespective of their background and formal educational level; and
- with a youth worker playing the role of a coach or mentor, and designed to support young people's personal and social development[30].

Currently, in line with new challenges, this sector is evolving and redefining its mission and place in Europe's educational landscape and in society[31].

Across Europe, youth work is characterised by huge differences in opportunities, support structures, recognition and the realities in which it takes place. It may be part of either the public sector or the third sector, which covers a wide range of community, voluntary and not-for-profit activities. In many cases it is part of both[32].

Mirroring the heterogeneous nature of youth work, youth workers are characterised by great diversity. There are well-established youth work structures, mixed systems of youth work carried out by volunteers and paid youth workers, and youth work carried out exclusively by volunteers often under poor conditions[33]. Generally, youth workers are increasingly understood as constituting a distinct profession supported by formal minimum competence standards, training, recognition and validation of learning. In all cases, youth work is strongly mission-driven, with high motivation and job satisfaction[34].

For youth work to be of high quality, the following aspects are of crucial importance[35]:

- a relationship of trust between the youth workers and the young person;
- active outreach to young people in need of help and support;
- flexibility, accessibility and adapting to the needs of young people;
- learning opportunities, goal setting and recognition of achievements;
- safe, supportive environments enabling young people to experience life, to make mistakes and to participate with their peers in an enjoyable and fun setting;
- autonomy with young people driving their own development;

Thus, youth work helps young people to develop skills and competences in many areas, but also to strengthen their networks, change their behaviours and build positive relationships[36]. Youth work can thus empower young people in a supportive environment to make choices about their own lives as autonomous individuals, develop their own values and attitudes through critical thinking and become integrated members of society. In this respect, youth work is crucial for developing and supporting civic competences and plays a more explicit role in young people's lives. Cross-sectoral cooperation, including the private sector and community work are also key areas where youth work must take action[37]. While the diversity of youth work can be an asset, there is also a need to improve co-ordination and connections among the different stakeholders and institutions and to gradually overcome mechanisms and traditions that potentially limit its full development.

30 Expert Group on Youth Work Quality Systems in the EU Member States, 2015.
31 Tomi Kiilakoski (2015). Youth work and non-formal learning in Europe's education landscape. In: European Commission (2015). *Youth work and non-formal learning in Europe's education landscape. A quarter of century of EU cooperation for youth policy and practice*.
32 Schild, H., Connolly, N., Labadie, F., Vanhee, J. and Williamson, H. (2017). *Thinking seriously about youth work. And how to prepare people to do it*. A Council of Europe report.
33 Ibidem.
34 European Commission/DG EAC (2015). *Youth work and non-formal learning in Europe's education landscape. A quarter of century of EU cooperation for youth policy and practice*.
35 Dunne A., Ulicna, D., Murphy, I. and Golubeva, M. (2014). *Working with young people: the value of youth work in the European Union*. A report for the European Commission/DG EAC.
36 Ibidem.
37 Council of Europe (2015). *Declaration of the second European Youth Work Convention*.

In order to ensure social cohesion and to make sure everyone contributes to prosperity, it is vital for European societies to help all students reach their goals and become full members of European societies by making optimal use of formal, non-formal and information learning.

1.2 Good practices in citizenship education

Citizenship education has an unequivocal role in forging well-informed citizens and vibrant, cohesive societies. This chapter identifies good practices developed by Member States at all levels, from primary schools, to teachers' training, languages and the social dimension of higher education.

There are some good practices in the EU that can be shared among Member States. For example, in the Flemish community of Belgium, the 'Action plan on the prevention of the processes of radicalisation which may result in extremism and terrorism' has been in operation since 2015[38]. Among other issues, this action plan promotes intercultural dialogue and provides guidance for those who are confronted with radicalisation. In Italy, the 2015 school reform[39] emphasises, among other things, citizenship education — not only civic knowledge, but also skills, attitudes and values. In France, an action plan[40] dedicated to 'Equality and citizenship: The Republic in action' was published in 2015. Luxemburg has introduced a compulsory course on 'Life and Society' to strengthen intercultural understanding and respect. In the Netherlands, teachers were offered training[41] to help them manage classroom discussions on social issues related to democratic values.

Civic education is offered under many names and forms in different countries. Usually a civic competence course is added to the primary and secondary school curriculum or it is taught as part of a mainstream course such as history. In many countries, civic education is integrated into other compulsory subjects without being in the curriculum as a subject in its own right[42]. The recent national education reform in Spain removed the obligation to provide a compulsory separate subject in general education. The situation is the same in Cyprus, where the compulsory separate subject 'civics' is now covered by other subjects — history and modern Greek.

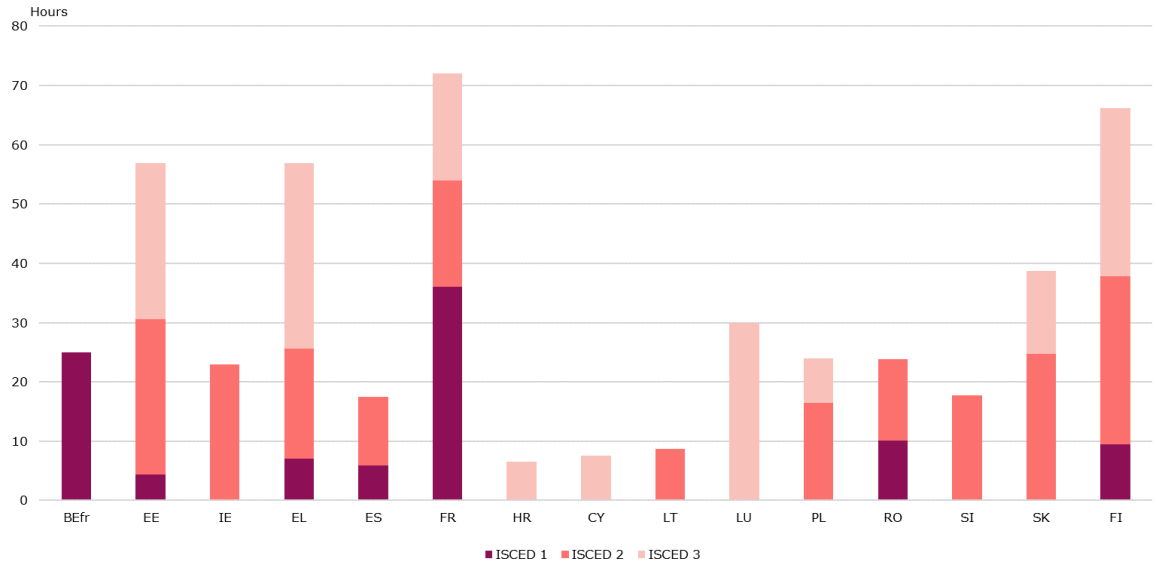
In France and Belgium, citizenship education is both integrated into other compulsory subjects and delivered as a separate subject. In Croatia, citizenship education is provided as a compulsory separate subject without being integrated into other compulsory subjects.

Of the 24 countries in ICCS 2016, only in 10 was civic education taught as a separate subject by teachers of subjects related to civic education. Only in seven countries was civic education a mandatory subject in specialist pre-service training for teachers[43].

The number of hours civics are taught per year as a compulsory subject vary widely between countries, e.g. 4.4 in Estonia against 36 in France at the primary level[44]. For a detailed account of the hours taught see Figure 5 based on the data of the Eurydice network.

[38] European Commission/EACEA/Eurydice (2016). *Promoting citizenship and the common values of freedom, tolerance and non-discrimination through education*: Overview of education policy developments in Europe following the Paris Declaration of 17 March 2015.
[39] Law 107 of 13 July 2015 (*Riforma del sistema nazionale di istruzione e formazione*).
[40] Égalité et citoyenneté: La République en actes.
[41] Methodiek Dialoog als burgerschaps-instrument.
[42] European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.
[43] Schulz, W., Ainley, J., Fraillon, J., Losito, B. and Agrusti, G. (2016). *IEA International Civic and Citizenship Education Study 2016 Assessment Framework*., Tables 2.6 and 2.10
[44] European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.

Figure 5 — Average recommended minimum number of hours of compulsory citizenship education as a separate subject per year at primary and general secondary education (ISCED 1-3) in 2016/17



Source: European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017.*
Note: The average recommended minimum number of hours per year of teaching of citizenship as a compulsory subject varies widely between countries, e.g. 4.4 in Estonia against 36 in France at the primary level.

The recent Council Recommendation on promoting common values[45], inclusive education, and the European dimension of teaching calls upon the Member States to:

- increase the sharing of the common values set out in Article 2 of the Treaty on European Union from an early age and at all levels and types of education and training in a lifelong perspective to strengthen social cohesion and a positive and inclusive common sense of belonging at local, regional, national and Union level;
- continue to implement the commitments of the Paris Declaration, notably through:
- promoting active citizenship and ethics education as well as an open classroom climate to foster tolerant and democratic attitudes and social, citizenship and intercultural competences;
- enhancing critical thinking and media literacy, particularly in the use of the internet and social media, so as to raise awareness of risks related to the reliability of information sources and to help exercise sound judgment;
- using existing or, where necessary, developing new structures that promote the active participation of teachers, parents, students and the wider community in schools;
- supporting opportunities for young people's democratic participation and an active, critically aware and responsible community engagement, and
- make effective use of existing tools to promote citizenship education, such as the Council of Europe's Competences for Democratic Culture framework.

The Recommendation was preceded by an extensive public consultation, which gathered as many as 1124 responses, with over 200 position papers from stakeholders among them. Almost all respondents (93.2 %) considered it important or very important for people to increase their understanding of the EU's and other countries' history, culture and values in order to fully understand their role as responsible and active members of European societies.

[45] Council of the EU (2018). *Recommendation on promoting common values*, inclusive education, and the European dimension of teaching of 22 May 2018.

The Eurydice Report on *Citizenship Education at School in Europe*, based on Citizenship Foundation elaboration[46], describes six characteristics of effective learning for citizenship education in the classroom.

- Active learning is an overarching approach that directly involves students, asking them to engage, participate and collaborate with others to think, act and reflect. It emphasises learning by doing.
- Interactive learning uses discussion and debate to offer students the opportunity to develop their understanding of others, their ability to express their views and their experience in negotiating conflicting opinions.
- Relevant learning is learning connected to real life and focusing on issues facing young people and society, including controversial issues which may be difficult to discuss. It enables peer-to-peer learning in diverse environments.
- Critical learning encourages young people to think for themselves, e.g. in the increasingly complex media environment (media literacy).
- Collaborative learning involves small heterogeneous groups where students work together towards shared goals to maximise their own and each other's learning, encouraging an openness to listen to, work with and learn from each other;
- Participative learning involves students acting as creators and directors of their own learning, while designing and delivering their own learning experiences, to address topics of their own interest.

These six characteristics form a guide to identifying excellence in citizenship education[47], and there are already a number of practices across European countries which successfully incorporate such learning at school. But more work is needed to deliver meaningful student-led learning experiences with student's involvement in the design of learning approaches as part of the curriculum[48].

According to the review of the implementation of the *Recommendation on Key Competences for lifelong learning*[49], pupil assessment at school was lagging behind the competence-based approach, which assesses a combination of knowledge, skills and attitudes close to real-life situations. In the light of a cross-national project carried out in eight European countries (Ireland, Italy, Hungary, the Netherlands, and the four parts of the UK) in 2009, most of those countries assess the cognitive dimensions (knowledge and understanding) more frequently than the active and affective dimensions (participation, skills, attitudes and behaviour)[50].

1.2.1 Training teachers in citizenship education

Across the EU and among other objectives, formal education has the purpose to promote the development of knowledge, skills and attitudes that support social and civic competences[51]. Europe's 6 million teachers can have a direct and significant impact on learners' attainment. This is why in May 2018 the Council of the EU invited all EU Member States to (among other things) provide support to educational staff for competence-oriented lifelong learning in education, training and learning settings. According to the Council Recommendation on promoting common values, inclusive education, and the European dimension of teaching, EU Member States also should enable teachers, school leaders and academic staff to promote

46 Citizenship Foundation (2006). *Citizenship education inquiry 2006*.
47 European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.
48 Ibidem.
49 European Commission (2009). *Communication on Key competences for a changing world*, COM (2009) 640 final.
50 Kerr et al. (2009). Pupil assessment in citizenship education: purposes, practices and possibilities. Report of a CIDREE Project. Cited in European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.
51 As a proxy, see the approaches to citizenship education in national curricula for primary and general secondary education (ISCED 1-3), 2016/2017, within European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.

active citizenship, common values, a sense of belonging and responding to the different needs of learners, and inclusive education[52].

According to the latest data[53], referring to the 2016/2017 school year, prospective teachers can specialise in citizenship education during initial teacher education in Belgium (French Community[54]), Denmark, UK (England), Ireland, Luxembourg and the Netherlands. In other countries (the Czech Republic, Estonia, Latvia, Lithuania, Austria, Poland and Slovakia), they can specialise in civic or citizenship education together with one or two other subjects, mainly history. At the time of the last survey (2010/2011), specialising in citizenship education at the level of initial teacher education was an option only in the UK (England).

Citizenship education programmes can also be part of continuing professional development (CPD). These programmes are designed for specialised, or semi-specialised, citizenship education teachers (Belgium (French Community), Ireland, Lithuania, and Slovakia) or teachers of humanities and social sciences (France, Italy and Malta). Teachers of other subjects can also undergo professional development in citizenship education in Ireland, Lithuania and Italy. In Belgium (Flemish Community), the Czech Republic, Germany, Greece, Spain, Croatia, Italy, Cyprus, Lithuania, Luxembourg, Hungary, Austria, Poland, Portugal, Slovenia and Sweden, all teachers in the area of citizenship education[55] are encouraged to participate. Finally, 14 education systems organise or support CPD to promote school heads' competence for implementing citizenship education in their schools (Bulgaria, Estonia, Ireland, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, the Netherlands, Austria, Poland and Slovenia).

The thematic focus of this type of CPD may include the following topics:

- co-existence in schools and active citizenship in the digital age;
- promoting respect and tolerance for gender diversity;
- conflict resolution;
- volunteering and active participation of students in solidarity projects;
- inclusive education, values education and global citizenship;
- cultivating empathy;
- applying anti-racist policies in schools;
- human relations and crisis management;
- human rights education;
- integrating migrant students into schools;
- legal education;
- counteracting hate speech;
- ethics education;
- human rights education;
- multi-culturalism in school practice;
- financial education;
- learning through entrepreneurial challenges; and
- education for peace.

The entire process of ensuring teachers have the necessary competences for teaching citizenship education at primary and secondary level can be regulated by the use of competence frameworks. This is the case in Belgium (German-speaking Community[56]), Denmark, Germany, Spain, France, Hungary, the Netherlands and the UK. Teachers' competency frameworks include these competences either by referring, more generically, to basic knowledge of and skills for citizenship education, or by:

- indicating the practice of being open, tolerant and respectful;
- reflecting on cultural identity and diversity;

52 Council of the EU (2018). *Recommendation on promoting common values, inclusive education, and the European dimension of teaching* of 22 May 2018.

53 European Commission/EACEA/Eurydice (2017). *Citizenship education at school in Europe, 2017*.

54 For the definition of the French Community aka Federation Wallonia-Brussels see here.

55 According to education systems, citizenship education can be taught by teachers specialised in history, political science, social sciences/sociology, philosophy, and so on.

56 European Commission/EACEA/Eurydice (2018). *Teaching Careers in Europe: Access, Progression and Support*, Annex 3

- knowledge of human and children's rights;
- promoting social critical thinking;
- creating learning spaces with attention to gender equality, equity and respect for human rights; and
- developing activities that help make the school a place for participation.

Figure 6 — Different uses of the teacher competence frameworks issued by top-level authorities, primary and general secondary education (ISCED 1-3), 2016/17

	ITE	Entering the profession			CDP		Other		
	Defining learning outcomes to be acquired by the end of ITE	Teacher accreditation/ licensing criteria	Selection/ recruitment criteria	Assessing teacher competences at the end of induction	Developing CPD programmes	Preparing individual teachers' CPD plans	Teacher appraisal/ evaluation criteria	Teacher promotion	Disciplinary procedures/ cases of serious misconduct
BE fr	●								
BE de	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
BE fl	●				●				
BG	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
CZ	●								
DK	●								
DE	●				●				
EE	●		●	●	●	●	●	●	
IE	●	●							●
EL	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
ES	●		●						
FR	●			●	●	●	●		
HR	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
IT	●			●	●	●			
CY	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
LV							●	●	(-)
LT	●				●	●		●	
LU	●			●					
HU	●			●			●	●	
MT	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
NL	●								
AT	●		●		●				
PL	●								
PT	●								
RO	●		●	●	●	●	●	●	●
SI	●	●							
SK	●								
FI	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
SE	●	●							
UK-ENG	●	●		●	●	●	●	●	
UK-WLS	●	●		●	●	●	●	●	
UK-NIR	●			●	●	●	●		
UK-SCT	●	●	●	●	●	●	●	●	●

Source: European Commission/EACEA/Eurydice (2018). *Teaching Careers in Europe: Access, Progression and Support*, Annex 3.
Note: '●': teacher competence frameworks are in use; '(-)': not applicable.

The use of competence frameworks can eventually lead to the identification of possible common elements and favour the mobility of teachers. A priority for the European Commission is

increasing mobility among both students and teachers (Erasmus+)[57], but also cooperation between teachers, including via virtual exchanges between schools (eTwinning)[58].

1.2.2 Higher education in the context of citizenship competence

The EU counts nearly 20 million tertiary students, enrolled in short-term programmes (ISCED 5), Bachelor's degrees (ISCED 6), Master's degrees (ISCED 7) and doctorates (ISCED 8)[59]. They study in higher education institutions (HEIs) that greatly vary in their activities, size and funding sources. More than 70 % of European students in short-term programmes, Bachelor's degrees and Master's degrees are enrolled in institutions offering a broad range of study programmes, proving that generalist institutions remain the core of the European higher education system. The remaining students are enrolled in focused or specialised institutions — the latter being typically producers of professionally-oriented higher education, sometimes developed to respond to specific market needs. About 60 % of higher education institutions in Europe are public; 27 % are private; and the remaining 12 % are private but government-dependent[60]. The rich panorama of higher education plays a crucial role in sustaining Europe's competitiveness and building a stronger and more democratic society.

Between 2007 and 2017, the rate of tertiary educational attainment in Europe grew by 25 % and reached the target set to be achieved by 2020, i.e. 40 % of the EU population holding a tertiary qualification. With more and more students enrolled and completing tertiary education, the relevance of this education sector is only increasing and expanding. The EU's strategy in higher education identified four priorities for action in the higher education sector: i) promoting skills excellence; ii) building inclusive and connected higher education systems; iii) ensuring higher education contributes to innovation; and iv) supporting efficient/effective systems[61]. However, back in 2007, the Council of Europe formulated objectives for higher education that also include preparing students for life as active citizens in democratic societies[62]. Meeting these objectives is meant to bring benefits to students, graduates, employers, the research community, and society at large.

Thus, in addition to a competitive advantage on the job market, higher levels of educational attainment have notably been associated with higher levels of civic engagement and active participation in society. Among tertiary education graduates (ISCED 5-8, 22.6 %) the proportion with a positive score on 'active citizenship' is significantly higher than among the population with upper secondary education (ISCED 3-4, 12.1 %) or lower secondary education (ISCED 0-2, 6.1 %)[63].

The following pages focus on the specific contribution of tertiary education to active civic participation and the internationalisation of this education sector.

When analysing the contribution of higher education to developing social and civic skills, two different approaches can be used. The first one focusses on the social dimension of higher education (widening access and increasing completion). The second one analyses the role of higher education in promoting civic, cultural and social competences.

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57 More information on the Erasmus+ website of the European Commission.

58 For more information on eTwinning, a programme engaging nearly 200 000 schools and 500 000 teachers, visit the dedicated European Commission website.

59 Online data code: educ_uoe_enrt03.

60 ETER brief 1. What ETER tells us about subject specialisation in European higher education.

61 European Commission (2017). *Communication on a renewed EU agenda for higher education*, COM(2017) 247 final.

62 Council of Europe (2007). *Recommendation 2007/6 On The Public Responsibility For Higher Education And Research*, An Explanatory Memorandum. The objective of preparing students for life as active citizens in democratic societies comes in the document among other critical objectives of higher education, including preparing students for sustainable employment; personal development; and developing and maintaining a broad, advanced knowledge base through teaching, learning and research.

63 Data on 'active citizenship' by educational attainment level (Eurostat, online data code: ilc_scp19).

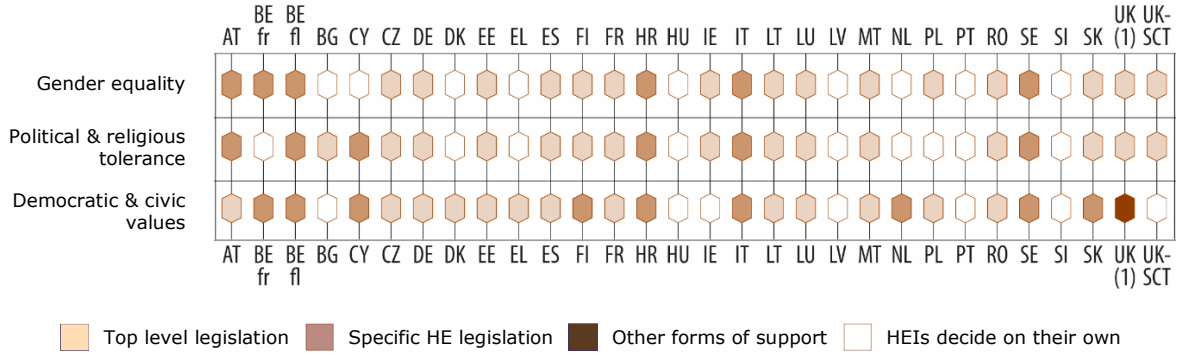
As for the latter, this may include updating curricula and teaching practices and implementing student-centred approaches to develop critical thinking, media literacy, political literacy and ethics. It may also include integrating community-based learning into programmes[64]. In particular, recent research on this latter aspect highlighted that 'integrating responsible research and innovation' ('RRI', i.e. where students work on real-life community problems as part of their research projects/thesis) can help graduates' capacity to solve societal problems and address sustainable development goals. At the same time, this type of responsible research and innovation enables Europe to better respond to urgent problems, by skilling up early-stage researchers in societal impact and helping to build an understanding of fact-based democracy among young people'[65]. Giving students the opportunity to gain intercultural competences and European values is also part of the same broad mission of tertiary education.

Five EU Member States have regulations directly concerning the promotion of active citizenship in tertiary education. In Ireland and the Netherlands, the role of higher education in educating students for active citizenship is explicitly addressed in higher education legislation. In Germany and Spain, this takes the form of a call to strengthen the participation of students in higher education governance. In France, it is about allowing for the validation by higher education institutions of the knowledge and competences acquired by students through non-academic activities that include citizenship involvement.

In almost half[66] of the EU Member States, top-level legislation offers support to higher education institutions promoting democratic and civic values (Austria, Czech Republic, Germany, Denmark, Estonia, Greece, Spain, France, Lithuania, Luxembourg, Malta, Poland and Romania). In Belgium, Cyprus, Finland, Croatia, Italy, the Netherlands, Sweden and Slovakia there is specific higher education legislation supporting institutions in the promotion of these values. In Bulgaria, Hungary, Ireland, Latvia, Portugal, Slovenia and the UK (Scotland) decisions on the promotion of active citizenship are left to higher education institutions themselves.

Overall, the extent to which higher education in the EU contributes to active citizenship is not monitored regularly[67]. This lack of indicators reflects limited policy attention to this role of higher education, and can also signal the lack of an explicit strategy behind it.

Figure 7 — Support for HEIs to promote gender equality, political and religious tolerance, and democratic and civic values



Source: European Commission/EACEA/Eurydice (2018). The European Higher Education Area in 2018: Bologna Process Implementation Report, page 45.
Note: UK (1) stands for UK-ENG/WLS/NIR.

64 European Commission/DG EAC (2018). *Promoting the Relevance of Higher Education: Trends, Approaches and Policy Levers* .

65 These were the findings of the EU/H2020 funded EnRRICH project *A living knowledge project*, with 12 academic partners coordinated by Vrije Universiteit Brussel.

66 European Commission/EACEA/Eurydice (2018). *The European Higher Education Area in 2018. A Bologna Process Implementation Report*.

67 European Commission (2018). *Promoting the Relevance of Higher Education: Trends, Approaches and Policy Levers*.

Part 2

Progress towards the ET2020 benchmarks

2 Progress towards the ET2020 benchmarks

Since the launch of the Lisbon strategy in 2000, indicators and benchmarks have been a valuable tool for policy making in the field of education and training in the EU.

Member States jointly agree on indicators for measuring and comparing their education systems, and on specific quantitative benchmarks that represent the goals they want to reach within a certain framework.

As every year, this part of the Monitor examines the EU Member States' progress towards the quantitative benchmarks for 2020 that were agreed within the strategic framework for European cooperation in education and training ('ET 2020')[68] in 2009. While significant disparities across and within EU Member States remain, two of the benchmarks have been reached *on average* across the EU by 2020[69]:

- tertiary educational attainment: benchmark: at least 40 %; 2017: 39.9 %;
- early childhood education and care: benchmark: at least 95 %; 2016: 95.5 %;

Two benchmarks can theoretically be reached by 2020 if the long-term trend continues:

- early leavers from education and training: benchmark: less than 10 %; 2017: 10.6 %. In order for the benchmark to be achieved, efforts need to continue to move the share of early leavers from education and training to below 10 %;
- employment of recent graduates: benchmark: 82 % of recent graduates; 2017: 80.2 %. Here, too, it is important to uphold efforts to actually reach this benchmark.

On one benchmark, 'underachievement in reading, maths and science', there has been a recent setback (less than 15 % each; 2015: 19.7 % reading; 22.2 % mathematics; 20.6 % science). Regarding 'adult participation in learning' (at least 15 %; 2017: 10.9 %), the EU is still far away from its goal.

Since these are EU averages, it is important to look at the situation in the 28 individual Member States, both for all benchmarks and for different population groups. The following pages offer a first analysis that can provide the necessary insights for systematic and targeted education policy.

Failing to meet the education and training benchmarks may hamper the EU's capacity to build a resilient economy and achieve social cohesion. It is in this context that EU Leaders proclaimed in 2017 the European Pillar of Social Rights, as a guide towards upwards employment and social convergence, and towards promoting better opportunities for youth in Europe. The very first principle of the Social Pillar identifies inclusiveness and relevance of education as a key element to impact on people's lives and enable to support the European construction in the 21st century. The other main challenge in education and training, identified by policy action at the EU level, is to enable Europe to remain a continent of excellence, an attractive place to study, to carry out research and to work. For this to happen, several important initiatives have been set in motions, catering in particular for a stronger support to mobility of students and educational staff, and the promotion of the transnational cooperation in higher education.

The systematic monitoring of progress towards the ET2020 benchmarks over the past 8 years has provided important information about the impact of policies.

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[68] The ET 2020 framework of 12 May 2009. The 7th officially adopted benchmark is on learning mobility, on which reporting has not been possible due to lack of data until this year (see section 2.7). An 8th benchmark on foreign languages has not been adopted.

[69] Despite the anticipated departure of the UK, with the third largest population among EU Member States, the EU-27 averages in those six domains are likely to remain on their current paths.

Since the ET2020 framework has proven to be a functioning instrument for enhancing policy reforms around the areas monitored, several relevant conclusions have recently emerged in discussions among EU government representatives regarding requirements for a post-2020 monitoring framework. These are as follows.

- It is important to recognise that some areas that are highly important from a political viewpoint (e.g. the role of teachers) remain difficult to capture by a quantitative benchmark. Thus, not all areas are equally policy-relevant and not all areas are benchmarkable; in this context, qualitative reporting, as conducted by Eurydice, and structural indicators are very valuable;
- Several ET2020 indicators and benchmarks are very valuable and could
- be continued (early leavers from education and training, tertiary educational attainment, early childhood education and care, underachievers and adult participation in learning);
- Areas that were singled out for further work on indicator development include: learning mobility (with data now available); digital competences; entrepreneurship education; vocational education and training (VET);
- It is important to report on equity aspects (gender, social/migrant background, regional aspects) as far as possible for every indicator/benchmark.
- For optimal policy relevance, the number of benchmarks could be kept below 10;
- Transparency in the process and participation of Member States in establishing and monitoring indicators and benchmarks is vital for creating ownership of the framework by the Member States.

In the global setting of the monitoring process under the UN 2030 Agenda for Sustainable Development and its global education goal (SDG 4), the EU model of jointly developing and monitoring indicators and benchmarks is deemed unique and exemplary: the SDG-4 Steering Committee refers to the ET2020 framework as a model and recently encouraged regional bodies on other continents to develop similar approaches. Hence, reflections on future EU indicators and benchmarks could take into consideration the existing body of experience as well as the international context of the EU commitments to SDGs.

2.1 Early leavers from education and training (ELET)

Key findings

Early leavers from education and training[70] stood at 10.6 % in 2017 (the target is 10 %).

The share of early leavers from education and training continues to decrease, so there is a theoretical chance to reach the benchmark in 2020. However, a closer look at individual Member States shows that there are still regions and groups of people who are far from reaching the goal.

While in the EU on average women have reached the benchmark, the situation is more difficult for men even if a considerable share of them are employed. It is also more challenging in southern and south-eastern countries and for people with a migrant background. In addition, in most cases, people in rural areas fare worse than those in urban areas.

[70] The indicator covers 18-24 year olds with ISCED 2 at most lower secondary educational attainment (ISCED 2) and who are no longer in formal or non-forma education and training. The terms 'early leaving from education and training' (ELET) which is the formal name of the indicator and the shorter 'early school leaving' (ESL) are used interchangeably in this document.

2.1.1 ELET target — development over time

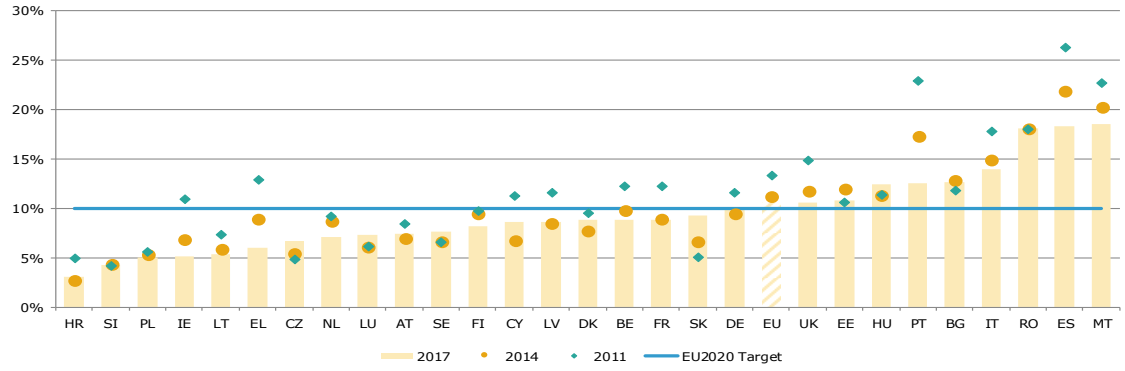
Europe depends on a highly qualified workforce to sustain high levels of innovation and productivity. At the same time, higher levels of education are associated with a range of personal benefits for individuals, such as more rewarding jobs, higher income, better health and better social networks[71]. Conversely, early school leaving is linked to unemployment, social exclusion, poverty and poor health. Thus, it is in the interest of societies as a whole, as well as individuals themselves, to make sure that everyone completes education and training. In addition, it is important and in line with the European Pillar of Social Rights that all members of European societies have quality education and equal opportunities and thus complete their education and training.

Since the establishment of this benchmark, the European Commission, in cooperation with the EU Member States, has implemented a multitude of measures and activities to support Member States in their efforts to reduce the share of ELET. These concerted efforts have led to the remarkable success that can be seen in all EU Member States, but especially in those which had particularly high shares of low achievers at the outset of the strategy.

Figure 8 shows the situation at three different points in time: 2011, 2014 and 2017. Overall, across the EU, the average share of early leavers from education and training decreased from 13.4 % in 2011 to 10.6 % in 2017, which in turn was marginally lower than the 10.7 % in 2016. With 3 years to reach the 10 % target in 2020, the EU is well on track to do so.
Eighteen countries have already reached the benchmark (Croatia, Slovenia, Poland, Ireland, Lithuania, Greece, the Czech Republic, the Netherlands, Luxembourg, Austria, Sweden, Finland, Latvia, Cyprus, Denmark, Belgium, France and Slovakia), Germany (10.1 %), the UK (10.6 %) and Estonia (10.8 %) are very close to reaching it. In addition, both Ireland and Greece have been able to further reduce their ELET shares to well below the benchmark, by 5.9 and 6.9 pps respectively. Malta (18.6 %), Spain (18.3 %) and Romania (18.1 %) are still struggling to reduce ELET, although Malta has reduced its share of ELET by 4.1 pps since 2011 and Spain's ELET shares, as already mentioned, have fallen by 8 pps since 2011. At the high end of the shares, it is only in of Romania that no change can be seen across the years.

It is important to note that some countries have made remarkable progress over the years, especially Spain and Portugal (both of which had rates over 23 % in 2011). However, at the EU aggregate level, in comparison to rates in the previous year[72], the situation has not changed considerably. The only country where a sizeable upward trend can be observed is Slovakia, at 4.2 pps higher than in 2011, although it still remains below the benchmark in 2017.

Figure 8 — Early leavers from education and training, 2011-2017



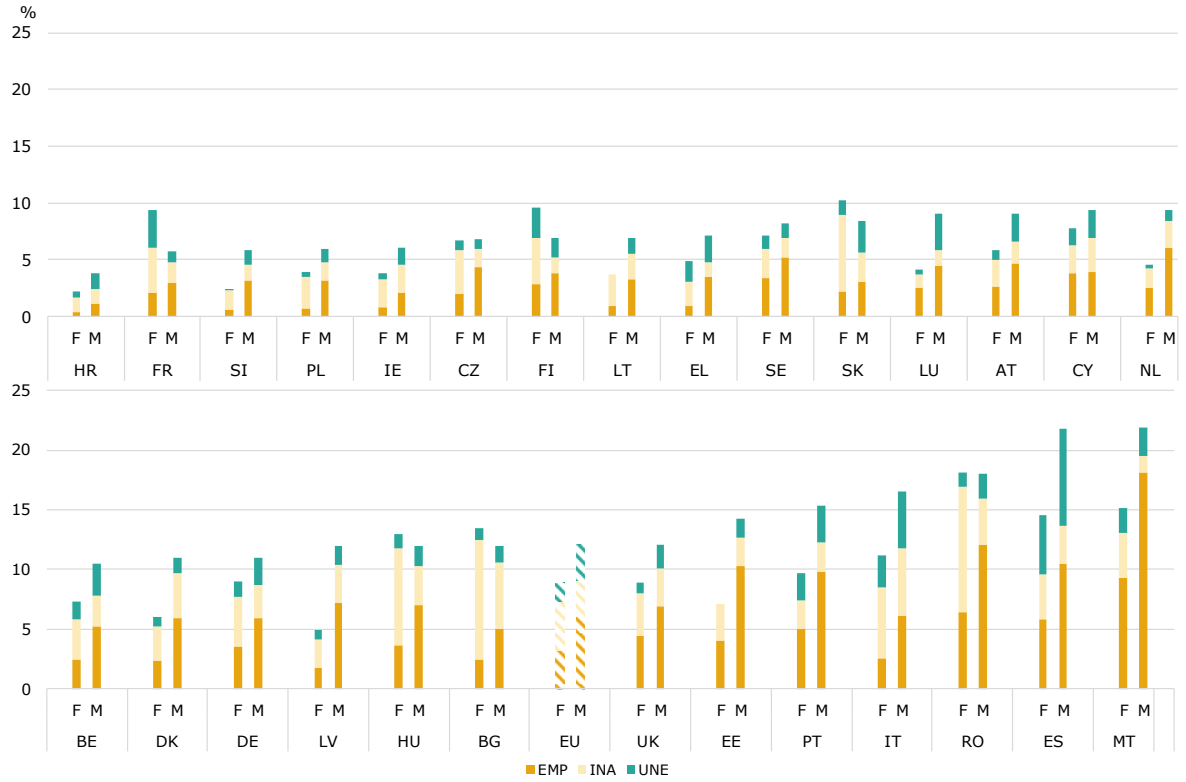
Source: EU Labour Force Survey, Eurostat, 2011-2017, online data code: [edat_lfse_14].
Note: break in time series in LU (2009 and 2015), FR (2013) and EE (2013).

[71] European Commission (2017). *Education and Training Monitor 2017*, Chapter 1.
[72] Ibidem, Chapter 2.2.

2.1.2 ELET by employment status

While early leavers from education and training have not attained upper secondary education, and thus an educational level that is deemed crucial in modern societies, this does not mean that they are not employed (unlike 'young people who are not in education, employment or training'). There are thus considerable shares of ELETs who, despite their low levels of general education, are gainfully employed. In the EU overall, among the 10.6 % of ELETs overall, 44 % — are employed, 34 % are inactive and 22 % are unemployed.

Figure 9 — Early leavers from education and training by employment status and gender, 2017



Source: EU Labour Force Survey, Eurostat, special data extraction, 2017.

The share of employed ELETs (75 %) is highest in Malta, which is also the Member State with the highest share of ELETs overall. It seems that the Maltese labour market offers opportunities for people with low educational attainment — especially for men, where the share of employed ELETs is even higher (83 %). This is quite different from Spain, where less than half of ELETs are employed and a considerable share is unemployed. The situation is different again in Romania, where a large share of ELETs is employed and another large group is inactive, with women comprising a high proportion of the latter.

Even in countries with low overall rates of early leavers from education and training, the share of employed people is higher among men than women. This means that the higher ELET rates for men do not automatically translate into worse employment outcomes for them. Given the future labour market needs for a highly skilled workforce, it is important that all EU Member States tackle early leaving from education and training and ensure that their young population completes education and training.

2.1.3 ELET disparities within Member States

Given the consistently positive development of this indicator since the introduction of the benchmark, it is important to look at specific groups and areas where further improvement is

still necessary. Figure 10 gives an overview of the situation for men and women and a differentiated look at people based on where they were born.

Figure 10 — Early leavers from education and training (18-24 years) by gender and country of birth, 2017 (%)

	Total	Men	Women	Native-born	Foreign Born		
					Born in the EU	*Born outside the EU*	*Total foreign born*
EU	**10.6**	**12.1**	**8.9**	**9.6**	**19.2**	**19.3**	**19.4**
BE	8.9	10.4	7.3	7.9	15.9	16.7	16.4
BG	12.7	12	13.5	12.8	:	: u	: u
CZ	6.7	6.8	6.7	6.7	7.9 u	11.0 u	9.5 u
DK	8.8	11.3	6.2	8.8	: u	11.8 u	9.3 u
DE	10.1	11.1	9.0	8.1	25.2	21.8	23.1
EE	10.8	14.2	7.3	10.9	: u	: u	: u
IE	5.1	6.2	3.9	5.3	5.1 u	: u	4.0 u
EL	6.0	7.1	4.9	5.4	20.0u	16.0	16.9
ES	18.3	21.8	14.5	15.6	38.3	30.0	31.9
FR	8.9	10.5	7.2	8.3	16.7	15.2	15.5
HR	3.1	3.8 u	2.2 u	3.1 u	: u	: u	: u
IT	14	16.6	11.2	12.0	27.7	30.9	30.1
CY	8.6	9.4	7.8	5.7	17.6 u	18.5	18.1
LV	8.6	12.0	5.0	8.6	:	: u	: u
LT	5.4	7.0	: u	5.4	:	: u	: u
LU	7.3	9.8	4.6 u	6.8	6.4 u	: u	8.2 u
HU	12.5	12.0	13.0	12.5	: u	: u	: u
MT	18.6	21.9	15.1	18.4	: u	: u	: u
NL	7.1	9.4	4.6	7.1	5.4u	7.1	6.6
AT	7.4	9.0	5.8	5.3	12.9 u	22.0	18.4
PL	5.0	6.0	3.9	5.0	: u	: u	: u
PT	12.6	15.3	9.7	12.5	: u	12.0	13.9
RO	18.1	18.0	18.1	18.1	:	:	:
SI	4.3	5.8	2.5u	4.2	:u	:u	: u
SK	9.3	8.5	10.3	9.3	:u	:	: u
FI	8.2	9.5	6.9	7.9	:u	:u	15.2u
SE	7.7	8.2	7.2	6.2	10.4	16.5	15.5
UK	10.6	12.1	9.0	10.8	13.1	6.6	9.5

Source: Eurostat, EU Labour Force Survey 2017. Online data code: [edat_lfse_14] and [edat_lfse_02].
Note: 'u' = low reliability due to small sample size; ':' = data either not available or not reliable due to very small sample size;

In 2017, men reached the benchmark in 14 Member States and women reached it in 21. While there are fewer than 20 % of female early school leavers in all Member States, the rates for men are higher in most Member States and reach shares of almost 22 % (in Malta and Spain). The rate of female early leavers from education and training is generally lower than the rate of male early leavers, except in Slovakia (1.8 pps higher), Bulgaria (1.5 pps higher) and Hungary (1 percentage point (p.p.) higher). The gender gap is particularly pronounced (more than 5 pps) in Denmark, Luxembourg, Italy, Portugal, Malta, Estonia, Latvia and Spain (from the smallest gap to the largest).

Another relevant distinction between different groups of people is whether they have a migrant background. As shown in other parts of this Monitor, students with a migrant background face greater difficulties in the education system and in society more generally. This is related to first-hand experience of the challenges of migration: the need to acquire new skills, especially the language of the host country, as well as lack of familiarity with the new society and its institutions and — in some cases — the traumatic experiences that led to migration. But this is also linked to the general economic and social situation of people with a migrant background,

who in many cases have a lower socioeconomic status and lower levels of education, which also affects their children. Thus, the proportions of early school leavers are much lower among native-born people than among those born abroad. While the ELET rate among the native-born in 2017 was 9.6 % — below the benchmark and lower than the 12.3 % in 2011 — the rate was twice as high among foreign-born people in the EU-28. This doubled prevalence occurs in equal measure whether foreign-born people were born in another EU Member State or outside the EU.

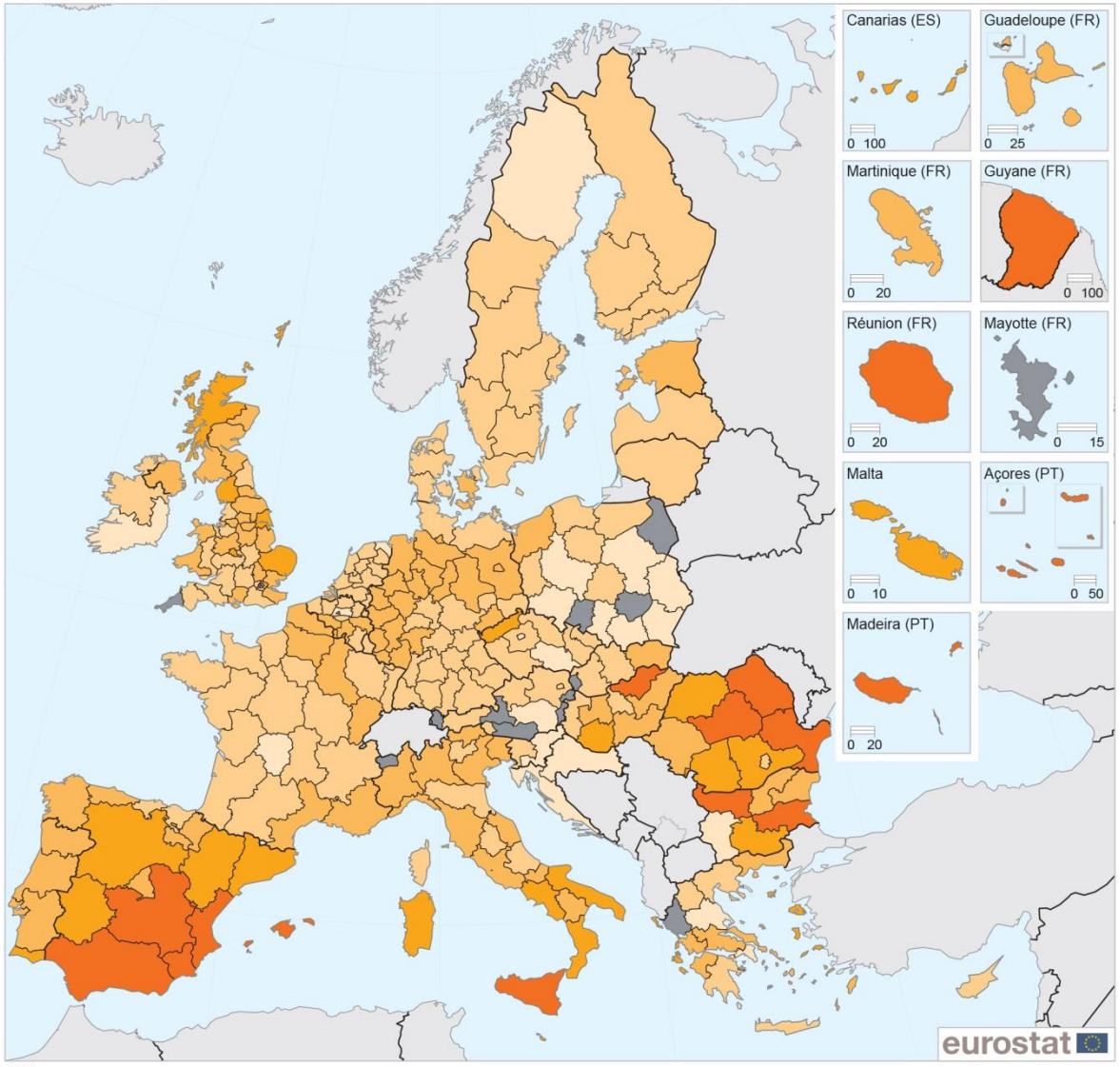
Rates of foreign-born early leavers from education and training are particularly low in Ireland, Luxembourg and the Netherlands — all well below the 10 % benchmark — while they are extremely high in Spain (31.9 %) and in Italy (30.1 %). Spain is the Member State with the highest gap (8.3 pps) between the ELET rate of the *foreign-born within the EU* (38.3 %) and *the foreign-born outside the EU* (30.8 %).

Shares of above 20 % for all (EU and non-EU) foreign-born 18-24-year olds can also be found in Germany, where EU-born persons also fare worse (25.2 %) than those born outside the EU (21.8 %). The reverse is the case in Austria, where *the foreign-born within the EU* have an ELET rate of 12.9 %, which is almost 10 pps lower than for non-EU-born persons (22.0 %).

This shows a very diverse picture of the situation of the foreign-born (born in the EU and outside the EU) in different EU Member States. This probably closely reflects the origins of the immigrant population in the different host countries, which can be quite diverse. The relative performance of foreign-born compared with native-born people also depends on the initial socioeconomic status of migrants and their integration potential.

In addition to the differences in immigrant background, there are also considerable differences among early leavers from education and training in regions within EU Member States (see Figure 11).

Figure 11 — Early leavers from education and training (18-24 years) by NUTS 2 regions, 2017 (%)



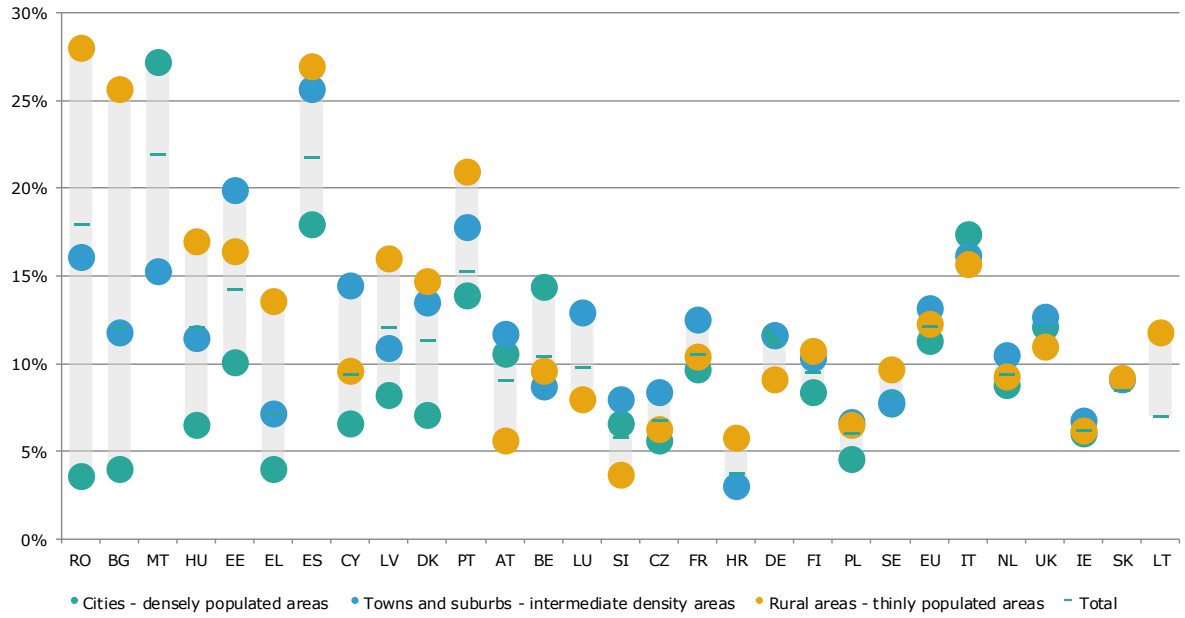
Source: Eurostat, EU Labour Force Survey, 2017, online data code: [edat_lfse_16].
Note: Oberpfalz (DE23), Trier (DEB2), Thessalia (EL61), Corsica (FR83), Madeira (PT30) and Highlands and Islands (UKM16): 2016. Prov. Luxembourg (BE34), Chemnitz (DED4), Dytiki Makedonia (EL53) and Cumbria (UKD1). Prov. Wallon Brabant (BE31): 2014. Low reliability for BE22, BE24, BG32, CZ01, EL64, EL65, EL41, EL42, ES13, ES22, ES23, ES63, ES64, FR43, FR53, FR63, FR72, FR83, FRA1,FRA2,FRA3, AT22, AT33, PL11, PL12, PL21, PL22, PL31, PL32, PL41, PL42, PL43, PL51, PL61, PL62, PL63, RO32, SI03, SI04, UKD6, UKE2, UKI7, UKI6, UKL2, UKM5. See here for a full detailed list of the European NUTS2 regions.

Regional disparities in ELET are very apparent in southern and south-eastern EU Member States. Rates are above 20 % in southern Spain; Mallorca; Sicily; the Azores and Madeira in

Portugal; rural regions in Romania, Bulgaria and Hungary; and Réunion. But all the Member States to which these regions belong have other regions with lower ELET rates — some even below 10 %. Thus, in these countries regional disparities are very pronounced and it seems that the situation is especially difficult for young people living on islands. Regional differences are less pronounced in continental and northern European countries.

In addition to looking at geographical regions, there are interesting insights to be gained from the differentiating between areas according to their degree of urbanisation[73]. Given that such differentiation is especially pronounced among men[74], Figure 12 looks at the differences in ELET for men in cities, towns and suburbs, and rural areas.

Figure 12 — Urban-rural divide in early leavers from education and training (18-24 years) — men only, 2017 (%)



Source: EU Labour Force Survey, Eurostat, online data code [edat_lfse_30], ranking by size of urban-rural gap.
Note: Data is not available for cities for LU, HR, SK and LT; for towns and suburbs for LT; and for rural areas for MT due to low data reliability.

There are some countries where there are no great differences between rural and urban areas with regard to ELET among men. However, it is striking that there are stark differences between urban and rural regions in some countries with particularly high overall ELET rates, such as Romania. It is interesting to note that a country with consistently high rates of ELET, Romania, has very low ELET rates among men in cities, with less than 5 %. This is comparable to Bulgaria and Greece and lower than in all other cities across the EU. This means that specific actions are needed to increase the education levels of young men (and, to a lesser extent, young women) in rural areas of Romania, Bulgaria, Hungary and Greece.

[73] The degree of urbanisation classifies local administrative units (at LAU 2 level) as cities, towns and suburbs, or rural areas, based on a combination of geographical contiguity and minimum population thresholds applied to 1 km² population grid cells. The categories are defined as follows: Cities (alternative name: densely-populated areas), at least 50 % of the population lives in an urban centre; Towns and suburbs (alternative name: intermediate density areas), less than 50 % lives in an urban centre but more than 50 % of the population lives in an urban cluster; Rural areas (alternative name: thinly populated areas), more than 50 % of the population lives in rural grid cells. More details on the methodology.

[74] For differences for men and women, see 2017 Education and Training Monitor; the situation has not changed considerably since then.

These results show the need to increase educational opportunities for young people and especially men in rural areas and in the south-east of Europe. Overall, it can be noted that it is important to differentiate between the situations in the different EU Member States and that dedicated steps are needed to address the specific groups (for example the Roma) that are affected by early leaving from education and training in the particular context of each country.

The Eurydice report *Structural Indicators for Monitoring Education and Training Systems in Europe 2018*[75] gives a detailed overview of activities that are taking place in European countries to support achieving the ET2020 benchmarks. To reduce ELET rates (see Figure 70 and Figure 71 in the Annex to this Monitor), European countries are pursuing a range of activities. All but one have policies to provide language support for students with a different mother tongue. Almost all countries collect data on ELET based on a student register, provide alternative education and training pathways and facilitate transitions, offer education and career guidance in schools, and have policies to help early leavers re-enter the education and training system. Fewer countries support policies to recognise skills and qualifications and to include early school leaving in teacher training.

2.2 Tertiary educational attainment (TEA)

Key findings

The EU 'tertiary attainment' target of 40 % is about to be met. 39.9 % of the population aged 30-34 holds a tertiary degree.

On average in Europe, tertiary attainment is 10 pps lower for men than for women and 5.5 pps lower for the 30-34 year-olds born outside the EU than for those born in the EU.

Country averages often mask wide regional variations. For example, tertiary attainment can be below 30 % in some regions of France and the Netherlands but about 60 % in other regions of the same two countries.

2.2.1 Tertiary educational attainment

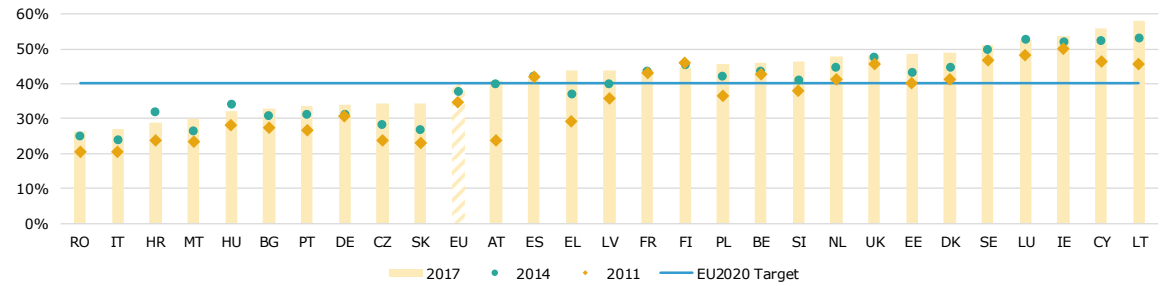
Tertiary education plays a crucial role in economic growth and social progress. Tertiary education systems drive research and innovation that fosters positive economic and social change at the local, regional, and national levels.

Graduating from tertiary education has become increasingly important all around Europe as the skills needed in the work place became more knowledge-based. People's capacity to adapt to a rapidly changing economy is associated with higher levels of education, making tertiary education even more important.

In the EU, currently 39.9 % of people aged 30-34 hold a tertiary degree. The EU has thus effectively reached the 40 % target set by the Europe 2020 strategy to promote economic growth and employment, although the gender differences are still high. On average in the EU, the tertiary educational attainment rate has been gradually increasing in the last several years. As shown in Figure 13, however, 10 Member States still have tertiary educational attainment rates below the EU target.

[75] For definitions and further country information see European Commission/EACEA/Eurydice (2016). Structural Indicators for Monitoring Education and Training Systems in Europe 2016.

Figure 13 — Tertiary educational attainment 2011, 2014, 2017

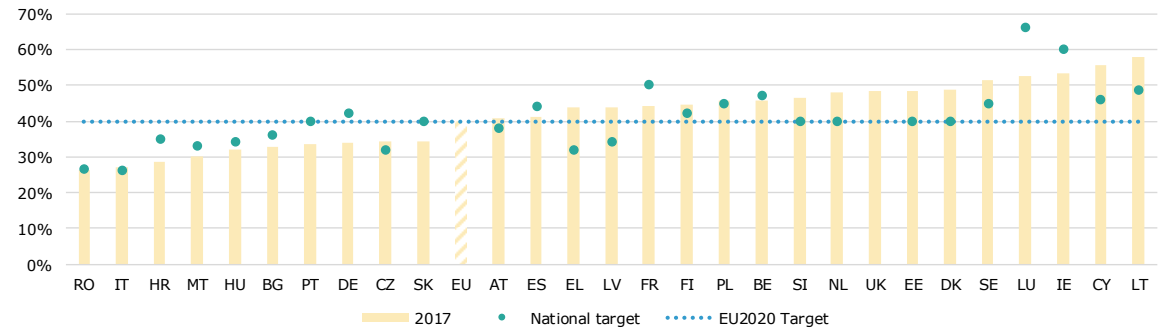


Source: EU Labour Force Survey, Eurostat, online data code [edat_lfse_03].
Note: The indicators cover the share of the total population aged 30-34 having successfully completed tertiary education (ISCED 5-8). Break in series for all countries in 2014 due to the introduction of the new ISCED 2011 classification; LU: 2017 data unreliable because of small sample size.

In most EU Member States tertiary educational attainment grew in comparison to 2014 and 2011. The exceptions were Croatia, Hungary, and, to a lesser extent, Spain and Finland, where the proportion of the population with a tertiary qualification decreased between 2014 and 2017 — even if the two latter countries both have TEA rates above the EU target of 40 %. By contrast, in the same period there was remarkable growth (higher than 6 pps) in the Czech Republic, Greece and Slovakia. However, neither the Czech Republic nor Slovakia has met the 40 % target yet.

Among the countries that have tertiary attainment rates below 40 %, only Romania, Italy and Croatia (in ascending order) have not reached 30 %. Nonetheless, in this group of countries, the share of people with tertiary education increased between 2011 and 2014 and again between 2014 and 2017. Thirteen countries have tertiary education attainment rates between 40 % and 50 %, and, at the upper end of the spectrum, Sweden, Luxembourg, Ireland and Cyprus (in ascending order) are above 50 %. The rate in Lithuania increased from 2011 to 2014, and again from 2014 to 2017, reaching the record value of 58.0 % in the latest reference year. Across Europe, after a period of divergence, Member States' tertiary attainment rates have started to converge on the ET2020 target.

Figure 14 — Tertiary educational attainment (30-34 years) National and EU targets, 2017



Source: EU Labour Force Survey, Eurostat, online data code [edat_lfse_03].
Note: the UK has no national target. The national target for DE includes post-secondary non-tertiary education (ISCED level 4) which is however not included in the [edat_lfse_03] data. For FR, the 50 % national target refers to the age group 17-33. For FI, the national target excludes technological institutes. LU: data is unreliable because of high non-response.

Under their national reform programmes EU Member States have established their own national targets for increasing the share of the population completing higher education. The only exception is the UK, which has set no national target. Ten national targets are below the EU target of 40 % and 17 are the same or higher.

France, Ireland and Luxembourg have national targets of 50 % or above which they have not yet met. Finland, Sweden, Cyprus and Lithuania have targets of above 40 % which they have met. Within the group of Member States that have set a national target below the EU target, six countries have met it (Italy, the Czech Republic, Austria, Greece and Latvia) while four have not (Croatia, Malta, Hungary and Bulgaria). Overall, 15 of the 28 Member States reached their national target in 2017.

2.2.2 Gaps within countries

This section presents tertiary educational attainment by gender and migrant status for the same age group considered above (30-34). It also plots and describes attainment rates at the regional level across the EU.

Participation in higher education continues to increase in Europe, for both women and men. However, ever since 2002, the proportion of women holding a tertiary degree has been higher than the proportion of men with similar qualifications — and the gap has increased over the past 15 years. In 2017, 44.9 % of women, and only 34.9 % of men, held a tertiary education qualification. The differences are particularly striking in Latvia, Lithuania, and Slovenia, where the tertiary attainment of women can be up to 20 pps higher than that of men.

In most of Member States, the share of those with a tertiary qualification born within the country or within the EU is higher than the share of graduates born outside the EU. Across the EU, tertiary educational attainment is about 0.6 pps lower for those born outside the country but within the EU and about 6.1 pps lower for those born outside the EU. On the other hand, in a number of countries, the percentage of the foreign-born population with tertiary education is higher than of the native one; this happens in Czech Republic, Denmark, Ireland, Latvia, Luxembourg and the UK. Except the Czech Republic, in these countries even the population born outside the EU has a tertiary attainment rate that is higher than that of the native population. In Greece, Italy, and Slovenia, the share of the foreign-born population with a tertiary qualification is about half or less of the share of the native-born. Differences between these two groups are remarkable in Spain and Finland too.

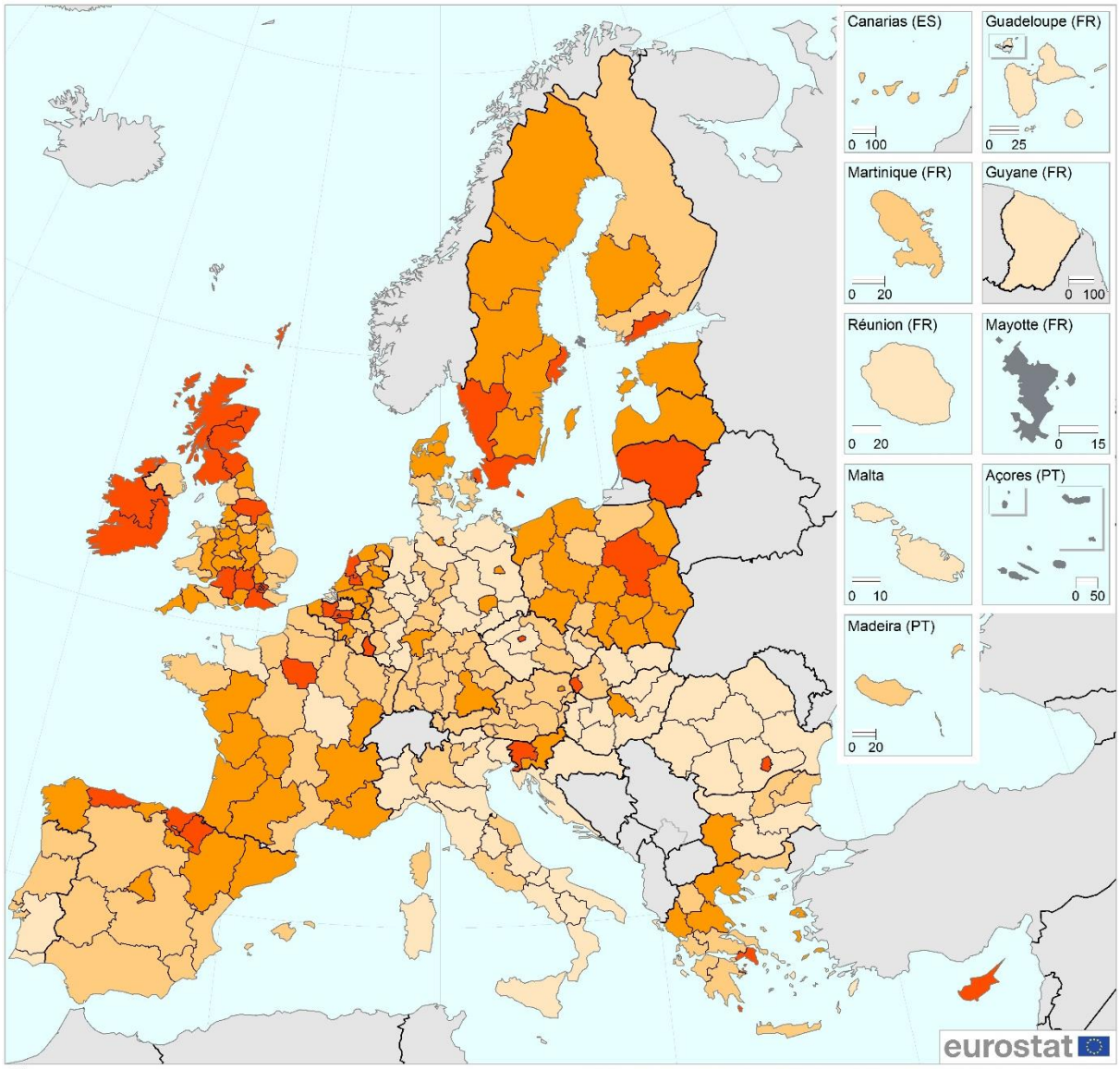
Figure 15 — Tertiary educational attainment (aged 30-34) by gender and country of birth, 2017 (%)

	Total	Men	Women	Native-born	Foreign Born		
					Born in the EU	*Born outside the EU*	*Total foreign born*
EU	**39.9**	**34.9**	**44.9**	**40.6**	**40.0**	**34.5**	**36.3**
BE	45.9	40.8	50.9	48.8	50.6	29.5	37.6
BG	32.8	25.5	40.5	32.6	:c	:u	:u
CZ	34.2	27.7	41.0	33.9	46.8	28.9	39.1
DK	48.8	41.1	56.7	46.6	69.7	52.6	58.1
DE	34.0	33.8	34.2	34.4	36.2	31.1	32.8
EE	48.4	41.6	55.6	48.1	:u	52.0u	52.4
IE	53.5	47.5	58.9	52.1	50.8	68	56.6
EL	43.7	37.0	50.5	47.1	27.2u	9.8	11.9
ES	41.2	34.8	47.5	45.6	34.0	23.2	26.2
FR	44.3	38.7	49.6	45.4	46.9	36.2	38.1
HR	28.7	22.1	35.4	29.5	41.8u	19.4u	21.5u
IT	26.9	19.8	34.1	30.6	12.7	12.8	12.8
CY	55.8	47.2	63.5	64.3	45.5	36.2	40.5
LV	43.8	32.1	56.0	43.2	80.6u	47.8	56.9
LT	58.0	47.6	68.1	57.8	:u	:u	:u
LU	52.7	49.8	55.6	49.1	54.8	58.9	55.6
HU	32.1	27.0	37.5	32.3	:u	:u	24.8u
MT	30.0	28.0	32.2	29.4	36.5u	36.9u	36.8
NL	47.9	44.0	51.8	50.7	41.8	32.2	34.6
AT	40.8	37.7	44.0	42.5	47.1	28.4	36.8
PL	45.7	36.3	55.5	45.6	:u	63.4u	62.1u
PT	33.5	26.2	40.4	33.5	39.3	29.5	32.6
RO	26.3	23.9	28.9	26.3	:	:u	:u
SI	46.4	34.7	58.8	49.3	49.9u	21.1u	24.1u
SK	34.3	26.7	42.4	34.3	:c	:u	:u
FI	44.6	37.3	52.0	46.7	27.5u	26.9	27.1
SE	51.3	44.6	58.4	51.5	69.1	46.5	51.2
UK	48.3	45.8	50.8	45.9	46.9	61.2	54.7

Source: Eurostat, EU Labour Force Survey, online data code [edat_lfs_9912].
Note: 'u' = low reliability, ':' = data either not available or not reliable due to very small sample size, 'c' = confidential.

The marked variation in tertiary educational attainment rates of the foreign-born population may be due to different labour migration or learning mobility patterns. For example, the high educational attainment rate for foreign–born population in the UK may very well be due to the fact that most of people who moved to the UK to study decide to stay after their degree because of good employment opportunities. Geographical factors also contribute to the higher qualification levels in the foreign–born population than in the native–born population. This is the case in Poland and Estonia, countries which attract highly qualified migrants from outside the EU due to the characteristics of their labour market and their geographical position. In the case of Luxembourg, the high educational attainment rate of the foreign born population may be linked to labour market dynamics.

Figure 16 — Tertiary education attainment (30-34 years) by NUTS 2 regions, 2017 (%)



Source: EU Labour Force Survey, Eurostat 2017, online data code: [edat_lfse_12]. Low reliability for EL62, ES63, ES64, FR83, FRA1, FRA2, FRA3, ITC2, UKD1, UKM6. See here for a full detailed list of the European NUTS2 regions.

In addition to variation among different socio-demographic groups, there are important regional variations in the proportion of the population with tertiary educational attainment. Often different tertiary educational attainment rates reflect differences between rural and urban areas — the latter being where higher education institutions and higher education students concentrate. This is particularly evident in Slovakia, Hungary, the Czech Republic, Poland and

even Romania, where tertiary educational attainment is higher in the capital region and the differences with other regions is considerable. Regional differences in tertiary educational attainment rates are also striking in France and the Netherlands. Within these two countries, there are regions where less than 30 % of the population aged 30-34 holding a tertiary degree (France, 28.8 %, the Netherlands 28.8 %) but other regions where about 60 % of the same age bracket have a tertiary qualification (59.5 % and 60.1 %, respectively). In contrast, some countries present a more homogeneous picture of tertiary educational attainment. This is the case in Croatia, Ireland, Austria and Italy.

2.3 Early childhood education and care

Key findings

Evidence shows that early childhood education and care (ECEC) is beneficial for the development of children's cognitive skills, language development, academic achievement and social and emotional skills. Its effects last into later childhood, adolescence and adult life. However, only high-quality ECEC can improve children's well-being and competences.

In 2016, both the ET2020 benchmark for participation in ECEC and the similar 'Barcelona target'[76] for children aged 0-3 were reached. Nonetheless, the policy significance and the need both to improve access to ECEC and to provide high-quality care remain. This calls for a revision of the benchmark definition, as the target is now only based on enrolments rather than quality.

2.3.1 Evolution of the early childhood education and care benchmark in 2016

Early childhood education and care (ECEC) refers to any type of regulated arrangement that provides education and care for children before the compulsory primary school age. ECEC arrangements vary in the content of service, number of daily hours provided, funding scheme (private or public) and whether they are institutional (centre-based) or family day-care based. The benefits for children are manifold[77]. Children who attend an ECEC institution enjoy proven[78] long-term educational benefits, including better cognitive and social skills from an early age, higher educational attainment[79] and also a reduced risk of leaving school early. Some evidence[80] suggests that children with low socioeconomic status gain most from participating in ECEC, although it is not yet fully confirmed that this advantage persists in the longer term and can thus also contribute to an increased level of social mobility. In general, ECEC is considered a means to promote the socioeconomic but also the cultural integration of children from disadvantaged backgrounds and also migrant families[81]. Beside the educational benefits, accessible and affordable childcare from an early age is also associated with higher levels of children's well-being, higher rates of maternal employment, and a better work-life balance for

[76] European Commission (2018). Report on the *Barcelona objectives*

[77] Cannon, J. S., Kilburn M. R., Karoly L. A., Mattox T., Muchow, A. N. and Buenaventura, M. (2017). *Investing Early: Taking Stock of Outcomes and Economic Returns from Early Childhood Programs*. A RAND Corp. report.

[78] For a comprehensive review on the effects of Early childhood education and care, see: Utrecht University and CARE consortium (2017). *CARE: Curriculum Quality Analysis and Impact Review of European ECEC*. It should be noted, however, that most of the evidence tracking children from preschool age into adulthood refers to the US.

[79] Cunha, F., Heckman, J. J. and Lochner, L. (2006). Interpreting the Evidence on Life Cycle Skill Formation. In *Handbook of the Economics of Education*, Vol. 1.

[80] Guerin, B. (2014). *Breaking the cycle of disadvantage: Early Childhood interventions and progression to higher education in Europe*.
OECD (2017). *Starting Strong 2017*.

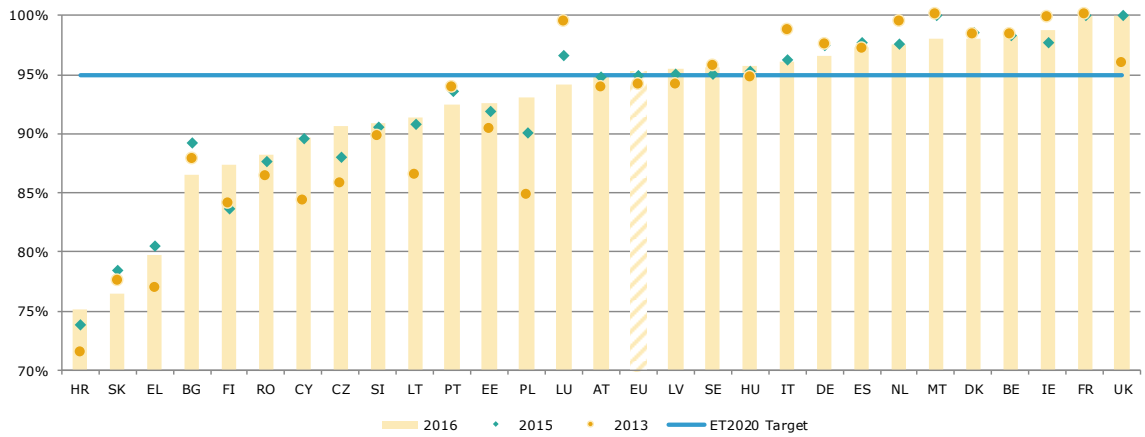
[81] Bennett, J. et al (2012). *ECEC for children from disadvantaged backgrounds: findings from a European literature review and two case studies*.

the parents of young children[82]. Moreover, it amplifies the known benefits of a higher level of education in society: better health, reduced spending at later stages of education and on welfare, lower crime rates, higher tax revenues and improved social cohesion[83].

All these benefits at the individual as well as the societal level explain European policymakers' long-standing interest in the topic. This interest was reflected in two targets set at EU level. First, the Barcelona target set in 2002 by the European Council established that Member States should provide childcare by 2010 to at least 33 % of children below 3 years of age, and to 90 % of children between 3 and the mandatory school age[84]. Secondly, the ECEC benchmark adopted in 2009 under the ET2020 strategic framework, recommended that at least 95 % of children between 4 years old and the age for compulsory primary education participate in early childhood education and care[85].

2016 marks the year in which the ECEC target set in the ET2020 framework for the EU as a whole was officially reached: 95.3 % of children between 4 and the age of starting compulsory primary education participated in early childhood education and care. This is 0.6 pps higher than in 2015, and 1.4 pps higher than in 2013 (Figure 17). By 2016, the 95 % target for 4+ children has been reached by 14 countries (France, the UK, Ireland, Belgium, Denmark, Malta, the Netherlands, Spain, Germany, Italy, Hungary, Sweden, Latvia and Austria in order of decreasing ECEC rate). Among those countries still below the target, considerable improvement (an increase of over 4 pps) took place between 2013 and 2016 in Poland, Cyprus, the Czech Republic and Lithuania. The only country with a notable decrease in the proportion of children in ECEC over these 3 years is Luxembourg, which now stands slightly below the target after a few years of constant decline in the indicator. The two countries with the greatest shortfall between the rates achieved and the target level are Croatia and Slovakia, with participation rates just above 75 %. In Croatia this level was reached following some gradual improvements in recent years. For Slovakia, on the other hand, it is a step backwards from the increase seen between 2013 and 2015. Finally, Greece, also among the tail-enders in 2015, achieved a moderate improvement (an increase of almost 3 pps) and reached 79.8 % in 2016.

Figure 17 — Participation in ECEC of children between 4 and the age of starting compulsory primary education 2016, 2015 and 2013 (%)



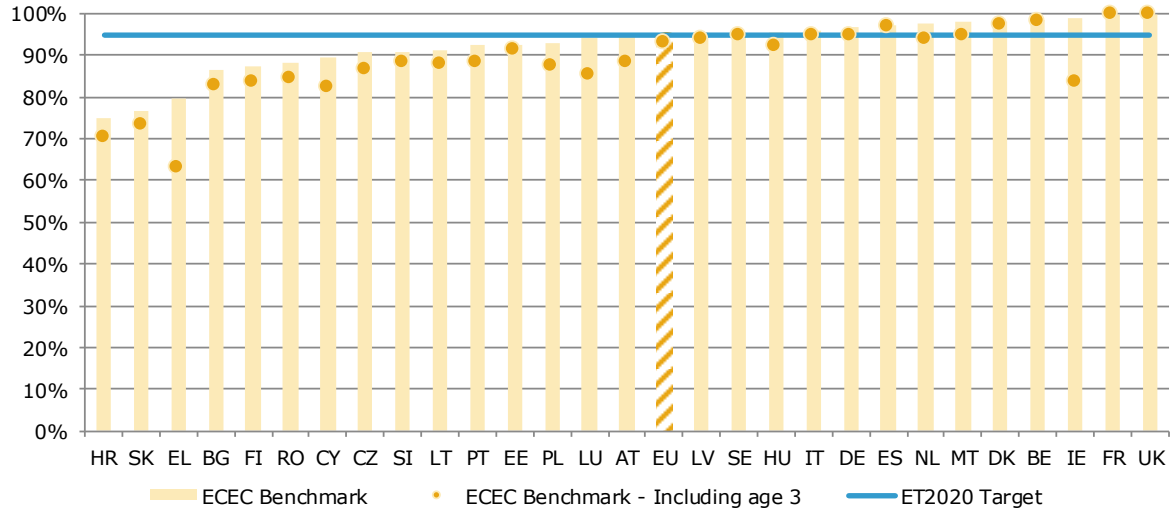
Source: Eurostat (UOE). Online data code: [educ_uoe_enra10].
Note: value for PT in 2015 estimated; definition differs for PL in 2013 FI: Data includes regulated family day care for all years 2013-16 for Finland.

82 European Commission/EACEA/Eurydice/Eurostat (2014). *Key Data on Early Childhood Education and Care in Europe 2014.*
83 Vandenbroeck, M., Lenaerts, K., Beblavý, M. (2018). *Benefits of early childhood education and care and the conditions for obtaining them*. An EENEE Analytical Report No. 32, January 2018.
84 European Council (2002). *Presidency conclusions*. Barcelona European Council 15-16 March 2002.
85 OJ of the EU, 2009/C 119/02.

Although the ET2020 benchmark has been attained at the aggregated EU level, the challenge of increasing participation for younger children remains as relevant as ever. In fact, applying the 95 % target to the broader age group of children from 3 (entry age to ISCED02) to compulsory primary schooling age gives a somewhat more uneven picture across the EU (see: Figure 18). This is because enrolment rates increase with children's age, and children aged between 3 and 4 are less likely to be in an institutional setting than those over 4. Although most of the countries that are above the 95 % benchmark according to the ET2020 target would still meet or be close to meeting the requirements with this broader age group considered, some notable exceptions exist. Most importantly, in this age group, only 83.8 % of Irish and 88.5 % of Austrian children are in an ECEC setting — as opposed to 98.8 % and 94.9 % for the age group 4+. The biggest gap between the ECEC attendance rates of children aged 3+ and 4+ is in Greece, where only 63.1 % of the 3+ group and 79.8 % of the 4+ group attends ECEC. The gap is also notable in Luxembourg: the ECEC rate falls by 10 points (from 94.2 to 85.3 %) when the indicator is extended to cover age 3.

Overall, the inclusion of age 3 in the calculation makes all the more evident the underperformance of some EU Member States in this domain. The countries with low scores on the ECEC benchmark are also those that perform worse when children aged 3 are taken into account. These countries (Croatia, Slovakia, Bulgaria, Greece[86] and Romania) do not guarantee a legal entitlement to ECEC (i.e. there is no statutory duty on ECEC providers to secure publicly subsidised ECEC provision for all children living in a catchment area whose parents require a place for their child)[87]. In Finland where children have a legal entitlement to a publicly subsidised ECEC place from 9 months of age, a relatively high proportion of children attend regulated home-based ECEC. Moreover, Finnish child care allowance and leave system provide incentives for families to care for their children at home.

Figure 18 — Participation in ECEC of children of different age groups (4+ and 3+), 2016 (%)



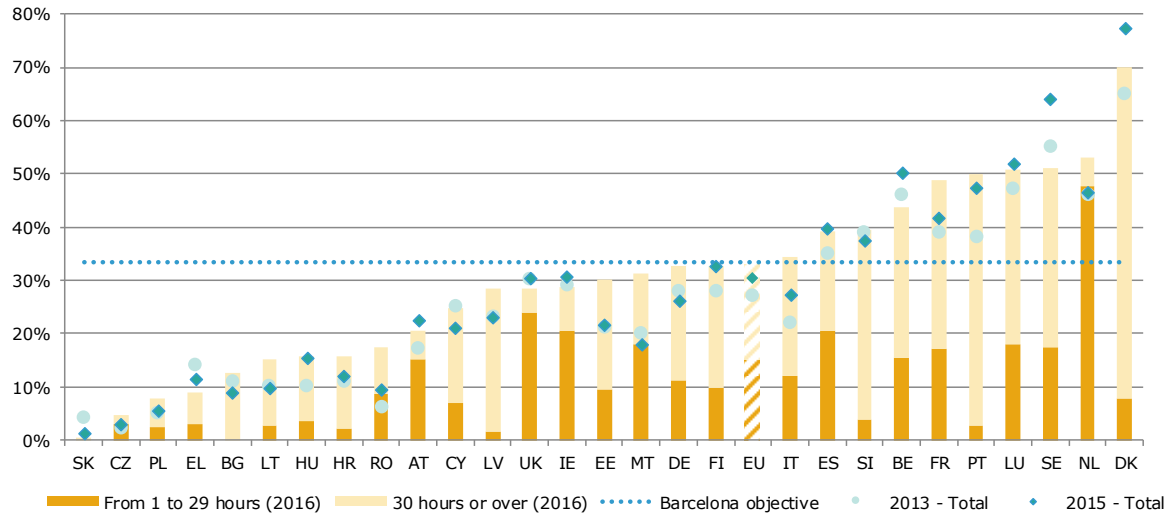
Source: Eurostat (UOE). Online data code: [educ_uoe_enra10] for 'ECEC benchmark' and [educ_uoe_enra21] 'ECEC benchmark –including age 3.
Note: Early childhood educational development data missing for BE, IE, IT, HU, PT and RO. FI: Data includes regulated family day care.

[86] Greece recently introduced, with Law No. 4521/2018, a universal legal entitlement to a place in ECEC from age 4 to be gradually implemented in three years as of September 2018.

[87] Legal entitlement to ECEC exists when every child has the enforceable right to benefit from ECEC provision. Enforceable right means that public authorities guarantee a place for each child whose parents demand it (in the age-range covered by legal entitlement), regardless of their employment, socio-economic of family status. It does not necessarily imply that provision is free, only that provision is publicly subsidised and affordable. See European Commission/EACEA/Eurydice (2016). *Structural Indicators on Early Childhood Education and Care in Europe 2016*.

Attendance rates decrease even further when children aged below 3 are considered. The Barcelona 33 % target, set originally for 2010 and then restated in the European Pact for Gender Equality (2011-2020), was virtually achieved in 2016[88], with an EU average of 32.9 % of children aged 0-2 in formal childcare or education. Despite this remarkable achievement[89], there are still notable differences between countries. Only 10 Member States were above the 33 % target in 2016: Belgium, Denmark, Spain, France, Luxembourg, the Netherlands, Portugal, Sweden, Slovenia as well as Italy (which joined the group only in 2016, after a considerable improvement in recent years). Most importantly, there are several countries, where still fewer than 20 % of children aged 0 to 2 participate in formal childcare or education despite a significant improvement between 2013 and 2016, for example in Lithuania, Hungary, Croatia and particularly Romania.

Figure 19 — Participation in formal childcare or education of children below 3 years of age, 2016, 2015 and 2013



Source: EU-SILC, the 2015 module on social/cultural participation and material deprivation, Eurostat. Online data code: [ilc_caindformal].

While it might appear straightforward to draw a direct connection between these results and those of the ECEC benchmark, it is worth noting that the Barcelona target is essentially different in its nature from the ET2020 ECEC one[90]. As a matter of fact, the Barcelona target was originally established to help achieve equal opportunities in employment between women and men and remove obstacles to women going out to work, rather than to foster children's development and provide rich learning experiences for every child. For this reason, the terminology used is also different: the Barcelona target revolves around 'formal childcare', while the ECEC benchmark refers to 'education and care'. The two indicators also rely on different data sources; the Barcelona one is based on survey data, and in particular on the EU Survey on Income and Living Conditions (EU-SILC), while data for the ECEC benchmark are provided by the UOE database on education statistics from the UNESCO/OECD/Eurostat data collection, compiled on the basis of national administrative sources. This leads to considerable differences in the types of programmes included in one indicator or the other; while the Barcelona target was operationalised in EU-SILC in such a way that only childcare recognised as fulfilling certain

[88] On the other hand, the objective to provide childcare to 90 % of children from age 3 until mandatory school age, also part of the Barcelona targets, has not been reached yet: an EU average of 86.3 % of these children who participate in formal childcare or attend preschool. Here again, there are large differences within the EU, since the target of 90 % has only been reached in 12 Member States.

[89] European Commission (2018). Report on the *Barcelona objectives*.

[90] Flisi, S., Meroni, E. and Vera-Toscano E. (2016). *Indicators for early childhood education and care*. A JRC Technical Report no. 102774.

quality criteria is taken into account[91], the UOE data collection is based on more restrictive international standards, definitions and classifications[92].

Some doubts persist over whether the ISCED 0 classification adopted in UOE data is able to cover all the relevant programmes. As explained by OECD[93], in the 2011 revision of ISCED, programmes for very young children (i.e. under the age of 3) were included for the first time in the nomenclature under ISCED 0 if they adhered to several criteria (e.g. duration and intensity of participation, staff qualification, governance, curriculum content). Despite this significant improvement in the classification, ISCED-2011 is not yet capturing some ECEC programmes that are an integral part of countries' ECEC systems, but that do not comply with at least one ISCED criterion. Further progress is therefore still needed to properly measure countries' performance in the ECEC domain, especially when younger children are considered.

2.3.2 Maximising the impact of early childhood education and care

As mentioned above, participation in early childhood education and care has increased. Supply and access to high-quality provision remain however a challenge. This is particularly problematic for children under the age of 3 and especially for disadvantaged children, including Roma children, who benefit more from attendance. For them, the benefits are stronger at an early starting age and increase with length of attendance. The quality of early childhood education and care is, however, a clear determinant of outcomes. In fact, there have been studies pointing to potential negative effects[94] of long hours, poor quality provision and unstable care settings, particularly at a very early age[95].

Across the EU, the offer of early childhood education and care is characterised by a great variation in financing, participation rates, starting age, quality and duration of programmes and organisation (see below for details on the organisation of early childhood education and care provision).

Participation, affordability and quality remain uneven within and between countries. In several Member States the demand for publicly-subsidised early childhood education and care for the youngest children exceeds the supply; deficits in quality are often linked to inadequate qualification of staff and limited opportunities for professional development[96].

A recent OECD report[97], financed by the EU, highlights the challenges in targeting process quality through regulation. Apart from in-service training, changes in structural levers are not directly linked to child development and learning. Research suggests that well-trained staff with good working conditions, such as favourable child-staff ratios, are better able to promote rich learning and well-being environments for children. However, the report also shows that aspects of process quality, such as child-to-child interactions, and aspects of child development and learning, are still overlooked in research. More evidence on curriculum and monitoring as well as on contextual factors is needed to examine the mechanisms at play between structure, process and child development. In addition, further studies of the quality of early childhood education and care for the youngest children are necessary to inform research and policy.

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91 'Formal childcare' = 'formal arrangements', with all kinds of care organised by a structure (public or private). Care without any structure between the carer and the parents is excluded from 'formal care'.

92 OECD (2015). *UOE data collection on formal education*. Appendix A: Additional guidance on Early childhood education programmes.

93 OECD (2017). Proposal to improve the indicators on early childhood education and care (ECEC).

94 Vermeer H. J. and Groeneveld M., G. (2017). Children's physiological responses to childcare Current Opinion in Psychology, Volume 15, 2017, pp. 201-206.

95 Evidence on the impact of attendance under the age of 3 on emotional development is non-conclusive and there is no clear case for full-day or half-day attendance. UNICEF (2008). *The child care transition*, Innocenti report card no. 8.

96 European Commission/EACEA/Eurydice (2014). *Policy Brief Early Childhood Education and Care*.

97 OECD (2018). *Engaging Young Children: Lessons from Research about Quality in Early Childhood Education and Care, Starting Strong*.

The potential benefits can materialise when the quality of early childhood education and care provision, and access to it, are good enough. Finally, the transition between early childhood education and care and primary school needs to be well managed in order to preserve the beneficial impact of early childhood education and care in later stages of schooling and development.

The increasing attention to early childhood education and care (ECEC) is not motivated alone by the growing research findings on its benefits but also by demographic and economic changes. Lower fertility rates, the rising age of first-time mothers, greater labour mobility, longer working lives and changing lifestyles have all had a strong impact on the traditional informal provision of childcare, such as grandparents, and increased demand for formal childcare outside the home. Member States cope differently with these changes.

In May 2018 the Commission has proposed a Council recommendation on High Quality Early Childhood Education and Care Systems[98]. It aims at: 1) supporting EU Member States in their efforts to improve access to and quality of their early childhood education and care systems; 2) develop a common EU-wide understanding of what constitutes good quality service provision in order to support national reforms and promote social inclusion by facilitating the exchange of experience and good practice.

Almost all education systems guarantee a legal entitlement to early childhood education and care provision or make provision for compulsory participation in early childhood education and care. The exceptions are Ireland, Italy[99], Romania, Slovakia and part of the UK (Northern Ireland)[100] (See: Figure 67 and
Figure 68). Some countries make the last 1 or 2 years of pre-school education compulsory, notably Bulgaria (at the age of 5), the Czech Republic (5), Greece (5)[101], Croatia (6), Cyprus[102] (4 years and 8 months), Latvia (5), Lithuania (6), Luxembourg (4), the Netherlands (5), Austria (5), Poland (6) and Finland (6). Hungary is the only country where the entire ISCED 02 period is compulsory, and compulsory early childhood education and care starts at the age of 3[103]. France will introduce mandatory ECEC from age 3 from the school year 2019. Three countries have lowered the age from which a place in ECEC is guaranteed: The Czech Republic introduced compulsory ECEC from the age of 5 and lowered the starting age of legal entitlement to 4. In Poland, the last step of long-term reform has been implemented, ensuring a universal legal entitlement to ECEC from age 3. Greece lowered the age of compulsory ECEC to 4 starting in the school year 2018/19, with a gradual implementation during three years

Malta is a good example of fast progress on free provision, with more than 6 400 families using free childcare services. The scheme adopted aimed to increase the number of women in work or training and made Malta one of the best EU performers, with 97.7 % of children aged between 4 and the age of starting school participating in early childhood education and care. In Slovakia, some 5 000 new places in pre-school facilities across the country are planned to be created through 150 projects recently approved under the Integrated Regional Operational Programme supported by the European Structural and Investment Funds. At the moment, between 8 000 and 10 000 children are being rejected from pre-school yearly due to capacity shortages. Germany also passed legislation to allow for 100 000 additional places in early childcare facilities and added EUR 1.1 billion to the special fund for childcare roll-out. The law responds to the prevailing demand for childcare provision for under 3 year-olds, which currently exceeds supply by around 10 %, with marked regional differences. In addition, in 2018 Finland has launched a pilot project on free provision of early childhood education and care for 5 year-olds,

98 European Commission (2018). Proposal for a Council recommendation on High Quality Early Childhood Education and Care Systems, COM(2018) 271 final.

99 Italy's long tradition of Early childhood education and care services, combined with the socio-cultural value attached to this sector, ensures very high participation for over 4 year olds.

100 In Northern Ireland, compulsory primary education starts from age 4.

101 Greece will lower the age of compulsory ECEC to 4 from the school year 2018/19. See Law 4521/2018, article 33 (FEK 38/ issue A'/2-3-2018): Foundation of the West Attica University and other provisions.

102 It will be raised to 5 years as of 2020/21 and first primary to 6 years as of 2021/22.

103 European Commission/EACEA/Eurydice (2017). The Structure of the European Education Systems. 2017/18: Schematic Diagrams. Eurydice Facts and Figures.

covering around 19 000 children. The aim is to investigate the impact of free provision on participation and parents' employment.

Inclusive early childhood education and care services proved to be an important tool to facilitate the rapid integration of migrant families. Several Member States have put in place dedicated measures. In Sweden, most municipalities run 'open pre-schools' for children aged 0-6 where accompanying parents receive support from pre-school teachers and nurses, free-of-charge. The Swedish Association of Local Authorities and Regions will now map municipalities' 'open pre-schools' and share the practices of those pre-schools that combine care for newly arrived young children with Swedish language courses for parents. Sweden has also extended 'Boost for Reading', a continuous professional development programme targeting teachers, to pre-school teachers with the aim of strengthening the educational mission of pre-schools and improving the teaching of Swedish to children who have a different mother tongue. Austria has also pledged to pay special attention to the transition from nursery school to primary school. The new government aims to reinforce German-language support in schools and introduce a second year of compulsory early childhood education and care where pupils lack language skills.

The quality of early childhood education and care could also be improved through a common framework on quality indicators, including smaller groups and higher standards of initial and continued training as well as of management. Germany, as part of a federal plan to improve both infrastructure and quality in early childhood education and care, has also introduced centres with a special language focus ('language day care centres') which will receive extra funding to hire specialists for linguistic development. Early language training will be focused on children from socially disadvantaged groups and immigrants. Luxembourg has introduced a multilingualism education programme targeting children aged 1-4.

Staff qualification, professional development and teaching practices are central to the quality of early childhood education and care. There are 11 EU education systems that require at least one staff member in early childhood education and care settings to have a tertiary qualification in education science[104] for the entire early childhood education and care phase. Fifteen education systems require this only for groups of children aged 3 or older. By contrast, there is no requirement for ECEC staff in direct regular contact with children to have minimum 3 years Bachelor (ISCED 6) degree in educational science sin the Czech Republic, Denmark, Ireland, Latvia, Austria, Slovakia and part of the UK (Scotland). Nevertheless, to improve staff competences almost all EU Member States have made continuing professional development a professional duty or a requirement for promotion (at least for staff working with children aged 3 and older). The only countries where continuing professional development for ECEC staff is optional are Denmark, Ireland, the Netherlands and Sweden.

In contrast with primary education, the private sector plays a very large role in some countries, with implications for access and affordability. Private-for-profit and private non-profit organisations are both present in this area and in some cases are publicly subsidised. In almost all systems private and public settings need to comply with the same rules.

In split systems[105], private self-financed early childhood education and care is more present for children under 3. Private institutions for pre-primary education play a significant role in:

- Ireland, where almost all children attend early childhood education and care in private institutions;
- Germany, where fewer than 40 % of children attend pre-primary education in public institutions; and
- Portugal, Belgium (under 2.5 years old) and the UK (under 3 years old), where about half of children attending early childhood education and care do so in private institutions[106].

[104] In Sweden, at least one staff member in Early childhood education and care centres must have a higher education degree in education science. In 2017, 41.8 % of ECEC staff in Sweden had pre-school teacher or teacher degree.

[105] In most European countries ECEC is split in two different phases according to age, and provision is delivered in separate systems for younger (from birth to three years of age) and older children. The age of transition between these programmes differs between countries.

In Ireland, the introduction of a single Affordable Childcare Scheme from September 2017 will allow an estimated 79 000 more children to be included in ECEC on top of those targeted by the extension of the free pre-school year in 2016, bringing the total to some 140 000 children[107].

2.4 Underachievement in reading, maths and science

Key findings

After several years of steady progress, the 2015 PISA results brought a major setback compared with the 2012 scores in all the three domains of reading, maths and science.

EU Member States differ considerably in the percentage of low achievers in different subjects. There are also differences between EU Member States regarding low achievers in all three domains combined. Whereas seven Member States had fewer than 10 % of low achievers in all three domains, six Member States struggle with 20 % of students or more who fail to reach basic proficiency levels in science, reading and maths.

An in-depth look at which students reach basic proficiency levels in all three domains, with a special focus on first-generation immigrant students, reveals major differences between Member States, although in almost all of them immigrant students had lower achievements. Countries also differ on the sense of belonging that students perceive at school, again with lower levels among students with a migrant background. This shows that it is important to look at what happens in schools and classrooms.

2.4.1 Low achievers in PISA

The ET2020 benchmark on basic competences is defined as follows: 'by 2020, the share of 15 year-olds with underachievement in reading, mathematics or science should be less than 15 %'. Data for this benchmark come from the OECD PISA survey. Since this is conducted every 3 years, the 2015 levels that were reported in 2017 are still valid: on average across all 28 EU Member States, the share of pupils who fail to reach basic competences is around 20 % (19.7 % in reading, 22.2 % in maths and 20.6 % in science). Thus[108], compared to the last PISA round in 2012, the situation has worsened in all three domains: by 1.9 pps in reading, 0.1 p.p. in maths, and 4 pps in science. Moreover, the EU average has moved further away from the benchmark for 2020. Especially in the light of the European Pillar of Social Rights and its emphasis on the right to quality and inclusive education, equal opportunities and its quest for acquiring skills that enable to participate fully in society, this is a worrying development.

It is important to note, however, that while EU Member States on average miss the benchmark of less than 15 % by a wide margin, the situation varies considerably between Member States. Four Member States (Estonia, Finland, Slovenia, Ireland) reach the reading benchmark, three the maths benchmark (Denmark, Finland, Estonia) and two the science one (Estonia, Finland). On the other hand, several Member States have considerably higher percentages of low achievement, with levels around 40 % (Cyprus, Bulgaria and Romania).

Previous analysis showed that students with lower socioeconomic status and those with a migrant background are overrepresented among the group of low achievers. While the benchmark looks at low achievers in each of the three different domains separately, the group that needs the greatest policy attention are those students who are low achievers in all three domains at the same time. This 'combined low-proficiency' group is much smaller than the groups of low achievers in each domain (see Figure 20).

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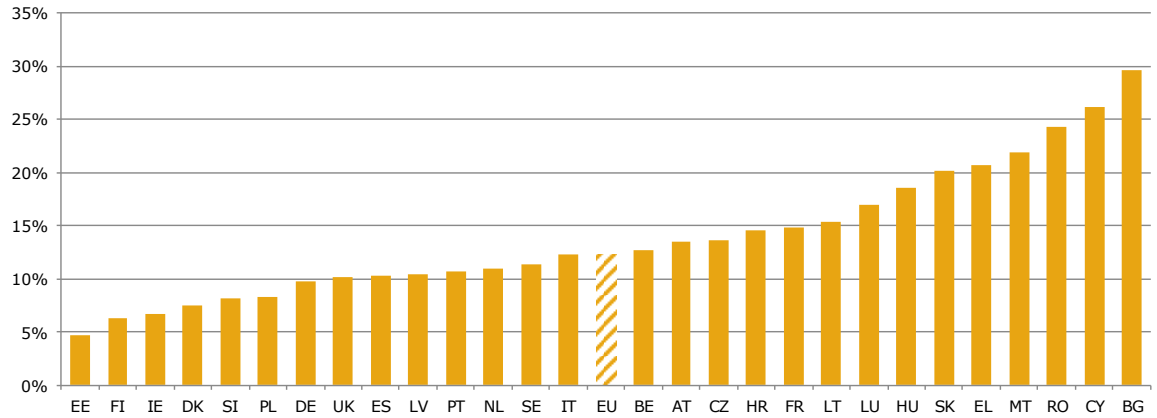
106 Indicator C2 in OECD (2017). *Education at a Glance*.
107 Daly M. (2017). *Ireland finally address the costs of childcare*. An ESPN Flash Report 2017/33
108 See Education and Training Monitor 2017, chapter 1.2.1; and EU Note on the PISA results.

2.4.2 Low achievers in all three domains combined

The ranking of EU Member States and their percentages of low achievers across the three domains strongly resemble the pattern for low achievers in science, but with lower percentages. The EU average of low achievers in all three domains combined is 12.3 %. Seven Member States have percentages below 10 % (Estonia, Finland, Ireland, Denmark, Slovenia, Poland, Germany) while six countries are at or above 20 % (Slovakia, Greece, Malta, Romania, Cyprus, Bulgaria). None reaches 30 %.

By failing to meet the minimum standards required in three essential subjects, these students are most likely to face serious problems in their further education, on the labour market and later in life.

Figure 20 — Percentage of low-achieving students in all three domains (science, reading and maths), 2015



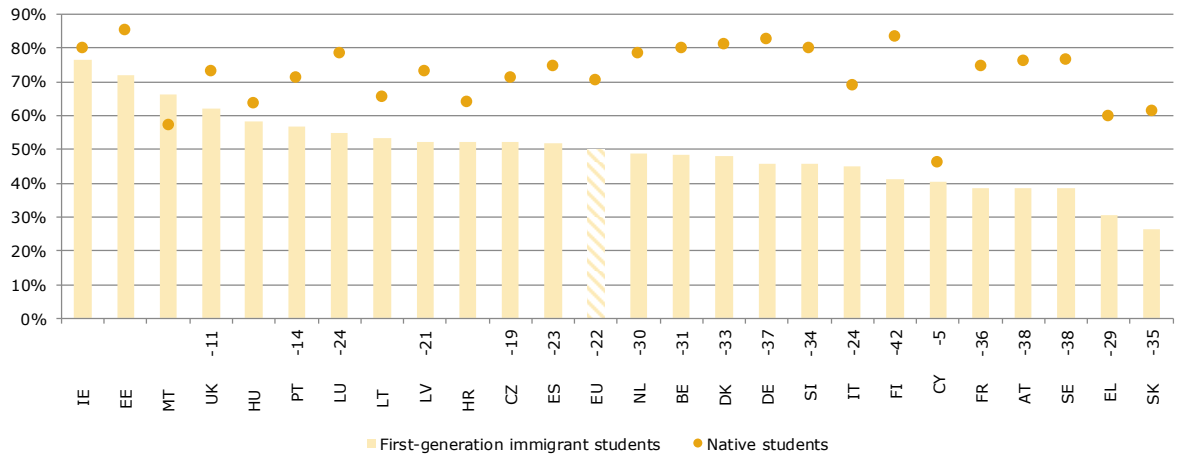
Source: OECD, (2016) PISA 2015 Results (Volume I): Excellence and Equity in Education, Table I.2.10a.
Note: Countries are ordered by low to high share of low achievers in science, reading and maths. EU weighted average calculated by DG EAC.

2.4.3 Attaining baseline proficiency by immigrant background

Given the importance of integrating students with migrant backgrounds into European societies, especially after the influx of large groups of asylum seekers in 2015 (who are not included in the 2015 PISA survey), looking at how these students are able to achieve basic proficiency is crucial. This is why an extensive report by the OECD and co-financed by the European Commission[109] looks at those students who reach the basic levels of proficiency in all three domains despite unfavourable situations. These are called 'resilient' students.

[109] OECD (2018). *The Resilience of Students with an Immigrant Background: Factors That Shape Well-Being.*

Figure 21 — Percentage of students attaining baseline academic proficiency by immigrant background, 2015



Source: OECD (2018): The Resilience of Students with an Immigrant Background: Factors that Shape Well-Being, Figure 3.7.
Note: Statistically significant differences are shown next to country/economy name. Only countries with valid values for immigrant students are shown. For the EU average, this number refers only to the subset of countries/economies with valid information on both groups of students. Students who attain baseline academic proficiency are students who reach at least PISA proficiency level two in all three PISA core subjects: maths, reading and science. Countries and economies are ranked in descending order of the percentage of first-generation immigrant students reaching baseline levels of proficiency in PISA core domains.

shows that there are striking differences between EU Member States' shares of resilient students. The two groups whose attainment of baseline proficiency is compared are: i) first-generation immigrant students who were born outside the country where the PISA test was taken; and ii) students who were born in the country, regardless of whether they have an immigrant background or not. The differences are especially stark given the specific challenges new immigrants face in dealing with possible language barriers, personal migration experience and having to adapt to a new host society. Native-born students do better in most Member States. There is little difference in Ireland, Estonia, Hungary, Lithuania and Croatia. Malta is an exception, with the baseline proficiency in all three domains higher among immigrant students (but overall shares of low achievers in all three domains are quite high).

On average, across the EU Member States with valid information on both groups of students, the difference between native-born students and first-generation immigrant students is 23 pps. There are extremely large differences of between 35 and 40 pps in Finland, Austria, Sweden, Germany, France and Slovakia (although Slovakia has a very small migrant population in comparison with the other countries named here). The difference is less than 20 points only in the UK, Portugal and the Czech Republic. Many of the immigrants to these three Member States may have the advantage of already knowing the national language or speaking a language similar to that of the host country. In other words, the UK receiving immigrants who learnt English as a second language, Portugal receiving immigrants from other Lusophone countries and the Czech Republic receiving immigrants from linguistically close Slovakia, Ukraine or Russia[110].

It should be noted that the pattern of baseline achievers/resilient students is quite different from the overall pattern of low achievers. It does not overlap with the ranking order of low-achieving students overall[111]. Even in countries where the percentage of low achievers in all

[110] The CZ also has a sizeable and linguistically well-integrated Vietnamese immigrant community.
[111] Note that the two measures — low achievers in all three domains and resilient students who reach basic proficiency in all three domains — do not make up the whole sample, as they exclude students who are low achievers in one or two domains.

three domains is quite low, such as Finland, Denmark, Slovenia and Germany, the differences between first-generation immigrants and native students are over 30 pps.

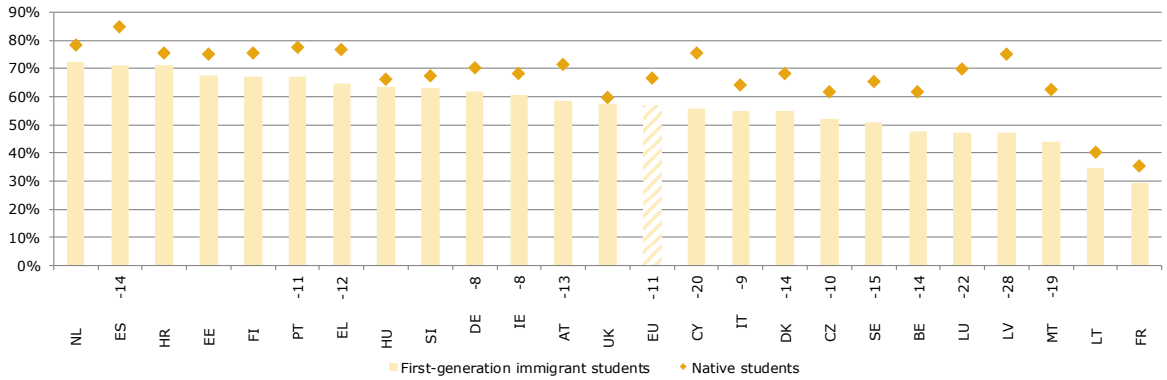
Notable exceptions are Ireland and the UK, which have low overall rates of low achievers and insignificant or relatively small differences between immigrant and native students. In the case of Ireland and the UK, this might also be related to the fact that English as the language of the UK and an official language in Ireland, is omnipresent on social media and less of an obstacle to attain.

2.4.4 The sense of belonging at school by immigrant background

Integrating students with an immigrant background not only into schools, but into societies overall has been seen to improve their prospects and give them a good chance to sustain themselves and ultimately contribute to their societies[112].

The previous paragraphs showed that the school systems of Member States perform very differently when it comes to ensuring that every student attains the basic level for students in general and for immigrant students. Thus, it is worth looking at another aspect that might be relevant to successfully integrating students in general and students with an immigrant background in particular: the sense of belonging at school.

Figure 22 — Sense of belonging at school
% of students who feel they belong at school
by immigrant background, 2015



Source: OECD (2018): The Resilience of Students with an Immigrant Background: Factors that Shape Well-Being, Figure 3.10.
Note: Statistically significant differences are shown next to country/economy name. Only countries with valid values for immigrant students are shown. For the EU average, this number refers only to the subset of countries/economies with valid information on both groups of students. Students who report a sense of belonging at school are students who reported that they 'agree' or 'strongly agree' with the statement 'I feel like I belong at school' and 'disagree' or 'strongly disagree' with the statement 'I feel like an outsider at school'. Countries and economies are ranked in descending order of the percentage of first-generation immigrant students who feel that they belong at school.

Figure 22 gives a very different ranking of EU Member States: they differ quite widely on the sense of belonging at school that students experience and on the gaps between students who are first-generation immigrants or native-born.

Overall, the differences between immigrant and native students are not as pronounced as in Figure 22, with an EU average of 11 pps difference between native and immigrant students.

[112] OECD (2018). *The Resilience of Students with an Immigrant Background: Factors That Shape Well-Being*; p. 30.

Member States with especially wide differences, in either direction, are:

- Latvia (28 pps), which also had considerable differences between immigrant and native baseline academic proficiency;
- Malta (19 pps), where immigrant students have higher baseline proficiency than native students.

Countries with narrow differences between native and immigrant students can be found across the whole spectrum. The Netherlands has a particularly high percentage of both groups while Lithuania and France have very low percentages of both.

Estonia showed low rates of low achievers in all three domains and quite a high percentage of immigrant students attaining baseline academic proficiency. It is worth noting that it is among the countries with the highest rates of students professing to a sense of belonging at school and an insignificant difference between native and immigrant students.

These results therefore provide encouragement to look at what is going on in schools and classrooms and what can be done to improve the situation — especially for low-achieving students at the local level. Here, PISA provides interesting insights into the role of teachers and teaching styles for the attainment of basic levels of competences.

2.4.5 The importance of education for integrating people with a migrant background in European societies

The challenge of integrating students with an immigrant background is especially vital in Europe today, as countries are dealing with the consequences of the large flows of asylum seekers that reached its peak in 2015-2016. On the one hand, European Union (EU) Member States are still busy responding to the immediate needs of recently arrived immigrants seeking protection; on the other hand, those who are granted asylum need to be integrated into European societies and economies as soon as possible.

In 2015 and 2016 alone, more than 2.5 million people applied for asylum in the EU. In 2017, the number of asylum seekers declined sharply to just over 650 000 applicants. In January 2018, the population of the EU was estimated at 512.6 million, compared with 511.5 million on 1 January 2017. During 2017, more deaths (5.3 million) than births (5.1 million) were recorded in the EU, meaning that the natural change in the EU population was negative. The overall increase in population of 1.1 million was therefore due to net migration from outside the EU[113]. The share of young people among immigrants is high, in particular so among asylum applicants which can put under pressure education systems in some EU Member States.

As shown above, students with a migrant background continue to face obstacles, often due to their lower socioeconomic status and having to learn more than one language, and perform less well than their peers who do not have a migrant background[114]. This is the situation on average and in a number of Member States, but not all. In addition to providing them with the necessary competencies, education systems have an additional, crucial responsibility towards people with a migrant background: fully integrating them into European societies. The Council

[113] EU population reached nearly 513 million on 1 January 2018 and the increase has been driven by migration. Eurostat press release of 10 July 2018.

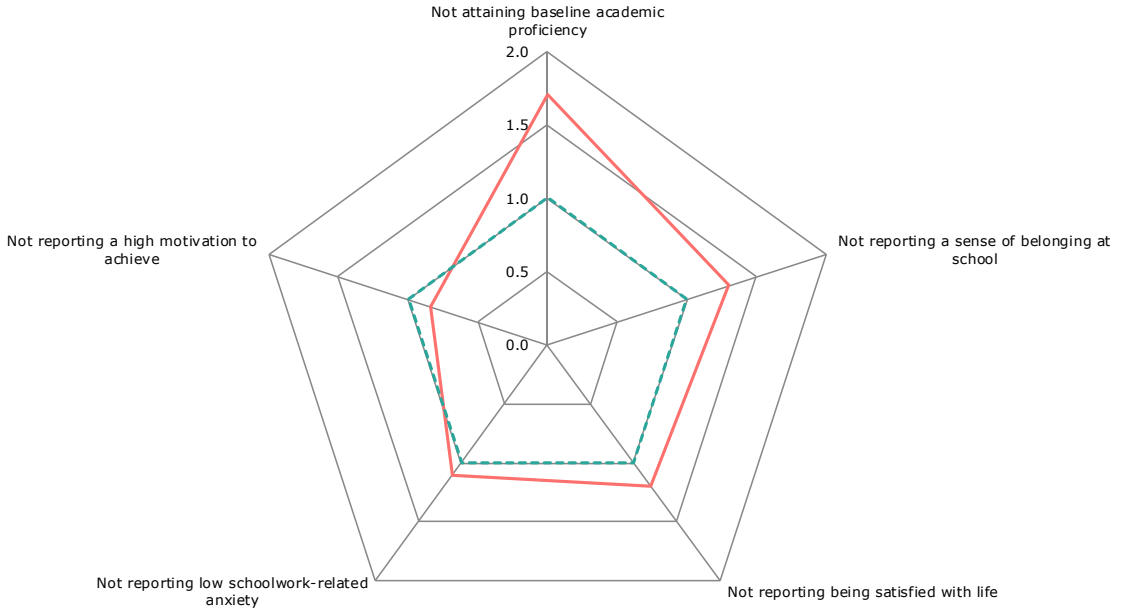
[114] OECD (2016). *PISA 2015 Results. Excellence and Equity in Education*. Volume 1, Chapter 7.

Recommendation on common values[115], emphasises the importance of four objectives for education (see also the Paris Declaration of 2015[116]):

- promote common values at all levels of education;
- foster more inclusive education;
- encourage a European dimension of teaching, without prejudice to the national prerogatives in this realm; and
- support teachers and teaching.

As cited above, a new study[117] demonstrates that students with a migrant background have considerably lower rates of attaining baseline academic proficiency, have a lower sense of belonging at school. They are also less satisfied with their life, and experience more school-related anxiety than native students. On the other hand, it is important to note, however, that students with a migrant background on average report a slightly higher motivation to achieve academically than their native peers. These findings relate not only to students with a migrant background, namely foreign-born students, but also those native-born with foreign-born parents who represented in 2015 around 6.5 % of students (in PISA) in the EU-28 (versus 4.8 % as regards the first generation).

Figure 23 — Relative risk for students with an immigrant background of not being resilient, by resilience outcome



Legend: Green dotted line: EU averages for students without a migrant background (value fixed at 1); Orange solid line: EU averages for students with a migrant background
Source: OECD, PISA 2015 Database, Table 1.2. Cited from OECD (2018), p. 21.
Note: All measures of relative risk compare immigrant students to native-born students. Students who attain baseline academic proficiency are students who reach at least PISA proficiency Level 2 in all three core PISA subjects: science, reading and mathematics. Students who reported a sense of belonging at school are those who reported that they 'agree' or 'strongly agree' with the statement 'I feel like I belong at school' and 'disagree' or 'strongly disagree' with the statement 'I feel like an outsider at school'. Students who reported being satisfied with life are those who reported a life satisfaction of 7 or above on a scale from

[115] Council of the EU (2018). *Recommendation on promoting common values*, inclusive education, and the European dimension of teaching of 22 May 2018.
[116] European Commission (2015). *Declaration on Promoting citizenship and the common values of freedom, tolerance and non-discrimination through education* (The 'Paris declaration'). 17 March 2015.
[117] OECD (2018). *The Resilience of Students with an Immigrant Background: Factors That Shape Well-Being*.

0 to 10. Students who reported low schoolwork-related anxiety are those who reported that they 'disagree' or 'strongly disagree' with the statements 'I often worry that it will be difficult for me taking a test' and 'Even if I am well prepared for a test, I feel very anxious'. Students who reported high motivation to achieve are those who reported that they 'agree' or 'strongly agree' with the statement 'I want to be the best, whatever I do'. Countries and economies are ranked in alphabetical order.

2.4.6 Low achievers, teaching practices and learning environment

Factors such as socioeconomic status and immigrant background are widely acknowledged to be among the key determinants of student performance[118]. However, the role of education policies, schools and teachers in promoting high student performance is also increasingly recognised[119]. In fact, education policy can play an important role in breaking the cycle of the low socioeconomic status of one generation leading to a low educational outcome, which then leads to the low socioeconomic status of the next generation (i.e. to low social mobility[120]). This also means that to reduce low achievement it is important to pay attention to the role of educational policies, and teaching practices in particular.

PISA 2015 provides information about teaching practices and the learning environment in science, by asking students and school principals questions about the frequency of specific school science activities and related conditions for learning. This section[121] looks at three different methods of science teaching[122], i.e. teacher-directed instruction, enquiry-based instruction, and adaptive instruction. Figure 24 presents an overview of the three teaching practices for science considered[123].

Figure 24 — Teaching practices/strategies for science[124]

Teacher-directed science instruction	Well-structured and informative lessons that include teachers' explanations of concepts, classroom debates, and students' questions
Enquiry-based science instruction	Science activities that lead students to study the natural world and to explain scientific ideas by engaging in experimentation and hands-on activities
Adaptive instruction in science lessons	Teachers' flexibility in adapting the lessons to students with different knowledge and abilities

Source: OECD (2016). *PISA 2015 Results (Volume II): Policies and Practices for Successful Schools*.

Below we look at the relationship between the three teaching practices, hours of learning in science and the estimated share of low achievers in 24 EU Member States[125]. In particular, we

[118] See summaries in OECD (2018). *The Resilience of Students with an Immigrant Background: Factors That Shape Well-Being*, Chapter 1.

[119] IEA (2016). *Are teacher characteristics and teaching practices associated with student performance?* Policy Brief No 11, September 2016.
Hanushek, E. and Woessmann, L. (2014). Institutional structures of the education system and student achievement: a review of cross-country economic research. In R. Strietholt, W. Bos., E. Gustafsson and M. Rosén, ed., *Educational Policy Evaluation through International Comparative Assessments* , 145–176.

[120] Stuhler J. (2018). *A Review of Intergenerational Mobility and its Drivers*, A Joint Research Centre 'Science for Policy' report, [forthcoming xxx].
This section is based on Pokropek, A., Costa, P., Flisi, S. and Biagi, F. (2018). *Low Achievers, Teaching Practices and Learning Environment*, A JRC Technical Report, forthcoming.

[122] Studies using PISA 2015 data shows a significant relation between these teaching instructional practices and students' science achievement; See OECD (2016). *PISA 2015 Results (Volume II): Policies and practices for successful schools*.
Costa, P. and Araújo, L. (2018). Quality of Teaching and Learning in Science. JRC Science for Policy Report, JRC 109064.

[123] It is important to note that the PISA operationalisation of 'enquiry-based teaching' is not necessarily equivalent with what researchers recommend for inquiry or enquiry based learning.

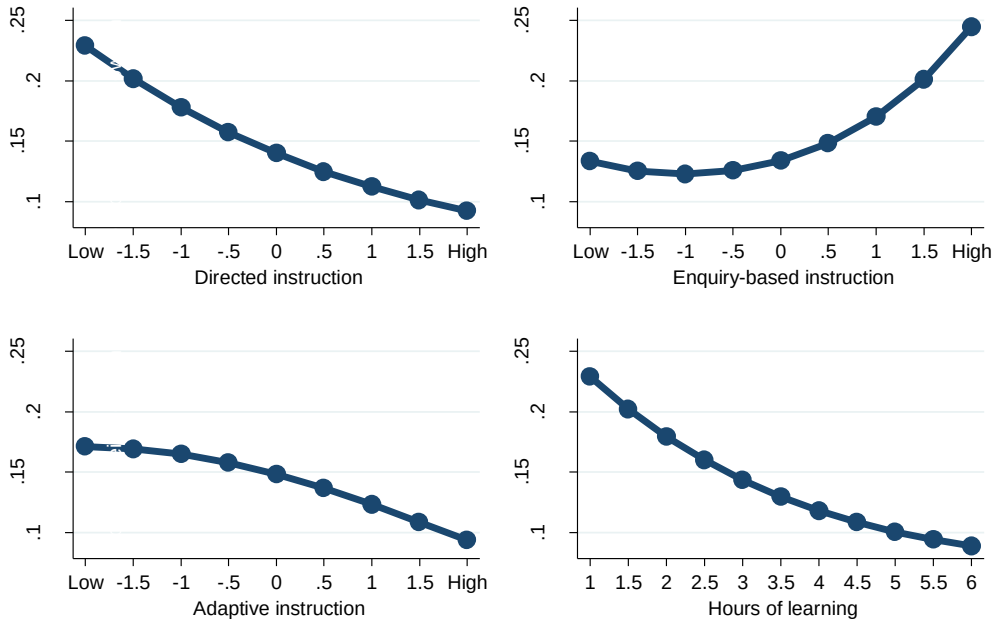
[124] The measures considered in this section are based on three indices (TBTEACH, IBTEACH, ADINST) constructed by OECD using students' responses to multiple questions, which are then aggregated to a continuous scale with approximately mean of 0 and standard deviation of 1. More detailed information can be found in OECD (2017). *PISA 2015 Technical report*.

show how different levels of intensity of the three teaching practices are associated with the estimated probability that a student is classified as a low achiever[126].

Figure 25 shows that, for the EU-24 as a whole, the higher the intensity of both teacher-directed instruction and adaptive instruction, the lower the probability that a given student is a low achiever. The same is true for hours of learning, with more hours of science learning related to a lower probability of low achievement. The strongest associations can be seen between teacher-directed instruction and hours of learning. In classrooms where teachers use directed instruction very rarely, the probability of being a low achiever is expected to be 23 %; where the practice is used very intensively, the probability falls to around 9 %. A similar order of magnitude is found for hours of learning. On the other hand, changing the intensity of adaptive instruction from very low to very high is associated with an 8 pps reduction in probability of being a low achiever (17 % vs 9 %).

Interestingly more frequent use of enquiry-based instruction in the classroom appears to be associated with a higher probability of a student being classified as a low achiever, raising it from below 15 % to 25 %. It is also worth noting that this teaching practice is associated with worse student outcomes only when it reaches a high intensity.

Figure 25 — Relations between the probability of being a low achiever in science, three types of teaching practices and hours of learning



Source: Calculations by the European Commission's Joint Research Centre using PISA 2015 data The graphs show expected probabilities of being a low achiever at different levels of the four variables of interest, holding all other variables at the EU average. Estimates based on the logistic regression model described above.

[125] MT, RO, SI and SE were excluded from the analysis as at least one of the variables used in the model is missing.

[126] Results are based on logistic regression modelling performed on the pooled sample of 24 EU Member States for which information is available, with country fixed effects and probability weights. The dependent variable in the logistic regression is a binary variable equal to 1 if the student is a low achiever in science, and 0 otherwise (based on 10 plausible values). The variables of interest refer to hours of learning and the teaching practices defined above. The model controls for several student, classroom and school input factors (e.g. gender, socio-economic status, class size, ability grouping, motivation level and perceived feedback). The results in this section show the predicted probabilities for different combinations of the variables of interest, with the other control factors held fixed.

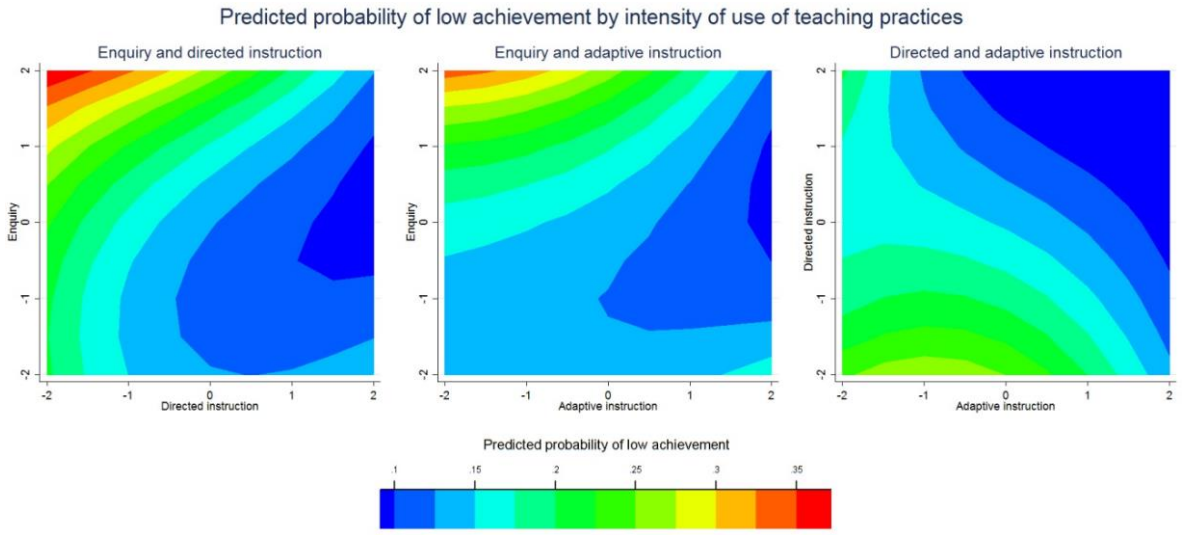
The relationships between low achievement and teaching practices are largely confirmed when one looks at individual EU Member States.

It should be noted that some teaching practices could be complementary to others. This would be the case if the possibility given to students to design and implement their own experiments were preceded (or followed) by the teacher explaining the contextual and cognitive elements that are relevant for the experiment. In such cases we would expect that increasing the intensity of students' experimentation without simultaneously increasing teachers' guidance would not lead to higher educational outcomes[127].

To provide insights about combinations of different instructional practices in the science classroom in EU Member States, the following paragraphs examine the intensity of use of several teaching practices simultaneously.

Figure 26 reports on the likelihood of being a low achiever given two different teaching practices at a time. Each coloured area identifies a set of combinations of two teaching practices that give the same probability of observing a student that is a low achiever. For instance, in the left-hand panel, the darker blue area identifies values for the teacher-directed (horizontal axis) and the enquiry-based (vertical axis) indices for which the probability of being a low achiever is the lowest (10 %). By contrast, the red area identifies combinations of values for the same two teaching practices that are associated with the highest probability (35 %) of being a low achiever. Similar considerations apply to the other two graphs, where we look, respectively, at: i) central panel: adaptive instruction (horizontal axis) and enquiry-based (vertical axis); ii) right-hand panel: adaptive instruction (horizontal axis) and teacher-directed (vertical axis).
The areas in light and dark blue are particularly interesting as they correspond closely to the policy objective of reducing the share of low achievers.

Figure 26 — Combined relations between expected share of low achievers in science and the three types of teaching practices



Source: Computations by the European Commission's Joint Research Centre on PISA 2015 data.
Note: The graphs show expected probabilities of being a low achiever at different levels of the variables of interest, holding all other variables at the EU average. Estimates based on the logistic regression model described above, using the first plausible value for the science score.

[127] The figures presented so far arise from models where the standard ceteris paribus hypothesis holds; this implies that when analysing the association between an individual factor and the probability of low achievement, all the other variables (including the other teaching practices) are kept fixed. However, if some teaching practices are complementary to others, we should test whether the effect of one of them is affected by the values of the other practice. This forces us to abandon the ceteris paribus assumption and consider different values for the combined teaching practices.

Our results support the hypothesis of a complementarity between teacher-directed and enquiry-based teaching. While increasing the amount/share of enquiry-based teaching alone leads to a higher likelihood of a student being low-achieving (and particularly so for low levels of teacher-directed teaching), the combination of teacher-directed and enquiry-based methods generates low and very low probabilities of being a low achiever. These two teaching practices seem to work well together in a situation where teachers combine the presentation of concepts, theories and measurement with students' experimentation.

A very similar analysis applies to the relationship between enquiry-based and adaptive instruction: the latter can be a powerful tool to complement students' experimentation. Teacher-directed instruction and adaptive instruction complement and substitute for each other.

The analysis shows that the way science is taught can be significantly associated with students' performance. In particular, combining different teaching practices has been found to improve the performance of low achievers. This is in line with research showing that high-quality teaching involves the use of diversified instructional strategies[128].

However, it should also be kept in mind that, besides teaching practices, factors that improve the effectiveness of general teaching have their own impact, especially if the goal is to improve the performance of low achievers[129]. For example, providing good quality initial teacher education, promoting effective collaboration among teachers and offering teachers professional development programmes that help them address the needs of different groups of students are all policies that increase the effectiveness of teaching activities and especially benefit low achievers. Finally, it is important to remember that factors such as students' socioeconomic background, the school environment and school resources also have an impact on students' learning outcomes.

2.5 Recent graduates on the labour market and in vocational education and training

Key findings

Recent graduates[130] now have better job prospects than in earlier post-crisis years with 80 % of them in employment in 2017 (against the 2020 target of 82 %). In several Member States, the employment rates of recent graduates are higher than those of the general population with a comparable level of education.

Work-based learning experiences during studies and apprenticeships give a further boost to employability. Unfortunately, only 43.8 % of young people receive such an experience during studies.

In countries with fragmented transition systems, many young people (up to 50 %) do not have labour-market relevant qualifications from either vocational or higher education and training. This inhibits their transition to the labour market and likely has a negative impact on the overall employability of young people.

[128] Creemers, B. P. M. and Kyriakides, L. (2008). The dynamics of educational effectiveness: A contribution to policy, practice and theory in contemporary schools.
Furtak, E., Seidel, T., Iverson, H. and Briggs, D. (2012). Experimental and Quasi-Experimental Studies of Inquiry-Based Teaching: A Meta-Analysis. Review of Educational Research, 82(3), 300-329.
McKinsey and Company (2017). Drivers of student performance: Insights from Europe.

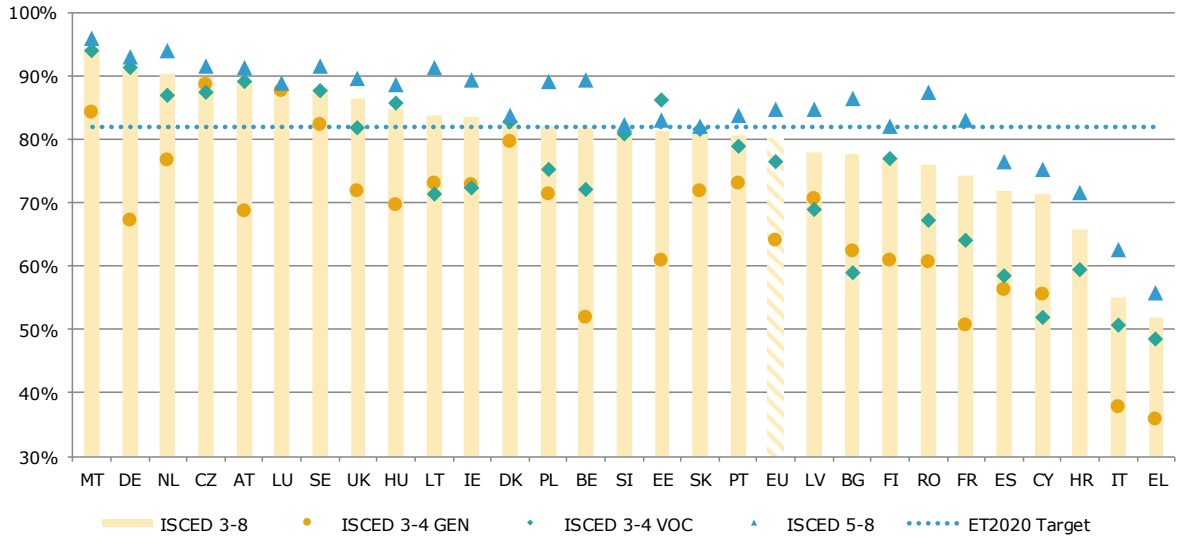
[129] Kyriakides, L., Charalambous, C. Y., Demetriou, D. and Panayiotou, A. (2014). Using PISA studies to establish generic models of educational effectiveness. In R. Strietholt, W. Bos, J.-E. Gustafsson, and M. Rosén, ed., *Educational Policy Evaluation through International Comparative Assessments*., pp. 191-206;
OECD (2014). *TALIS 2013 Results: An international perspective on teaching and learning*.

[130] Recent graduates for statistical purposes are defined as aged 20-34 having completed education 1-3 years before the survey with a high-level qualification diploma (ISCED levels 5-8) and who are currently not enrolled in any further formal or non-formal education or training

2.5.1 Graduate employability

The employment rate of recent graduates in the EU has been increasing since 2011 in line with the growing employment rates of the overall working-age population. In 2017, the employment rate of recent graduates from upper-secondary, post-secondary non-tertiary and tertiary education reached 80.2 %, with marked differences depending on the level and field of education[131]. It was 84.9 % for tertiary graduates, 76.6 % for those with upper-secondary or post-secondary vocational qualification and 64.1 % for those with a general upper-secondary qualification. Figure 27 shows employment rates of recent graduates in each Member State.

Figure 27 — Employment rate of recent graduates, 2017



Source: EU Labour Force Survey, Eurostat. Online data code: [edat_lfse_24].
Note: the indicator measures the employment rates of people aged 20-34 who successfully completed education 1-3 years before the survey with a medium-level qualification (ISCED levels 3 and 4) or high-level qualification (ISCED levels 5-8), and who are currently not enrolled in any further formal or non-formal education or training, out of the people in the same age group. Data is not available in SI and HR or `ISCED 3-4 GEN´ and in LU for `ISCED 3-4 VOC'.

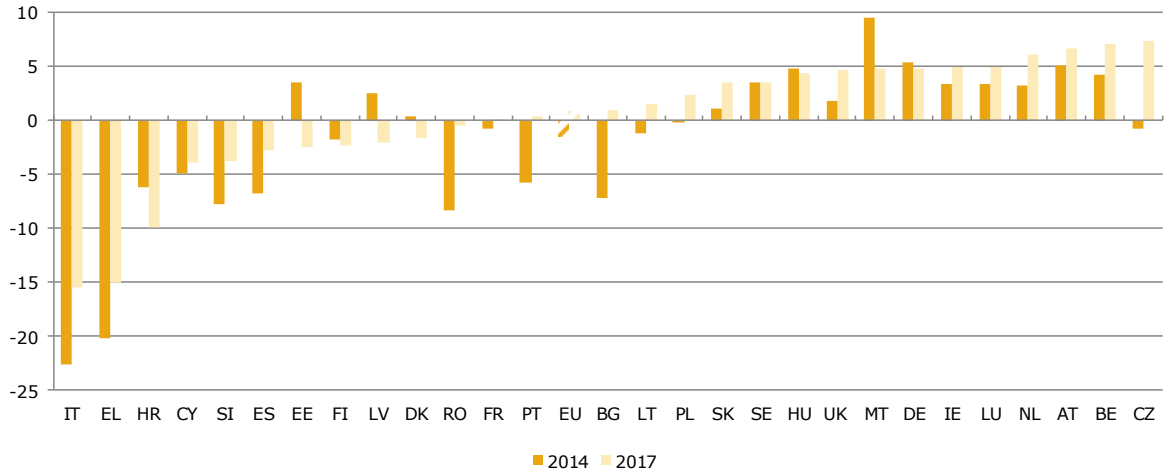
The employability of recent graduates is assessed by comparing the employment rates of recent graduates with that of the overall working-age population that has a corresponding level of educational attainment. The employment rate is only one of the important indicators of graduate employability; for example other important aspects include pay and job quality.

In 2017, the employment rate of recent graduates (calculated excluding those still in education or training) from higher education in the EU was 0.9 pps higher than the rate for all working-age adults with the same educational attainment. This points to an employment premium for recent graduates. The largest employment premium was evident in Belgium, the Czech Republic, Austria, the Netherlands and Malta. In most EU Member States the employment premium increased between 2014 and 2017, except in Croatia, Estonia, Latvia, Malta and Denmark.

In some Member States, however, recent tertiary graduates are still at a major disadvantage. This is the case notably in Italy, Greece, Croatia, Cyprus, Slovenia and Spain, even if the situation in some of these countries has improved since 2014.

[131] With regard to varying employment rates by field of education, some analysis have been presented in ET Monitor 2017.

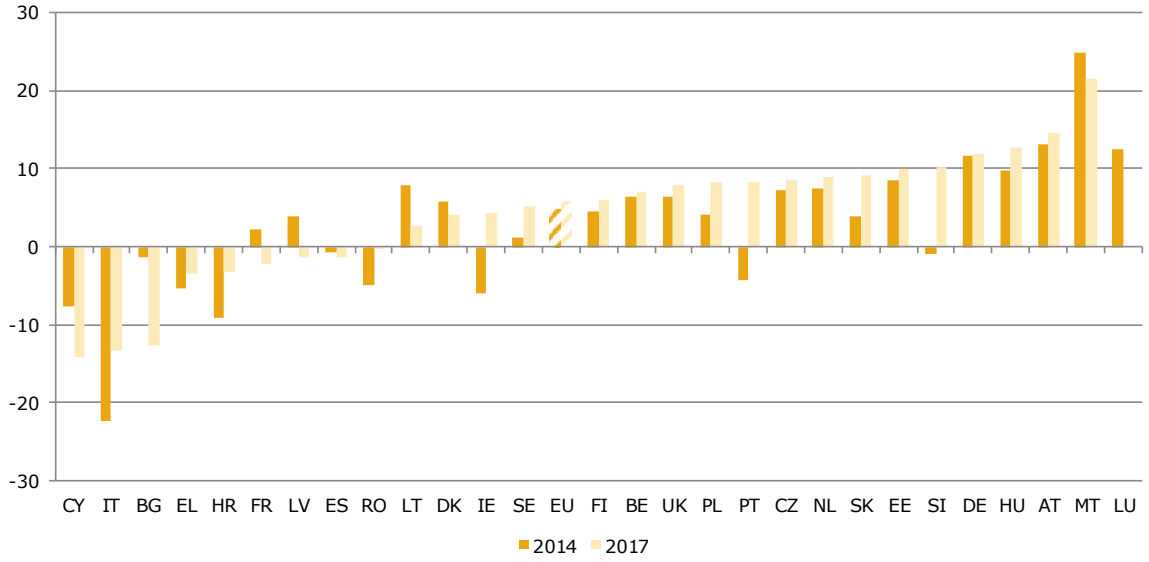
Figure 28 — Employment premium of recent tertiary graduates, 2014-2017



Source: EU Labour Force Survey, Eurostat. Online data code: [edat_lfse_24] and [lfsa_ergaed].
Note: employment premium (positive or negative) is the comparison of the employment rate of recent graduates aged 20-34 having completed education 1-3 years before the survey with a high-level qualification diploma (ISCED levels 5-8) and who are currently not enrolled in any further formal or non-formal education or training with the employment rate of the 'working age' reference population —adults aged 15-64 holding a high-level qualification diploma (ISCED levels 5-8). A positive premium indicates that employment rate of recent graduates is higher, while a negative rate indicates that employment rate of recent graduates is lower, than in the reference population.

Similarly to recent tertiary graduates, those who have recently completed an upper-secondary or post-secondary, non-tertiary programme of vocational education and training (VET) orientation benefit on average from an even higher employment rate premium (5.7 pps in 2017) than tertiary graduates. The employment rate premium was largest in Malta, Austria, Germany and Hungary, and smallest (negative) in Italy, Cyprus and Bulgaria. On average the premium has grown in the EU since 2014. It has improved in Slovenia, Portugal, Ireland, Italy and Croatia but substantially deteriorated in Bulgaria and Cyprus.

Figure 29 — Employment premium of recent graduates from VET 2014-2017



Source: EU Labour Force Survey, Eurostat. Online data code: [edat_lfse_24] and [lfsa_ergaed].
Note: employment premium (positive or negative) is the comparison of employment rate of recent graduates aged 20-34 having completed education 1-3 years before the survey with a medium-level

qualification (ISCED levels 3-4) of a vocational orientation and who are currently not enrolled in any further formal or non-formal education or training with the employment rate of the 'working age' reference population —adults aged 15-64 possessing a medium-level qualification (ISCED levels 3-4). A positive premium indicates that the employment rate of recent graduates is higher, while a negative rate indicates that employment rate of recent graduates is lower, than in the reference population. Data is not available for LU in 2017.

2.5.2 Young people in transition

As shown in the previous section, a successful transition from education to work strongly depends on the educational pathway chosen and the highest level at which education is completed. This section provides more detailed information on those transition pathways, based on the data from the Labour Force Survey (LFS) ad-hoc module on young people in the labour market, collected in 2016 and published in early 2018.

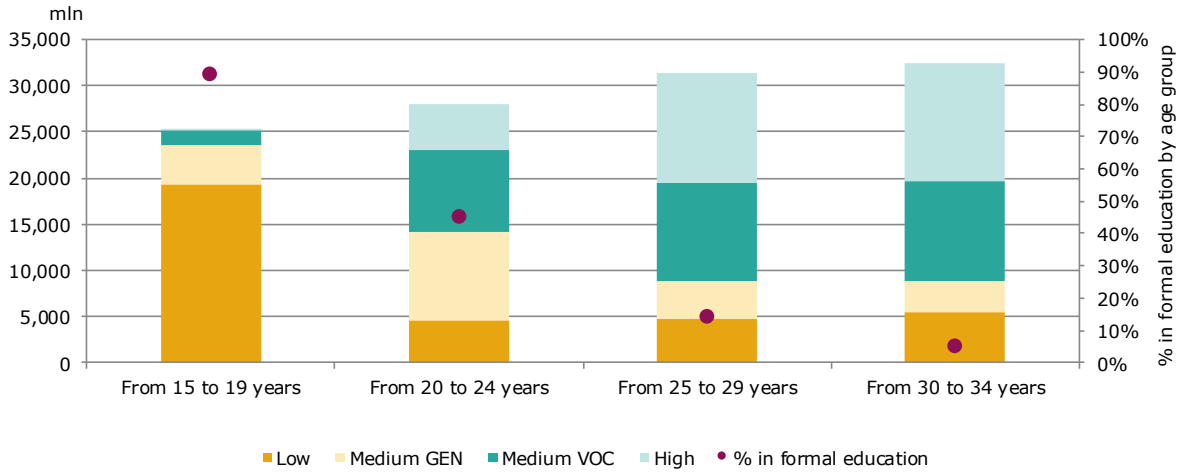
In 2016, there were almost 120 million young adults aged 15-34 in the EU-28, with almost 36 % of them (42.5 million) enrolled in formal education and training[132]. The latter falls into two main groups. Firstly, these are young adults who have at most a lower-secondary qualification (45.8 % of all enrolled in formal education), mostly belonging within the age group 15-19 and thus likely still enrolled in upper secondary education. Secondly, around a third (29.3 %) of young people in formal education had at most a general upper-secondary qualification, mostly belonging to the age group 20-24 and thus likely predominantly enrolled in first stage of tertiary studies. The percentage of young adults enrolled in formal education and training even if they already possess an upper-secondary vocational qualification or a tertiary qualification was much smaller — correspondingly 9.6 % for VET and 12.2 % for higher education.

This data also shows that very few young adults who did not attain an upper secondary qualification were still in some kind of formal education or training after the age of 19. This indicates a failure across the EU to provide them with flexible pathways or 'second chance' opportunities to continue learning. Furthermore, the majority of young adults with a low educational attainment level aged 18-24 who are no longer enrolled in formal education and training declare that they never started learning at a upper-secondary level (2.7 million), in contrast to those who started but did not complete it (0.9 million). By comparison, there were 4.7 million low-educated young adults aged 20-24, of which 3.4 million reported that they were not enrolled in any formal education or training. Taken together, all this shows that most of these young adults report attaining a less than upper-secondary educational qualification and then leave formal education (most usually without returning) right after.

Similarly, the majority of 15-34 year-olds who hold an upper-secondary level qualification and are not currently enrolled in formal education and training report never having started higher-level studies (29.5 million), rather than dropping out (3.3 million). Of those who have prematurely withdrawn from tertiary studies, 53 % had a vocationally oriented upper secondary qualification. Vocational graduates also have a lower propensity to enrol in tertiary education in the first place — 26 % of 18-24 year-olds with a vocational qualification continued their studies in higher education, compared to almost 80 % of those with a general qualification.

[132] Based on the 2016 LFS ad hoc module on young people in the labour market. If comparing LFS to administrative data (UOE, 2016), the latter shows a larger number of enrolled students, in part possibly due to the inclusion of non-resident (foreign) students (foreign students are not included in LFS data), differing definitions and other reasons.

Figure 30 — Educational attainment and participation in formal education of young people aged 15-34 by age group, 2016



Source: EU Labour Force Survey, Eurostat. Online data code: [lfso_16feduc].
Note: Low level of education includes qualifications at ISCED levels 0-2; medium level of education includes qualifications at ISCED levels 3-4; high level of education includes qualifications at ISCED levels 5-8; 'GEN' denotes qualifications of general orientation and 'VOC' — of vocational orientation.

By the age of 30, a large majority of young adults no longer participates in formal education systems (the participation rate in formal education or training of those aged 30-34 is 5 %). This age group is therefore most indicative of what type and level of educational attainment national education and training systems have delivered. In 2016, 39 % of young adults in the EU-28 aged 30-34 had a tertiary educational qualification (corresponding to the definition of EU tertiary attainment target, as analysed in section 2.2). In addition, 33 % of young adults within the same age group had an upper-secondary qualification of a vocational orientation. The remaining 28 % did not have a qualification with direct access to the labour market — either they had an upper-secondary qualification of a general orientation or at most a lower secondary qualification and a low-qualified adult by that age.

An analysis of the country-level data on the educational attainment of the 30-34 age group shows there are four main groups of countries regarding the transition systems and links to the labour market:

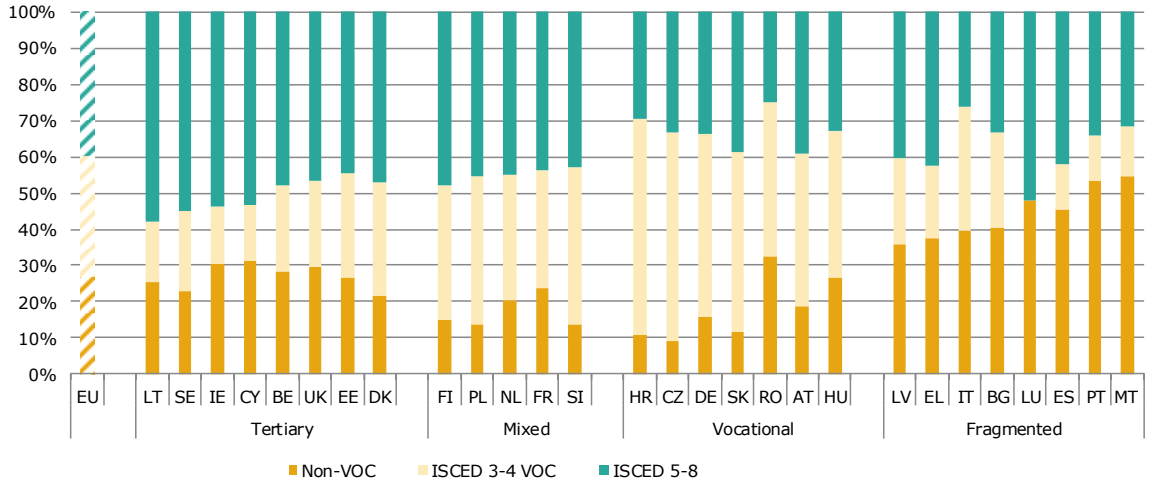
- countries with a predominant tertiary education system which is responsible for providing the largest proportion of young adults (40 % or more) with an entry to the labour market;
- countries where both tertiary and vocational sectors have a significant (above EU average) presence, and that therefore offer a balanced mix of pathways;
- countries where the largest proportion of young people (40 % or more) enter the labour market through a vocational education and training pathway; and
- countries with fragmented pathways, in which a large minority of young people (at least one third) do not acquire a labour market-relevant qualification at all (having only a general upper-secondary qualification or lower).

This classification of countries is presented in Figure 31. Three countries — Denmark (in part due to a high share of 'unknown' answers), Estonia and France — are borderline cases between tertiary and mixed systems, however with VET sector much more prevalent in France.

From this analysis, the first policy conclusion is that countries with fragmented transition systems need to make a much more substantial effort to ensure young people get better opportunities to access education pathways leading to qualifications relevant for the labour market. It is likely that in these countries, most of them (i.e. Greece, Portugal, Spain and Italy) facing major youth employability challenges are partly driven by the difficult transition from education to the job market. The second conclusion is that countries face broad choices over how to construct transition pathways, which might be based predominantly on higher education,

on VET, or on a balanced combination of both. Thought has to be given, however, to how effective the selected pathway for each country is, including its effects on employability, skills mismatch and overall alignment with the country's industrial needs and economic structure. Such analysis would however require a review of a number of additional indicators, which is beyond the scope of this analysis.

Figure 31 — Transition pathways from education to employment (30-34 years), 2016



Source: EU Labour Force Survey, Eurostat. Online data code: [lfso_16feduc].
Note: Non-VOC qualifications includes qualifications at ISCED levels 0-2 or a medium-level qualification (ISCED 3-4) of a general orientation; ISCED 3-4 VOC are qualifications at a medium (ISCED 3-4) level with a vocational orientation ISCED 5-8 includes a high level of education qualifications.

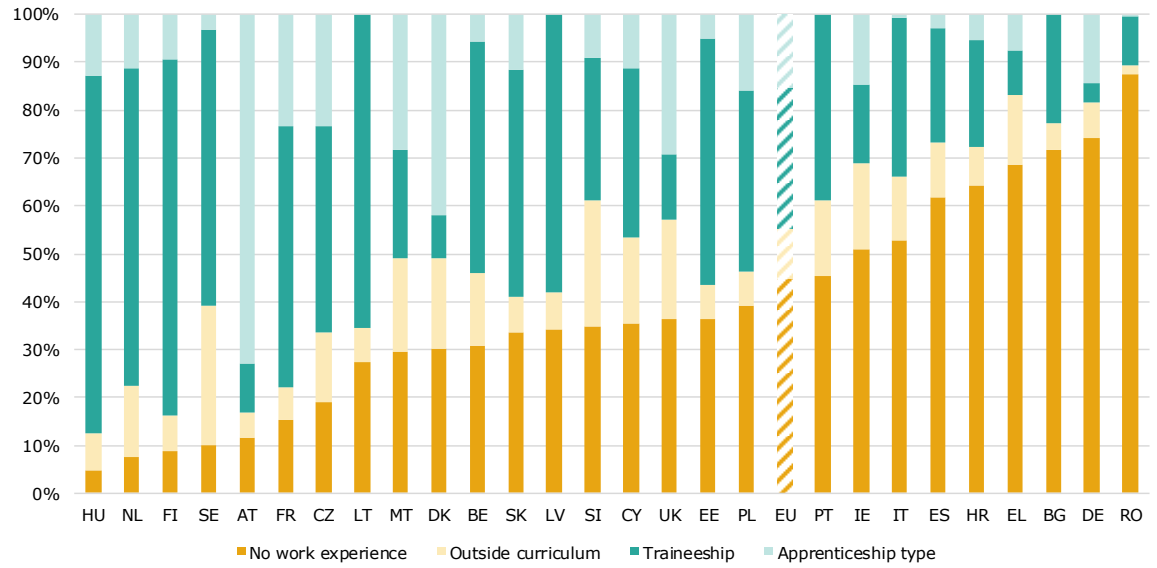
2.5.3 Work-based learning in enterprises as part of formal education and training programmes: prevalence and outcomes

Learning, in formal or in non-formal settings, can primarily take two forms: theoretical learning (reading or theoretical instruction by another person) or practical (simulating or actually carrying out real-world tasks). This second approach — in a wide sense called 'work-based learning' — has long been an important feature of education and training systems. The results of the LFS ad hoc module on young people in the labour market, carried out in 2016, brought new data on and insights into the prevalence and outcomes of work-based learning (understood in this case in the narrow sense as learning by doing actual work in an external company or institution). In particular, the new data collected provides insights into the extent to which young people, as part of their formal education and training, have acquired real-world work experience; whether this experience was voluntary work or paid; and whether it was part of or linked to the curriculum and other features. The new data also makes it possible to identify the prevalence and outcomes of apprenticeships — a specific form of work-based learning in companies that has lately attracted substantial policy interest around the world. For operational definitions used in this analysis, see the explanatory notes below the charts.

The analysis below looks into the prevalence and outcomes of work-based learning in the two key education sectors preparing people for employment: upper secondary education with a vocational orientation, and tertiary education. These two sectors comprise nearly 75 % of the young adult population (aged 30-34) in terms of their final highest educational attainment. The two sectors are indicative of the two key pathways available for young people to prepare for and enter the labour market. In both sectors, different ways of acquiring practical work experience are available — from doing short or long-term work in parallel to learning/studies, to gaining work experience as an integral part of the curriculum. Such work experience can differ in duration (current data distinguishes between experiences of less than 6 months and 6 months or more), remuneration (whether salary is paid or not) and the obligatory or optional nature of the experience. Overall, in the EU-28 in 2016, 32 % of those holding a tertiary degree and 44 %

of those holding an upper-secondary qualification of a vocational orientation stated that they had acquired no practical work experience during their studies.

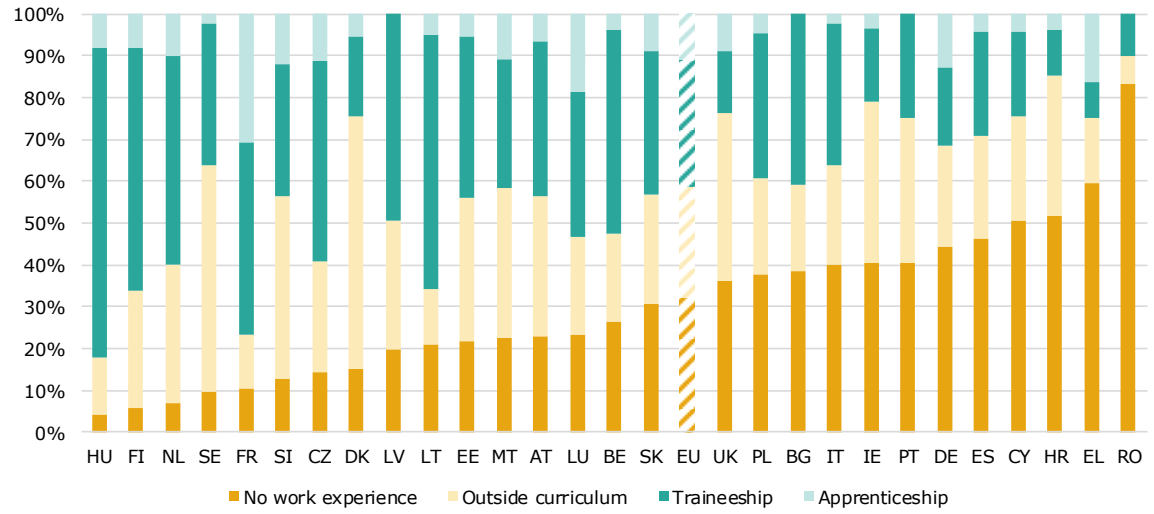
Figure 32 — Work experience during studies in VET (15-34 years), 2016



Source: EU Labour Force Survey, Eurostat. Online data code: [lfso_16feduc].
Note: the data covers young adults aged 15-34, holding an upper-secondary or post-secondary non-tertiary qualification (ISCED levels 3-4) with a vocational orientation. Work experience include any type of work experience gained while studying, distinguishing work-experience outside curriculum and work-experience as part of curriculum. Work experience as part of curriculum include two types: *Apprenticeship* — a mandatory, curriculum-related activity lasting at least 6 months and trainee must be paid for his work; and T*raineeship* — any other curriculum-related work experience, either paid or not, mandatory or optional and can be of any duration. On data quality: data for DE might not be representative due to a large number of non-response. Data is not available for LU; for 'Apprenticeship' in BG, LV, LT and PT.

In most countries traineeship is the main form of providing work experience during vocational education and training for learners. Only a handful of countries (for example Austria, Germany and Denmark) predominant apprenticeship systems. There is a wide variation in exposure to work experience between countries, with more than 90 % of students acquiring it in Hungary, the Netherlands or Finland but only around 10 % of students in Romania doing so. In some countries a substantial number of students also acquire work experience which is not part of their curriculum, notably in Sweden, Malta, Denmark, Slovenia and the UK, possibly doing part-time work outside of their studies.

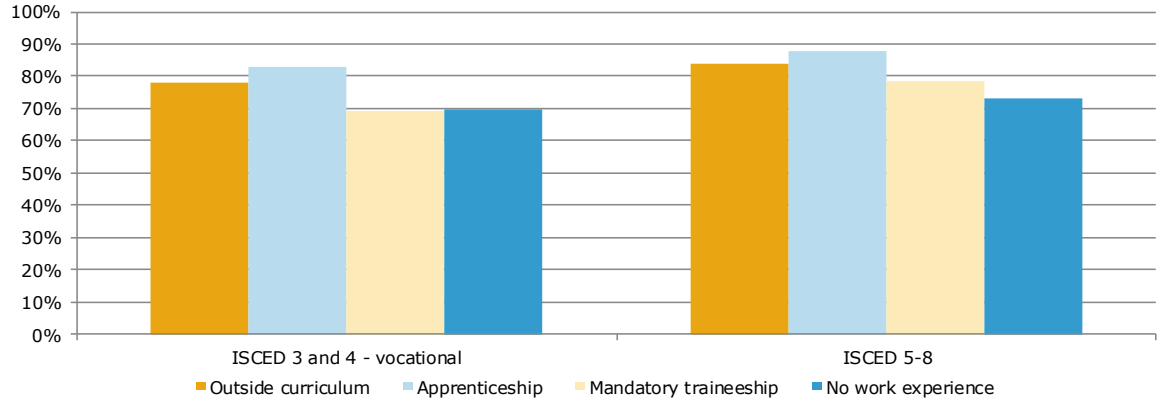
Figure 33 — Work experience during tertiary education studies, 2016



Source: EU Labour Force Survey, Eurostat. Online data code: [lfso_16feduc].
Note: the data covers young adults aged 15-34, holding a tertiary degree (ISCED levels 5-8). Data is not available for 'Apprenticeship type' in BG, LV, PT and RO. Work experience include any type of work experience gained while studying, distinguishing work-experience outside curriculum and work-experience as part of curriculum. Work experience as part of curriculum include two types: *Apprenticeship* — a mandatory, curriculum-related activity lasting at least 6 months and trainee must be paid for his work; and T*raineeship* — any other curriculum-related work experience, either paid or not, mandatory or optional and can be of any duration.

In tertiary education, again the predominant form of acquiring work experience is via traineeships. However, work experience outside the curriculum plays a much more important role, in particular in Denmark, Sweden and the UK. In several countries, apprenticeship-type work experience also plays a notable role, particularly in France but also in Luxembourg and Greece. Again, a wide variation between countries on the extent of exposure to work experience is evident; it ranges from more than 90 % in Hungary, Finland and the Netherlands to less than 20 % in Romania or Croatia.

Figure 34 — Work experience during studies and employment outcomes, 2016



Source: EU Labour Force Survey, Eurostat. Online data code: [lfso_16emprt].
Note: the data covers young adults aged 15-34, holding either an upper-secondary or post-secondary non-tertiary qualification (ISCED levels 3-4) with a vocational orientation or a tertiary degree (ISCED levels 5-8).

Meaningful work experience during education or studies in most cases increases the likelihood of being employed afterwards. In the EU-28, on average, the percentage of employed adults without any actual work experience during their studies is 69.6 % for those holding an upper-secondary qualification with a vocational orientation and 73.3 % for those with a tertiary

degree. For those who had the chance to experience apprenticeship, the share of young adults in employment who hold a vocational qualification is more than 13 pps higher, at 82.8 %; and the share of those who hold a tertiary degree is more than 14 pps higher, at 87.7 %. The data also shows that traineeships have limited impact, providing only a very marginal benefit over no real work experience at all. Own-initiative work experience outside the curriculum seems to be more beneficial, but the strongest benefit nevertheless stems from systematic, long-term and curriculum-related work experience provided via apprenticeship or apprenticeship-type training. This also brings about cost-sharing between individuals, employers and the public sector. However self-selection effects would need to be controlled for to distinguish more reliably the employment premium brought by different types of work experience.

2.6 Adult learning

Key findings

Available data on adult learning depicts a complex and uneven picture across the EU. As in previous years, there has been little progress towards the 2020 target of at least 15 % of adults (aged 25-64) having taken part in learning. Nevertheless some northern European Member States saw further improvement in their already high levels of adult education.

Financial incentives for private sector employers, primarily SMEs, to invest more in training their employees are under-used. Only a few countries make broad use of such incentives. It is also a constant challenge to engage low-qualified adults in learning.

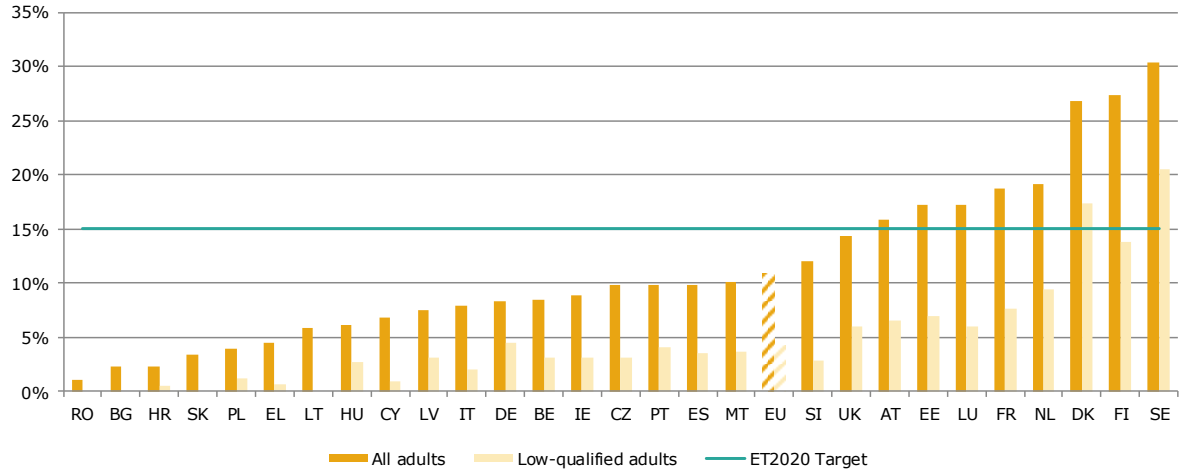
Combining the efforts of the private and public sectors and the individuals concerned could make a more significant and positive change.

2.6.1 Adult participation in learning

Despite the long-term policy priority of promoting adult participation in learning in the EU, the participation rate remains low. The ET2020 lifelong learning benchmark, defined as recent participation (during the 4 weeks prior to the interview) in any institutionalised learning activity, has been stagnant in the EU for the last decade. In 2017, only 10.9 % of adults had undertaken any recent learning activity. This was almost identical to the rate of 10.8 % in 2014 and only a little higher than the rate of 9.3 % in 2010 (mostly due to improvements in the precision of data collection in a few countries, most notably in France) (see figure 35)[133]. Only in a few countries — most of them in northern Europe (Estonia, Sweden, Finland) — could a consistent and considerable increase in learning towards the benchmark be observed. Conversely, some countries, most notably the UK, Slovenia and Denmark (though with break in time series), witnessed a substantial decline in the rate of adult participation in learning since 2010.

[133] The stagnation of this adult learning has a long history interrupted by the breaks in time series with the first breaks visible already in the 1990s. In 2003, an additional LFS module on adult learning triggered breaks in most Member States together with high upward changes from year to year. Thus, the EU average increased from 7.1 % in 2002 to 9.1 % in 2004 and remained at a similar level until the beginning of the present decade. Thanks to such breaks in some countries the EU average rose to nearly 11 % between 2013 and 2017. Almost all such breaks and the sudden upward changes occurred in non-formal education. If we take the breaks in consideration, the stagnation of adult learning has lasted at least since the 1990s.

Figure 35 — Adult participation in learning during the last 4 weeks age 25-64, 2017



Source: EU Labour Force Survey, Eurostat. Online data code: [trng_lfse_03]. Data for SK and BG for 'low qualified adults' are missing due to poor data quality.

The participation of low-qualified adults — i.e. those who did not acquire at least a medium-level qualification (or an equivalent of at least an upper-secondary school diploma) — remained particularly low. Despite some marginal improvement in the overall participation rate, the situation for low-qualified adults has not changed noticeably since the beginning of the decade. The participation rate rose from 3.9 % in 2010 to 4.5 % in 2015, but then slipped back to 4.3 % in 2017. It should be noted, however, that from the beginning of the last decade the percentage of low-qualified adults (25-64) in the EU has dropped significantly — from over 34.1 % in 2002 to 22.5 % in 2017[134] — with the lowest percentages occurring in Lithuania (5.2 %), in the Czech Republic (6,2 %) and Poland 7.9 %). With lowering the target group of low-skilled adults, it is expected that they will need more intensive support. In an ever smaller group of excluded, there will remain people in the most difficult situation.

2.6.2 Measuring adult learning

In an ageing continent such as Europe, adult learning is an important policy priority, and it is becoming more important due to the increasing spread of automation and development of robotisation technologies but also because of the increasing importance of upskilling throughout life as people move between employment statuses many times throughout their career[135]. However, policies promoting accessible adult education for all still prove difficult to implement effectively[136].

A first key characteristic of adult learning is that it is mostly non-formal and informal, not regulated, most frequently financed and provided by the private sector (as compared to school/university education, which is mostly formal, regulated, financed and provided largely by the public sector).

134 Eurostat data code: [edat_lfs_9903]

135 Bughin, J.; Lund S. and Hazan, E. (2018). *Automation Will Make Lifelong Learning a Necessary Part of Work. Harvard Business Review*, 24 May 2018.
Sikka, V. (2017). *Life-long learning will be crucial in the AI era*. Financial Times, 17 January 2017.
The Economist (2017). *Equipping people to stay ahead of technological change*, print edition of 14 January 2017.

136 World Economic Forum (2018). *We have the tools to reskill for the future. Where is the will to use them*?, a blog from the World Economic Forum Annual Meeting of 23-26 January 2018.

Given the recent evolution of adult learning systems linked to the needs of the post-industrial economy, efforts to develop statistical measures of adult learning are still under development[137]. To respond to these needs, Eurostat has developed a classification of learning activities[138] that distinguishes between three basic learning categories:

- formal (intentional, institutional learning of at least 6 months, with official recognition and other specific features);
- non-formal (intentional, institutional learning of any duration, that does not lead to official recognition); and
- informal (intentional but non-institutional learning).

This classification provides the basic framework for measuring adult participation in learning and linking it to other statistical data/ classifications.

The above classification forms the basis for the three main EU statistical data sources on adult learning: (i) the EU Labour Force Survey (LFS) on formal and non-formal education and training; (ii) the dedicated EU survey on adult learning — the Adult Education Survey (AES); and (iii) the dedicated EU survey on continuing vocational training in enterprises (CVTS). The LFS collects annual data on recent adult education and training experiences (any adult participation in education and training during the four weeks prior to the survey interview). The AES is carried out every 5 years and collects a broader set of information on different types of adult learning during the reference period (last 12 months). The results of the third wave of the AES survey (for the reference year 2016) were published in early 2018[139], as were the results of the fifth and latest wave of CVTS (for the reference year 2015), which is likewise carried out every 5 years and focuses on enterprises' training needs, planning, provision and financing[140].

From these data sources we know that the duration of the reference period over which the measurement is done is important when analysing the data. In the EU, two different reference periods are used to measure adults' participation in formal or non-formal learning.

- The first, as also defined officially in the EU benchmark on adult learning, is a recent participation in formal or non-formal education and training carried out during the last four weeks. The second measures learning activities carried out over 12 months.

Formal or non-formal adult learning — is not undertaken frequently, and often only for a short period, so these two measures provide quite different results, as Figure 41 illustrates. In addition, two other factors further increase the divergence between these two measures:

- the relative prevalence of formal learning between countries (in countries with more formal learning the two measures should be more similar while the opposite is true for countries with relatively more non-formal learning); and
- the prevalence of a certain type of non-formal learning — guided on-the-job training — which is covered in the AES and CVTS 12-month period but not the LFS four-week period.

Guided on-the-job training is an important way for employees to share expertise and train new colleagues. However, its prevalence depends on how effectively employers manage human resources and what opportunities they create for learning, with larger companies likely being better at this. This is for example reflected in higher rates of adult participation in learning among employees of larger, as compared to smaller companies.

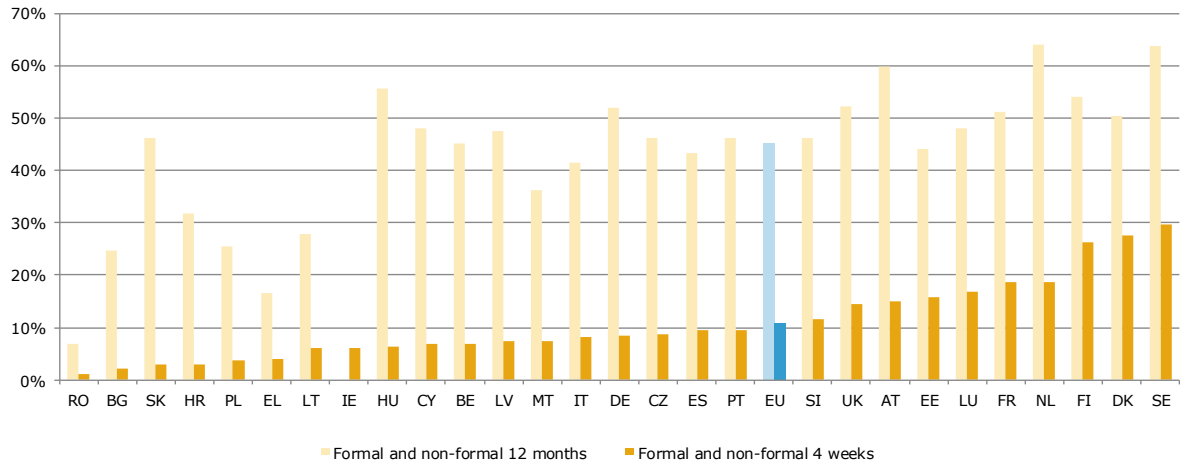
137 UN expert group on international economic and social classifications (in December 2005 recommended that 'the classification and reporting of non-traditional educational and/or recreational and lifelong learning activities should be addressed and solved.

138 Eurostat (2016). *Classification of learning activities (CLA)*. A manual.

139 Eurostat website: *Statistics Explained on the AES* methodology.

140 Eurostat website: *Statistics Explained on CVET*.

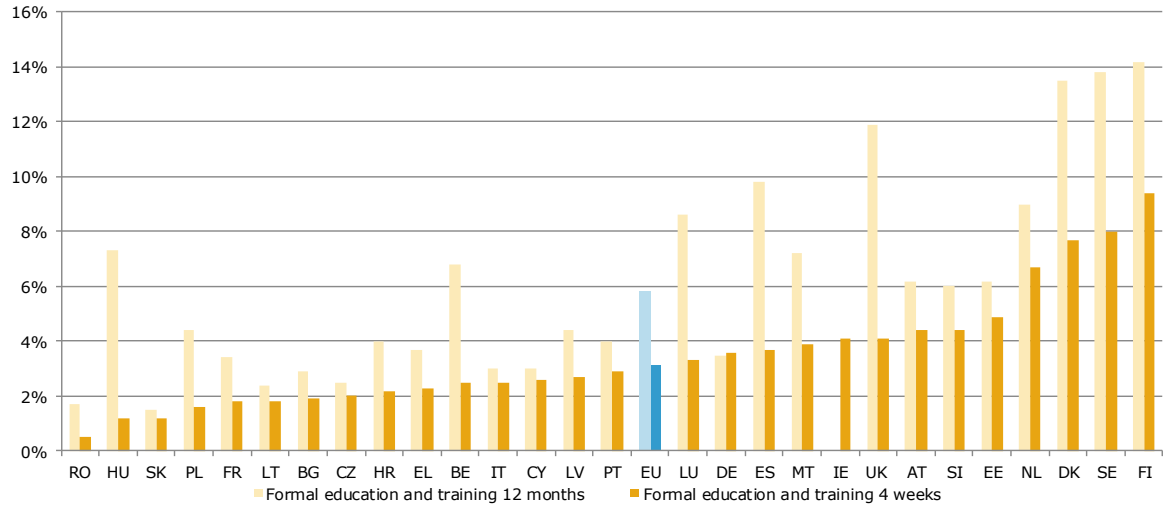
Figure 36 — Share of adults participating in 'formal or non-formal' education and training, 2016



Source: EU Labour Force Survey and Adult Education Survey, Eurostat. Online data code: [trng_lfs_09] and [trng_aes_100].
Note: Figures refer to the age group 25-64. Data for 'Formal or non-formal training in the last 12 months' is not available for IE.

The second key characteristic of formal and non-formal adult learning is its non-formal nature, i.e. the absolute majority of adult learning activities are non-formal, which means that they are intentional and take place in an institution but do not lead to official recognition. For example, in 2016, using the four-week reference period, 10.8 % of adults participated in some formal and/or non-formal learning, while only 3.1 % participated in formal learning. Similarly, in the same year, using a 12-month reference period, 45.1 % of adults stated that they have undertake some formal or non-formal learning, but only 5.8 % stated that they have done any formal adult learning during the year.

Figure 37 — Share of adults participating in formal education and training, 2016



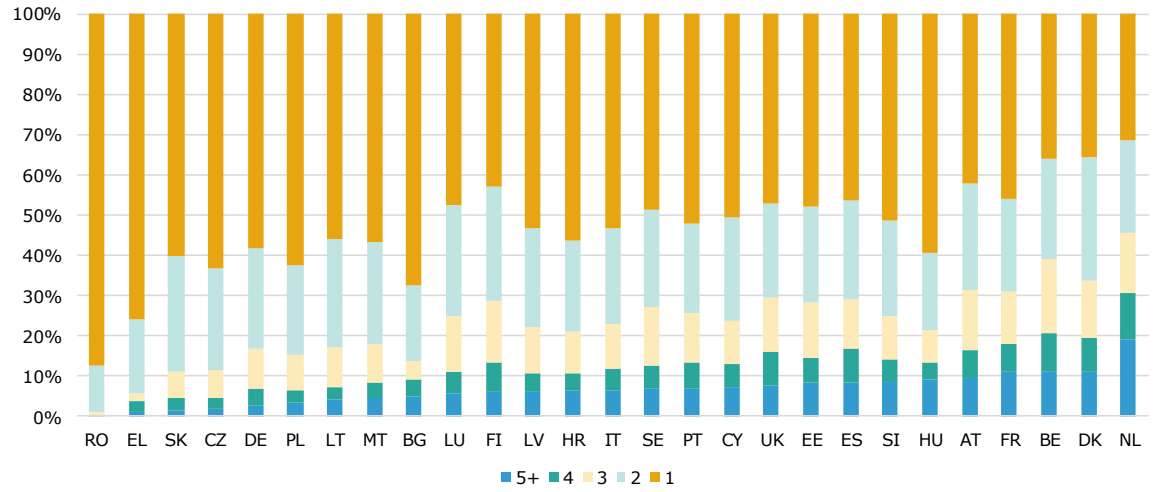
Source: EU Labour Force Survey and Adult Education Survey, Eurostat. Online data code: [trng_lfs_09] and [trng_aes_100]. Figures refer to the age group 25-64. Data is not available for `Formal and non-formal 12 months´ in IE.

As Figure 37 above shows, participation rates in formal education and training with four-week and twelve-month reference periods differ much less within countries as compared to the differences in the overall participation rate. This is easily explained by the fact that participants in formal programmes, due to long duration of those programmes, would likely report their participation in adult learning no matter which four-week period during the year they are interviewed. The differences between countries are not very significant in absolute terms, even if countries with strong adult learning systems (Finland, Sweden and Denmark) provide somewhat more opportunities for adults to enrol in such programmes.

Over a longer period there have been almost no changes in the EU average of adults' participation in formal education and training (according to the LFS: 2004 — 3.3 % and 2017 — 3.1 %; according to the AES: 2007 — 6.6 % and 2016 — 5.8 %). There are also no major changes in this area at the level of Member States. A different situation occurs in the area of adult participation in non-formal education. Changes in this area are more visible in the LFS (as the data exists 1992 and is broken down into formal and non-formal education and since 2004). The data available from 2004 shows a slight progress in the EU average (from 7.3 % to 8.3 % in 2017). However, there are significant changes at the level of Member States, most of which concern sudden and high upward changes of about 1.5 times or even above 3 times — in some cases — from year to year. Such changes has occurred in the majority of EU Member States since 2003, this is since the LFS additional module on adult learning was carried out. Therefore, many of these changes have to be treated with caution due to the particular methodological context, sometimes by broadening the definition of education and training to better capture non-formal forms of learning. Nevertheless, other data sources (AES, CVTS) indicate a more consistent increase in adult participation in non-formal learning.

The third key characteristic of formal and non-formal adult learning is that for most adults, taking part in organised learning is still a very infrequent experience and mostly of short duration (Figure 38). The majority of EU adults report having taken part in at most one formal or non-formal learning activity in a 12-month period. For most countries, only 10 % of the population reports having had five or more learning activities in a year. Only in the Netherlands does a larger share of adults (19.1 % of those that had some learning experience) report having five or more such learning activities in a 12-month period.

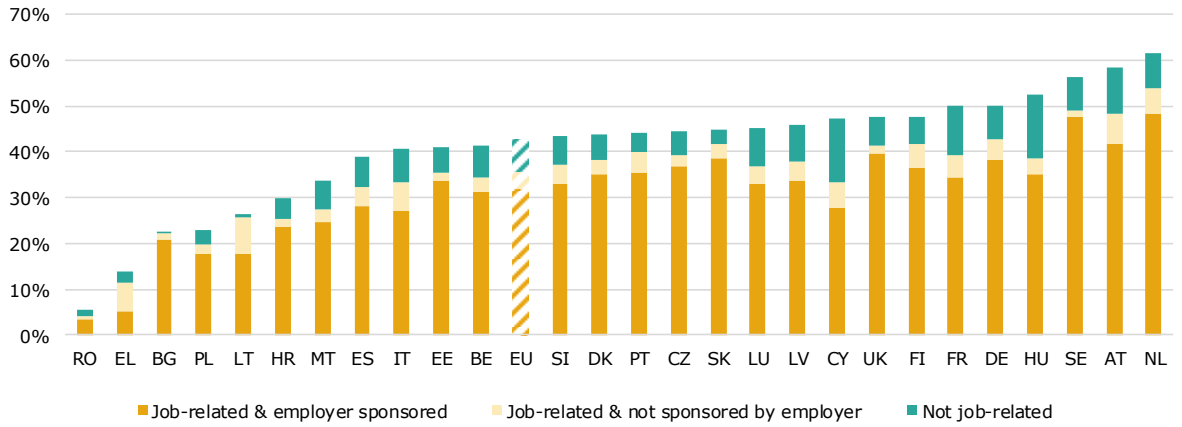
Figure 38 — Share of adults by the number of non-formal learning activities over 12 months, 2016



Source: EU Adult Education Survey, Eurostat. Special extraction for DG EMPL.
Note: Data is not available for IE. Data covers adults aged 25-64.

The fourth key characteristic of adult learning is that for the majority of adults the learning activities are job-related and sponsored by the employing organisation (Figure 39). In 2016, almost three quarters of all non-formal activities in the EU-28 were job-related and employer sponsored adult learning activities.

Figure 39 — Share of adults participating in non-formal adult learning over 12 months, by type, 2016



Source: EU Adult Education Survey, Eurostat. Online data code: [trng_aes_100] and [trng_aes_120].
Note: Data is not available for IE.

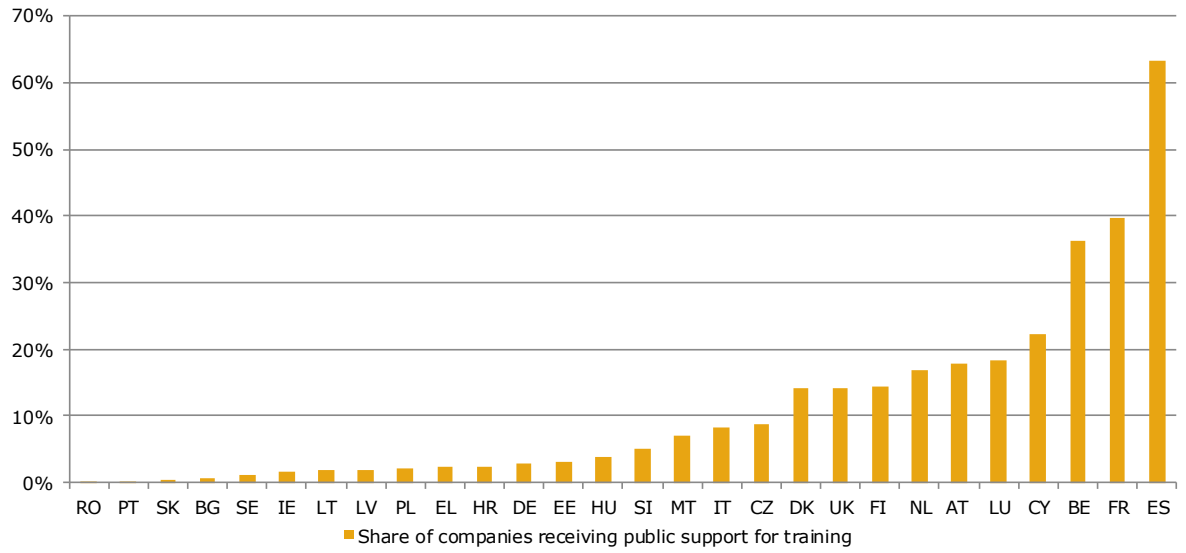
A fifth key characteristic of adult learning is the multiple forms of provision and the multiple, diverse set of players delivering adult learning opportunities. . As a result the total cost of adult learning is difficult to estimate. Nonetheless, in 2015, the total investment by companies in the (private) business economy[141] to provide training for persons employed was 1.7 % of the total labour cost (CVTS[142], 2015). In absolute terms, it was between EUR 80 and 85 billion based on the latest available total labour cost data in 2012 of 4.7 trillion EUR (LCS[143], 2012).

With the average cost in the EU-28 per training participant[144] in 2015 being EUR 1 418, the total spending on training by the private and public sectors combined can be estimated at around EUR 125 billion (derived from the assumption that 31.9 % of the total population aged 25-64 participated in training financed by their employers), assuming that the cost is the same for smaller employers as well as public sector employees. This total amount of 125 billion per year would not include individual spending on adult learning or public financing for 'second chance', integration or active labour market policy programmes.

For comparison, the public sector's total expenditure on formal education and training in 2015 was EUR 714 billion (UOE, 2015). This shows that spending on adult learning corresponds to a significant share of education and training systems' financing, likely in the range of at least 20-25 % of the total expenditure. At the same time, it must also be kept in mind that the adult population is also significantly larger than total population of children and youngsters attending formal education and training programmes from primary education to higher education. In 2016 there were a total of 110 million learners enrolled in formal education and training in the EU, while the total population of adults aged 25-64 was 274 million. Therefore, a much more significant investment in adult learning would be required to realistically provide opportunities for a majority of adults to access adequate and frequent education and training opportunities.

141 Business economy includes industry, construction and services sectors, excluding agriculture, public and non-market sectors and activities of holding companies. See Eurostat glossary.
142 Continuing Vocational Training Survey, Eurostat.
143 Labour Cost Survey, Eurostat.
144 Data refer to participants in CVT courses.

Figure 40 — Share of enterprises receiving public support for training, 2015



Source: EU Continuing Vocational Training Survey (CVTS), Eurostat. Special extraction for DG EMPL.
Note: Public support may include tax incentives, receipts from training funds and EU or national subsidies, or any other. Due to very small number of companies in most countries indicating to having receiving and public support for training, the precision of estimation of the share of companies receiving such support is low (i.e. in RO, PT, SK, BG, SE, IE, LT, LV, PL, EL, HR, DE, EE, HU), but it nevertheless can be reliably concluded that very small proportion of companies do receive such support.

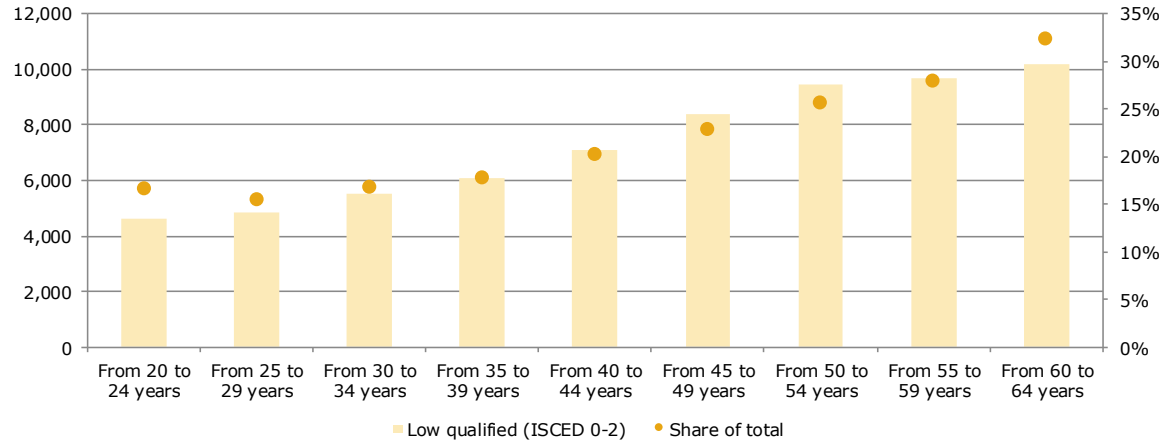
However, despite being high on the policy agenda, the intention of improving participation in adult learning has not been translated into mechanisms to support the major providers of (or investors in) adult learning: private sector companies. In most EU Member States a minority of companies report having received any financial incentives for their training activities. The exceptions are Spain (due primarily to the broad-based tax incentives available there), France (due to broad-based training funds) and Belgium (due to the broad availability of both training funds and governments subsidies). Public investment — whether through active labour market policies, training for public sector employees or broader publicly financed adult learning provision — has likewise lagged behind.

2.6.3 The challenge for low-qualified adults

Particular challenges are faced by low-qualified adults wishing to take part in training. To a limited extent these challenges take the form of objective barriers, such as lack of financing, health or too strict entry requirements to learning programmes. More important, however, are the situational barriers. As seen above, the key providers of and investors in adult learning are companies. If they do not see sufficient benefits of investing in learning for their employees, they will not make that investment. It is also difficult for individuals or the public sector to compensate for these incentive gaps.

As most organised adult learning takes place during paid working hours, combining learning with a full-time job is likely to be challenging; in practice very few adults participate in formal education programmes. Most working adults cannot easily suspend or withdraw from their job to undertake prolonged formal learning programmes without compromising their financial security or facing a significant decline in income (if not a complete loss). Therefore, the best time for intervention would be to make sure that young people do not leave school without a medium-level qualification (ISCED-3; EQF-4) in the first place. For those who have already left school, the only sustainable solution is to provide flexible upskilling programmes, if possible in cooperation with employers, allowing those adults to continue working while studying for a recognised qualification.

Figure 41 — Share and number of low-qualified adults by age, 2017



Source: EU Labour Force Survey, Eurostat. Online data code: [lfsa_pgaed].
Note: Low qualified are adults with at most a lower-secondary qualification (ISCED 2).

The overall number of low-qualified adults has been falling with each younger cohort. For example, in 2017 around 4.6 million young adults aged 20-24 did not possess at least a medium-level qualification, compared with 10.2 million adults aged 60-64. However, the relative decline — i.e. the decline of the share of low-qualified among the total population in the appropriate cohort — has been very slow for the four youngest cohorts in the labour market. This suggests a slowdown in the decline in the low-qualified population. Among those aged 20-24, 17 % were low-qualified — only a marginal improvement compared to the 35-39 age group, where 18 % were low-qualified. Nevertheless, over a long time frame, the number of low-qualified adults (age 20-64) has decreased in EU from about 88 million in 2002 to 66 million in 2017. Overall, the economic prospects for low-qualified adults are challenging. They have significantly lower employment rates across the EU, with an average rate of 67.6 % in 2017. This compares with 78 % for medium-qualified and 83.9 % for highly qualified people. Considering that low-qualified adults generally have skills that only allow them to take up jobs in elementary occupations, already the number of low-qualified adults in the EU-28 exceeds that of elementary occupations by a factor of three (Figure 42). Of course, low-qualified adults sometimes also have good job-specific skills for other occupations — around two thirds of employed low-qualified adults work in occupations other than elementary ones. However, they might be working in occupations which could potentially be modified by technology or automated completely and would need to access opportunities to re-qualify for different jobs. But, as seen from the analysis earlier in this section, the majority of them do not participate in any further education or training: in 2017 on average only 4.3 % of such adults in the EU had any recent experience of participation in adult learning. This lack of access to education and training can persist even after they become unemployed, taking them further away from the labour market and further raising their risks of exclusion and poverty.

Moreover, the challenge is even more complex given that a substantial percentage of adults first need to improve their basic skills — literacy, numeracy and digital skills, in order to profit from upskilling opportunities and new digital technologies. A large number of adults still lack literacy and numeracy skills and a majority have little or no digital skills, as revealed by the Survey of Adult Skills[145] and EU digital skills statistics[146]. Finally, the results of the PIAAC adult skills survey showed clear evidence that the segment of the adult population with the lowest skills is, the least likely to participate in adult learning.

[145] European Commission (2013). *PIAAC: Implications for education and training policies in Europe*. A DG EAC memo of 8th October 2013.
[146] See EU Digital Single Market News website.

Figure 42 — Labour market situation of low qualified adults, 2017

	Low qualified adults *(000) (25-64 years)*	Employed low qualified *(000) (25-64 years)*	Total low-skilled jobs *(000) (15-64 years)*	Low qualified adults in low-skilled jobs *(000) Total*
EU	**61 353**	**34 131**	**20 211**	**9 650**
BE	1 386	645	450	207
BG	677	308	333	148
CZ	367	186	266	67
DK	527	328	302	142
DE	6 117	3 676	3 154	1 368
EE	80	53	52	14
IE	443	225	176	52
EL	1 583	784	268	135
ES	10 654	5 916	2 409	1 599
FR	7 201	3 797	2 693	1 171
HR	367	128	119	40
IT	12 835	6 647	2 518	1 619
CY	88	51	54	22
LV	101	59	107	23
LT	79	37	115	15
LU	65	38	25	14
HU	858	473	460	226
MT	126	72	18	16
NL	1 902	1 166	742	434
AT	728	394	337	144
PL	1 617	676	1 042	192
PT	2 897	1 982	490	388
RO	2 417	1 327	776	355
SI	141	70	68	30
SK	272	106	217	69
FI	329	175	148	45
SE	751	481	231	98
UK	6 744	4 334	2 641	1 019

Source: EU Labour Force Survey, Eurostat. Online data code: [edat_lfs_9901], [lfsa_egaed], [lfsa_egais] and [lfsa_egised]. Low level of qualification, based on the international standard classification of education (ISCED) refers to formal qualifications below the upper-secondary level (i.e. below ISCED level 3). Low-skilled job, based on the international standard classification of occupations (ISCO), refers to jobs belonging to elementary occupations (i.e. ISCO major group 9).

2.7 Learning mobility

Key findings

In 2016 only 10.7 % of higher education graduates originating from EU Member States were mobile; 3.1 % were degree mobile and graduated in a different country from that in which they got their diploma, while 7.6 % had a credit mobility stay and had a temporary study period or/and work placement abroad.

Graduate outward mobility for the EU-28 as a whole therefore appears to be still far from the benchmark set for 2020; however, it should be noted that several data limitations still apply to learning mobility data, which might lead to an underestimation of the benchmark.

Short study periods abroad ('credit mobility') are not only financed and organised under EU programmes. While this is the case for around half of such study experiences in the EU, 12 % are organised under other international and national programmes and almost 40 % are organised independently.

Learning mobility has been found to be associated with benefits such as future mobility, higher earnings and lower unemployment[147]. It improves transversal skills such as communication and foreign language skills that are key for an individual's adaptation to the globalised economy and labour market[148]. It is also believed to strengthen cultural awareness as well as citizenship competences. Student exchanges are assumed to positively influence the awareness of complex global issues and the civic skills of participants. Researchers have found that experience of studying abroad can contribute to shifts in students' beliefs, values and behaviours[149].

International student mobility could also have benefits at institutional and country level. Mobile students can contribute to knowledge absorption, technology upgrading and capacity building not only in the host country but also in their home country provided that they return home after studies or maintain strong linkages with nationals at home[150]. In addition, student exchanges between countries improve opportunities for collaboration between academic institutions and organisations at international level[151], contributing to the European goal of opening up and modernising education systems.

2.7.1 Learning mobility in higher education[152]

In 2011, Member States agreed on the EU aiming to see at least 20 % of higher education graduates (ISCED 5-8) taking part in a period of higher education-related study or training abroad (including work placements) by 2020. The period should represent a minimum of 15 European Credit Transfer and Accumulation System credits or last a minimum of 3 months. The definition takes worldwide mobility into account and includes two types of mobility: credit and degree mobility. Credit-mobile graduates are those who have had a temporary study period or/and work placement abroad and return to their 'home institution' to complete their degree. Degree-mobile graduates are those whose country of origin is different from the country in which they graduate.

Figure 43 below highlights the differentiated picture of degree and credit mobility by level of education across the EU and gives a first estimation of the EU benchmark[153].

147 See, Van Mol, C. and Timmerman, C. (2014). *Should I Stay or should I go? An analysis of determinants of Intra-European student mobility*;
Di Pietro, G. (2015). *Do study abroad programs enhance the employability of graduates*?;
Parey, M. and Waldinger, F. (2011). *Studying abroad and the effect on international labour market mobility: Evidence from the introduction of Erasmus.*

148 Araújo, L., Dinis da Costa, P. and Flisi, S. and Soto Calvo, E. (2015). *Languages and Employability*. A JRC Science and Policy report no. 97544

149 Wynveen, C. J., Kyle G. T. and Tarrant, M. A. (2012). Study abroad experiences and global citizenship: Fostering pro environmental behaviour. *Journal of Studies in International Education*. Volume 16, Issue 4, 2012.

150 OECD (2018). *Education at a Glance 2018.* Indicator B6, and
Appelt, S.(2015). *Which factors influence the international mobility of research scientists?*

151 For an overview of the benefits (and costs) of internationalisation of higher education institutions, see:
Marmolejo, F. (2012). Internationalization of Higher Education: the Good, the Bad, and the Unexpected.
Jibeen, T. and Khan, M. A. (2015). *Internationalisation of Higher Education: Potential Benefits and Costs.*

152 For an overview of the Learning mobility benchmark, see Flisi, S. and Sanchez-Barrioluengo, M. (2018). *Learning Mobility II: An estimation of the benchmark*. A JRC Science for Policy Report, forthcoming.

153 While data on credit mobility is collected in the countries to which students returned after their credit mobility stay (i.e. one of the EU MS), data on degree mobile graduates are collected at the level of the destination country. Consequently, calculating the total number of EU outward mobile graduates by origin takes into account figures provided by all the destination countries inside and outside the EU. This implies that the reliability of the outward indicator depends on the quality and detail of the information provided by other countries, as well as the number of destination countries (EU and non-EU countries) for which data is available.

Figure 43 — Degree and credit outward mobility of graduates, 2016 (%)

	Total mobility (credit+degree)					Credit mobility					Degree mobility				
	ED 5-8	ED 5	ED 6	ED 7	ED 8	ED 5-8	ED 5	ED 6	ED 7	ED 8	ED 5-8	ED 5	ED 6	ED 7	ED 8
EU	**10.7**	**3.7**	**9.5**	**14.7**	**9.8**	**7.6**	**2.4**	**7.1**	**10.4**	**1.4**	**3.1**	**1.4**	**2.5**	**4.3**	**8.4**
BE	:	:	:	:	:	:	:	:	:	:	2.7	3.4	1.8	3.8	10.1
BG	8.9	n.a.	8.9	7.8	10.5	1.5	n.a.	1.6	1.4	1.9	7.4	n.a.	7.3	6.4	8.6
CZ[2]	8.2	:	5.4	11.5	7	6.5	:	4.3	9.5	2.8	1.7	25.6	1.2	2	4.2
DK	9.8	3.7	9	13.6	:	8.4	3.4	8.2	11.1	:	1.4	0.3	0.8	2.5	5
DE	17.8	66	15.6	22.5	:	12.9	0.0[1]	12	16.2	:	4.9	66	3.6	6.4	8.7
EE	:	n.a.	:	:	:	:	n.a.	:	:	:	8.6	n.a.	6.5	10.1	17.5
IE	:	:	:	:	:	:	:	:	:	:	6.9	4	4	14	23.9
EL[2]	13.3	n.a.	7.1	27.5	:	2.2	n.a.	3.1	0.2	:	11.1	n.a.	4	27.2	27.3
ES	9.1	1.8	14.1	9.7	:	7.7	1.6	13	6.9	:	1.4	0.2	1.1	2.8	3.8
FR	16.1	5.3	13.3	26.7	12.1	13.2	4.3	9.3	23.6	5.1	2.9	1	4	3.1	7
HR[2]	6.9	66	3.8	9.5	23.2	4.4	0	2.1	6.9	10.2	2.4	66	1.7	2.6	13
IT	11.1	16	7.6	15.1	:	7.8	0	6	10.8	:	3.3	16	1.7	4.3	15.2
CY	15.8	0.4	28	7.2	18.2	2.5	0	5.5	0.2	1	13.3	0.4	22.6	7	17.2
LV	14.4	6	18	14	24.4	6.4	1.1	9.6	4.5	8.1	8	4.8	8.4	9.5	16.3
LT	15.6	n.a.	15	14.1	28.9	7	n.a.	7.8	4.8	9.1	8.6	n.a.	7.2	9.3	19.8
LU	84.4	:	92.5	81.6	:	13.8	:	23.1	0	:	70.6	14.9	69.4	81.6	76.6
HU[2]	6.2	8.8	4.4	9.3	9.6	2.9	0.2	2.2	4.8	0.8	3.3	8.7	2.2	4.6	8.8
MT	13.9	1.2	12.6	22.8	68.7	5.4	0	10.4	2.3	1	8.5	1.2	2.2	20.4	67.7
NL	23.2	9.9	22.8	26.1	:	20.8	5.5	21.7	21.3	:	2.4	4.5	1.1	4.8	10.7
AT	14.4	0.2	20.2	22.2	29.1	9.8	0.0[1]	14.2	15.2	13.8	4.6	0.2	6	7	15.3
PL	:	:	:	:	:	:	:	:	:	:	0.9	64.6	0.6	1.1	11.3
PT	10.6	42.3	9.3	12.7	12.5	7.7	0	7.8	8.3	0.7	2.9	42.3	1.5	4.4	11.9
RO	6.8	n.a.	6.4	6.2	14.2	1.9	n.a.	1.9	1.9	1.5	4.9	n.a.	4.4	4.3	12.7
SI	1.8	1.1	1.2	2.8	1.5	0	0	0	0	0	1.8	1.1	1.2	2.8	1.5
SK	12	:	12.8	11	12.8	0.1	:	0.1	0.1	0.5	11.9	20.4	12.7	10.8	12.3
FI	19.5	n.a.	19.9	19.4	7	15.8	n.a.	17	14.8	2	3.6	n.a.	2.9	4.6	5
SE	14.4	2.5	14.2	18.8	13.2	10.2	0.5	10.9	13.2	5.5	4.1	2	3.4	5.7	7.7
UK	4.1	0.4	6	1.8	4	3.4	0.1	5.5	0.1	1.8	0.7	0.3	0.4	1.7	2.2

Source: Calculations by the European Commission's Joint Research Centre, based on Eurostat (UOE; 2016). Online data codes: [educ_uoe_mobc02] for credit mobile graduates and [educ_uoe_mobg02] for degree mobile graduates in EU, EFTA, EEA and candidate countries; and OECD, International graduates, for degree mobile graduates who graduated in non-EU countries (Australia, Brazil, Canada, Chile, Colombia, Israel, Russia, New Zealand). [educ_uoe_grad01] for total graduates.
Note: Total outward mobility rates for country X are calculated as (outward degree mobile graduates from country X + outward credit mobile graduates who were not degree mobile from country X)/graduates originating in country X. Graduates originating in country X are calculated as (Total graduates in country X — Inward mobile graduates from any other country to country X + Outward mobile graduates from country X to any other country). Credit and degree mobility are calculated considering only one component at the numerator. Outward mobility rates for the EU are calculated with similar formulas, with the sum of outward degree and/or credit mobile graduates from EU Member States at the numerator, while the denominator is computed as (Number of graduates in EU Member States — Inward mobile graduates from non-EU to EU Member States + Outward mobile graduates from EU to non-EU countries). No information on outward credit mobility available for PL (derogation till end of 2018), BE, EE and IE. No inward degree mobility data available for FR, and for SI and SK by country of origin; no inward degree mobility data available for ISCED 5 for BE, ISCED 8 for ES, ISCED 5 and 8 for PL; this implies a potential underestimation of outward degree mobility from other countries. FR is underestimated because of missing inward degree mobility which overestimates the denominator; no information on EU-origin degree mobile graduates who graduated in the US which implies potential underestimation for some EU Member States. (n.a.) not applicable; (:) not available; (1) no well-developed credit transfer system is in place for vocational ISCED level 5 programmes; (2) data on graduates with credit mobility who were not degree mobile is missing; total graduates with credit mobility is used instead.

According to the first estimates of the learning mobility benchmark, in 2016 10.7 % of higher education graduates originating from EU Member States were mobile; 3.1 % were degree mobile, while 7.6 % had a credit mobility stay. Graduate outward mobility for the EU-28 as a whole therefore appears to be still far from the benchmark set for 2020; however, it should be noted that several data limitations still apply to learning mobility data, which might lead to an underestimation of the benchmark.

Considerable country differences emerge in the share of outward mobile graduates; Luxembourg and the Netherlands achieved the benchmark, with 84.4 % and 23.2 % of mobile graduates respectively, while Finland is very close to reaching it (19.5 %). Other four EU Member States have mobility rates above 15 % (Germany, France, Cyprus and Lithuania), while

nine are below 10 %. Shares are driven by different types of mobility depending on the country; among the top performers, the Netherlands (20.8 %) and Finland (15.8 %) see a higher percentages of credit mobile than degree mobile graduates, while in Luxembourg (70.6 %) the degree mobility component predominates (possibly due to mobility to neighbouring countries). The same happens e.g. in Slovakia or Cyprus, while credit mobility is much more relevant than degree mobility in Denmark or the UK.

Credit mobility in Europe is generally associated with the Erasmus programme. Figure 44 shows a broader picture: short study periods or traineeships abroad are also largely organised independently (38.8 %)[154]. In Denmark, Germany, France, the Netherlands, Finland, Sweden and the UK, among the graduates who were credit-mobile, the share of those who spent a short period abroad under 'other programmes' is over 40 %. By contrast, EU programmes seem to be virtually the only possibility for going abroad for a short period from Bulgaria, Greece, Cyprus, Hungary, Malta, Romania and Slovenia: over 95 % of credit-mobile graduates from these countries went abroad under EU programmes. This may be partly due to the lack of multilateral and bilateral exchange programmes at the national and institutional level. Another reason could be the limited private resources and possibilities available to graduates in order to finance their mobility[155]. These difficulties may also explain the small share (lower than 3 %) of credit-mobile graduates in these countries, except for Malta (5.7 %).

Figure 44 — Credit mobility by type of mobility scheme, 2016

	Total	Share of total credit mobile graduates over total graduates	Total	%	Total	%	Total	%
EU24	**374 583**	**9.3**	**185 134**	**49.4**	**44 268**	**11.8**	**145 181**	**38.8**
BG	1 019	1.7	975	95.7	6	0.6	38	3.7
CZ	5 567	6.0	4 776	85.8	67	1.2	724	13.0
DK	8 219	9.6	1 474	17.9	2 370	28.8	4 375	53.2
DE	70 100	12.6	34 300	48.9	4 000	5.7	31 800	45.4
EL	1 723	2.5	1 723	100.0	0	0.0	0	0.0
ES	33 488	7.6	29 083	86.8	4 405	13.2	0	0.0
FR	125 098	16.2	36 842	29.5	19 740	15.8	68 516	54.8
HR	1 545	4.5	1 329	86.0	104	6.7	112	7.2
IT	28 612	7.7	23 680	82.8	3 429	12.0	1 503	5.3
CY	236	2.8	236	100.0	0	0.0	0	0.0
LV	1 123	7.1	1 086	96.7	25	2.2	12	1.1
LT	2 344	7.9	1 924	82.1	404	17.2	16	0.7
LU	495	29.4	399	80.6	96	19.4	0	0.0
HU	1 925	2.8	1 877	97.5	41	2.1	7	0.4
MT	255	5.6	250	98.0	5	2.0	0	0.0
NL	32 617	21.6	12 401	38.0	4 161	12.8	16 055	49.2
AT	9 447	11.3	5 438	57.6	1 835	19.4	2 174	23.0
PT	5 709	7.8	5 099	89.3	404	7.1	206	3.6
RO	2 364	1.9	2 267	95.9	64	2.7	33	1.4
SI	417	1.3	399	95.7	13	3.1	5	1.2
SK	830	1.5	683	82.3	61	7.3	86	10.4

[154] The category 'credit mobility under other international/national programmes' includes specific multilateral or bilateral programmes at national or regional level but also arrangements between individual universities for exchanging students not financed by the EU. 'Credit mobility under other programmes' covers the cases where students on their own organise a recognised study period abroad which would be credited by the home institutions. For further details, see: 'Methodological manual on learning mobility in tertiary education'.

[155] Social and economic conditions of student life in Europe. Eurostudent VI 2016-2018: Synopsis of Indicators. German centre for higher education research and science studies.

FI	9 400	16.8	4 681	49.8	754	8.0	3 965	42.2
SE	7 564	9.7	1 895	25.1	2 284	30.2	3 385	44.8
UK	24 486	3.2	12 317	50.3	0	0.0	12 169	49.7

Source: Eurostat, UOE, 2016. Online data code: [educ_uoe_mobc01] and [educ_uoe_grad01]. Totals calculated by DG EAC.
Note: Derogations for submission of data have been granted to IT for ISCED 8, PL for ISCED 6-8. BE will submit the data by the end of 2018. Data is not available for EE and IE. These data by type of mobility scheme refer to all credit mobile graduates, not only to those who were not degree mobile. As a consequence, they do not correspond to the credit mobility component used in the calculations for the benchmark.

2.7.2 Inward degree mobility or the attractiveness of education systems

Increasing the mobility of students and graduates may be crucial to developing Europe's skilled labour force in order to strengthen its position as a knowledge-based economy[156]. The literature argues that competition for global talent has become a vital route to enriching the stock of human capital available in a country[157]. Student mobility is one of the options for attracting this global talent, under the 'academic-gate approach'. This is aimed at drawing from the pool of foreign students, having them graduate from local educational institutions and encouraging them to stay and work afterwards in the destination country. Moreover, the attraction of students from other countries is expected to improve the quality of higher education institutions[158].

In 2016, on average 8.6 % of higher education graduates in the EU were inward mobile (Figure 45). The EU Member States attracting the highest shares of inward mobile graduates are the United Kingdom (35.2 %), Luxembourg (29.2 %), the Netherlands (17.2 %), Austria (14.7 %), Denmark (14.6 %) and Belgium (12.9 %). In all other countries, inward graduate degree mobility accounts for less than 10 % of total graduate population; in 10 countries, rates are even below 5 %. For the vast majority of countries, the higher the education level, the higher the shares of inward mobility are. Across the EU as a whole 2.2 % of graduates in short-cycle degrees are mobile; the inward mobility rate increases to 5.8 % at bachelor level, 14.1 % at master level, and up to 22.1 % among PhDs[159].The EU Member States attracting the highest shares of inward mobile graduates are the UK (35.2 %), Luxembourg (29.2 %), the Netherlands (17.2 %), Austria (14.7 %), Denmark (14.6 %) and Belgium (12.9 %). In all other countries, inward graduate degree mobility accounts for less than 10 % of total graduate population; in 10 countries, rates are even below 5 %. For the vast majority of countries, the higher the education level, the higher the shares of inward mobility are. Across the EU as a whole 2.2 % of graduates in short-cycle degrees are mobile; the inward mobility rate increases to 5.8 % at bachelor level, 14.1 % at master level, and up to 22.1 % among PhDs[160].

In absolute numbers, the UK is by far the country with the highest number of inward mobile graduates (almost 200 000), followed by Germany (with over 38 000) and the Netherlands (almost 23 000). In 8 of the 26 EU Member States for which information is available, the majority of inward degree mobile graduates have another EU Member State as country of prior

156 See Abella, M. (2006). *Global competition for skilled workers and consequences*; Findlay, A.M. (2010). *An assessment of supply and demand-side theorizations of international student mobility*; Parey, M. and Waldinger, F. (2010). *Studying abroad and the effect on international labour market mobility: evidence from the introduction of Erasmus*.
157 Kuptsch, C. and Pang, E. (2006). *Competing for Global Talent*. An ILO paper.
158 Lepori, B. (2016). *What ETER tells us about student mobility in European higher education*.
159 The shares in this paragraph and in Figure 45 are calculated using the same denominator as for the benchmark, that is over the total number of graduates originating in country X calculated as (Total graduates in country X — Inward mobile graduates from any other country to country X + Outward mobile graduates from country X to any other country).
160 The shares in this paragraph and in Figure 45 are calculated using the same denominator as for the benchmark, that is over the total number of Graduates originating in country X calculated as (Total graduates in country X — Inward mobile graduates from any other country to country X + Outward mobile graduates from country X to any other country).

education; Luxembourg, Austria, Denmark and the Czech Republic are the countries with the highest share of EU inward mobile graduates. On the opposite end, in 8 EU Member States less than ¼ of mobile graduates originate from another Member State. Figure 46 looks more in detail into the country of origin of mobile graduates in each EU country, distinguishing between several macro-areas outside the EU. This data forms a good basis for the analysis of factors driving degree mobility.

Figure 45 — Inward degree mobility rates for higher education graduates by level of qualification and origin, 2016

	Inward degree mobility rate					Inward mobile graduates	
	Total (all ISCED levels) [e]	Short-cycle (ISCED 5)	Bachelor (ISCED 6)	Master (ISCED 7)	Doctoral (ISCED 8)	Total [e]	*Of which from EU-28*
	%	%	%	%	%	N.	%
EU [e]	**8.6**	**2.2**	**5.8**	**14.1**	**22.1**	**383 088**	***30.6***
BE	12.9	:	8.5	19.2	60.1	13 918	*53.5*
BG [1]	3.1	: [z]	2.7	3.6	4.2	1 959	*28.2*
CZ	9.6	2.7	8.9	10.1	17.1	8 257	*69.1*
DK	14.6	21.0	7.1	24.2	48.3	11 018	*69.2*
DE	7.1	0.0	3.3 [2]	11.9	18.4	38 593	*24.1*
EE	6.6	: [z]	4.6	10.5	12.3	695	*49.4*
IE	8.9	3.2	6.1	17.2	23.8	5 718	*32.8*
EL	1.9	: [z]	2.4	0.8	1.6	1 471	*67.4*
ES	2.9	0.7	0.8	8.4	:	12 568	*30.6*
FR	:	:	:	:	:	:	*:*
HR	0.4	0.0	0.1	0.6	3.2	140	*25.7*
IT	5.1	6.2	4.9 [d]	5.0 [d]	11.4	18 775	*23.0*
CY	8.3	5.5	11.7	5.5	8.1	734	*59.3*
LV	3.6	1.1	2.7	7.2	10.5	590	*31.7*
LT	2.4	: [z]	1.5	5.1	2.0	760	*18.2*
LU	29.2	21.4	13.2	52.0	143.8	839	*77.8*
HU	5.1	0.5	3.1	9.6	7.9	3 383	*43.5*
MT	5.6	1.4	3.2	13.0	5.1	263	*42.6*
NL	17.2	0.0	11.0	29.5	64.7	22 640	*62.0*
AT	14.7	0.3	18.5	24.3	38.0	11 126	*76.9*
PL	1.8	: (z?)	1.5	2.4	:	8 780	*12.9*
PT	4.9	0.3	2.2	9.0	21.1	3 527	*23.1*
RO	3.6	: [z]	2.4	5.4	3.8	4 420	*24.2*
SI	2.3	1.4	1.8	2.9	2.4	696	*:*
SK	5.0	0.8	4.3	5.7	6.3	3 038	*:*
FI	8.5	: [z]	6.0	11.5	32.5	4 532	*19.4*
SE	9.7	0.2	2.0	20.1	58.1	7 182	*33.6*
UK	35.2	9.0	20.3	87.8	77.7	197 466	*21.9*

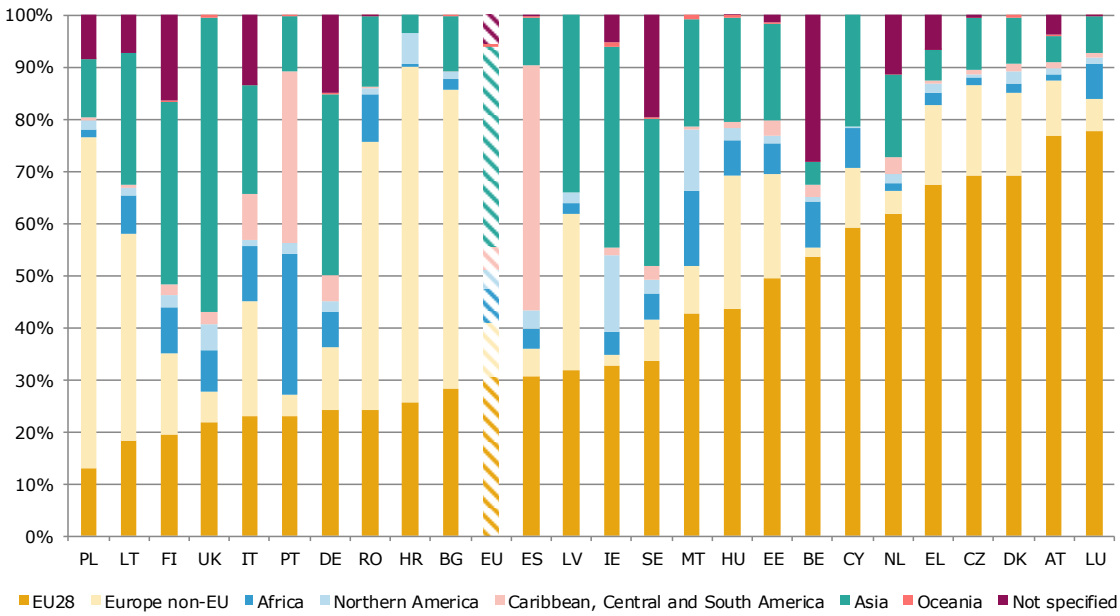
Source: Calculations by the European Commission's Joint Research Centre, based on Eurostat (UOE; 2016). Online data codes: [educ_uoe_mobg02], [educ_uoe_grad01].

Note: inward degree mobility rates are computed as inward degree–mobile graduates as a percentage of graduates originating in the country (i.e. using the same denominator as for the benchmark), for higher education as a whole and within ISCED levels. No information is available for FR (all ISCED levels), BE (ISCED 5), PL (ISCED 5 and 8) and ES (ISCED 8). Data for CZ, IT, HU, MT, SK use country of citizenship to identify the country of origin. (e) own estimation based on Eurostat data; (z) not applicable; (:) not available; (1) country estimations; (2) excludes data on graduates for vocational academies; (d) definitions differ.

Mobility patterns between countries can be explained by several factors. Geographical proximity is one: countries such as Luxembourg and the Netherlands benefit from their central position in Europe and traditionally receive many students from neighbouring countries. For example, 8.3 % of total graduates in Luxembourg are from Belgium and 13.9 % from France[161]. Similarly, in the Netherlands, 30 % of mobile graduates come from Germany. In Poland, the high share of mobile graduates from European countries other than EU ones is driven by neighbouring countries such as Ukraine (which accounts for half of mobile graduates in Poland) and Belarus (9 %). A second set of reasons relate to colonial and language ties. Figure 46 shows how Spain and Portugal receive a considerable proportion of their mobile graduates from the Caribbean, Central and South America (47 % for Spain and 33 % for Portugal, the latter almost entirely made up of graduates from Brazil)[162]. Similarly, the UK is the destination of many graduates from Commonwealth countries. Other reasons drawing graduates to certain countries include: a desire to learn or improve knowledge of foreign languages[163], especially the most common ones; the availability of English-language programmes in non-English speaking countries, especially the Nordic countries[164].

University characteristics are also a major factor in inward mobility. Universities with higher teaching quality and with a better reputation tend to have higher shares of inward degree mobility, especially at bachelor and master level. Research orientation and excellence, on the other hand, are more relevant for degree mobility at PhD level[165].

Figure 46 — Inward degree mobility graduates by country of origin, 2016



161 It should also be noted that these might be 'frontier' graduates, commuting to Luxembourg for study purposes. However, commuters are correctly considered as degree mobile if they study at tertiary level in a different country from the one where they were awarded their upper secondary leaving certificate. It is not the residence, but participation in the education abroad that defines mobility in line with was convened by countries for UOE data collection on mobility.

162 The shares shown in this paragraph are calculated over the total number of graduates in the country.

163 Rodríguez-González, C., Bustillo-Mesanza, R. and Mariel, P. (2011). The determinants of international student mobility flows: an empirical study on the Erasmus programme. *Higher Education* 62: 413-430.

164 OECD (2017). *Education at a Glance 2017*: Indicator C4.

165 Sánchez-Barrioluengo, M. and Flisi, S. (2017). *Student mobility in tertiary education: institutional factors and regional attractiveness*. JRC Science for Policy report. JRC108895.

Source: Calculations by the European Commission's Joint Research Centre, based on Eurostat (UOE; 2016). Online data code [educ_uoe_mobg02]
Note: No information is available for FR (missing), SI and SK (no disaggregation by country of origin), BE (missing ISCED 5), PL (missing ISCED5 and 8) and ES (missing ISCED 8). Data for CZ, IT, HU, MT, SK use country of citizenship to identify the country of origin. Countries are ordered by increasing shares of EU mobile graduates on total mobile graduates in the country.

2.7.3 Obstacles to student mobility

Alongside institutional measures to promote internationalisation, several initiatives at European and national level promote student mobility across Europe. However, students' decisions to study abroad depend not only on the general economic situation[166] but also their social and personal background[167]. Access to mobility schemes and motivation to engage in study-related activities abroad may be highly dependent on the higher education background of their parents[168]. Parents with higher education may be more aware of international study programmes and their benefits, may be more encouraging and may have networks abroad from their own studies and working experience. By contrast, students whose parents had no experience of higher education starting tertiary education may be considered a sufficient achievement in itself. Moreover, empirical research shows also that students from a higher socioeconomic background are more likely to develop a 'habitus in which it is considered normal to travel and an associated degree of confidence in dealing with new culture'[169].
Moreover, students' background can affect not only the decision to go abroad but also the length of the stay abroad, the country/university of destination and the quality of the experience abroad.

Figure 47 underlines that learning mobility could be socially selective. Across the countries that participated in the Eurostudent[170] study, the proportion of students who have been enrolled abroad is larger for students with a higher education background (9.3 %) than for students without (5.8 %). Particularly large differences of between 5 and 7 pps in the proportions of the two groups are found in Portugal, the Czech Republic, France, Italy, Latvia, and Lithuania. The smallest differences (below 2 pps) can be found in Austria, Malta, Ireland, Romania, Slovakia, Croatia, and Poland.

166 Economic factors including higher economic performance, higher returns from education and skills, more affordable education and mobility costs in the host country are considered among factors that can drive student mobility. Other non-economic factors, such as the prestige of educational institutions in the country of destination and the cultural proximity between origin and destination countries, can impact on students' decision to study abroad, See OECD (2017). *Education at a Glance 2017*, indicator C4.

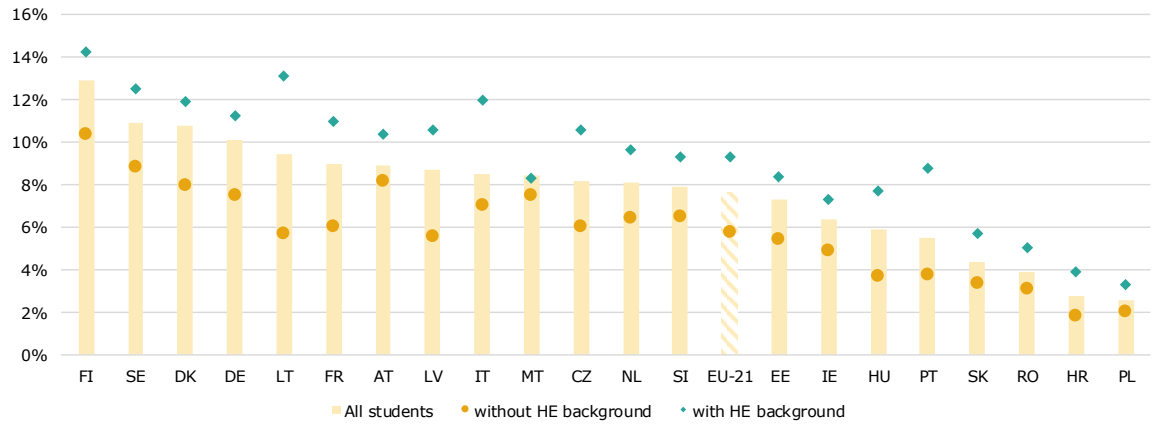
167 It is worth mentioning that inequalities in student mobility are very likely to be also generated within countries' education systems and higher education institutions. See Schnepf, S. (2018). Unequal uptake of higher education mobility in the UK. The importance of social segregation in universities and subject areas.

168 Beerkens, M., Souto-Otero, M., Wit, H. and de Huisman, J. (2016). *Similar students and different countries? An analysis of the barriers and drivers for Erasmus participation in seven countries*. Journal of studies in International education.

169 Netz, N. and Finger, C. (2016). New horizontal inequalities in German higher education? Social selectivity of studying abroad between 1991 and 2012. Sociology of Education.

170 Eurostudent is a survey on social and economic conditions of student life in higher education systems in Europe. Eurostudent VI data cover 21 EU Member States (AT, CZ, DE, DK, EE, FI, HR, HU, IE, IT, LT, MT, NL, PL, PT, RO, SE, SI and SK).

Figure 47 — Temporary enrolment abroad by education background



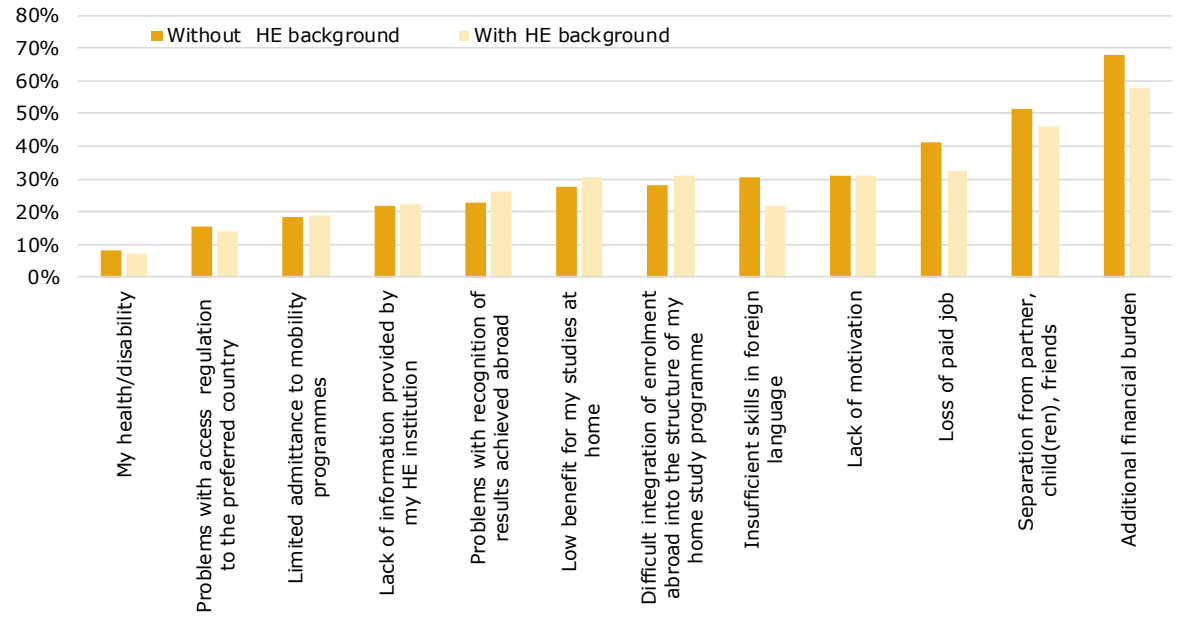
Source: Eurostudent VI 2016-2018 Synopsis of Indicators, DG EAC elaboration of Figure B10.2.

Students from a higher socioeconomic background may suffer less from economic constraints on plans to study abroad. Across countries participating in the Eurostudent[171] study, the biggest obstacle to studying abroad is the perceived additional cost. Almost two thirds (63.4 %) of students who do not plan to go abroad perceive financial restrictions to be a 'quite' or a 'big obstacle' to doing so.

The second-biggest obstacle (cited by 48.7 %) is separation from their partner, children and friends, followed by the loss of paid jobs (37.1 %). Only a quarter (26.4 %) of students are concerned about their own insufficient foreign-language skills. Slightly fewer students fear organisational difficulties — difficult integration of their enrolment abroad into the structure of their home study programme (29.6 %) and low benefits for their studies at domestic higher education institutions (29.0 %).

[171] Figures in this section are based on calculations by DG EAC from a Eurostudent sample including AT, CZ, DE, DK, EE, FI, HR, HU, IE, IT, LT, MT, NL, PL, PT, RO, SE, SI and SK.

Figure 48 — Obstacles to enrolment abroad by education background



Source: Eurostudent VI 2016-2018 Synopsis of Indicators. Cross-country average of share of students who do not plan to enrol abroad. DG EAC calculations over a Eurostudent sample including AT, CZ, DE, DK, EE, FI, HR, HU, IE, IT, LT, MT, NL, PL, PT, RO, SI and SK.
Note: Students assessed possible obstacles to studying abroad on a 5-point scales ranging from 'no obstacles' to 'big obstacles'. The figure shows the shares of students who considered certain factors to be either 'quite a big' or 'big obstacle'.

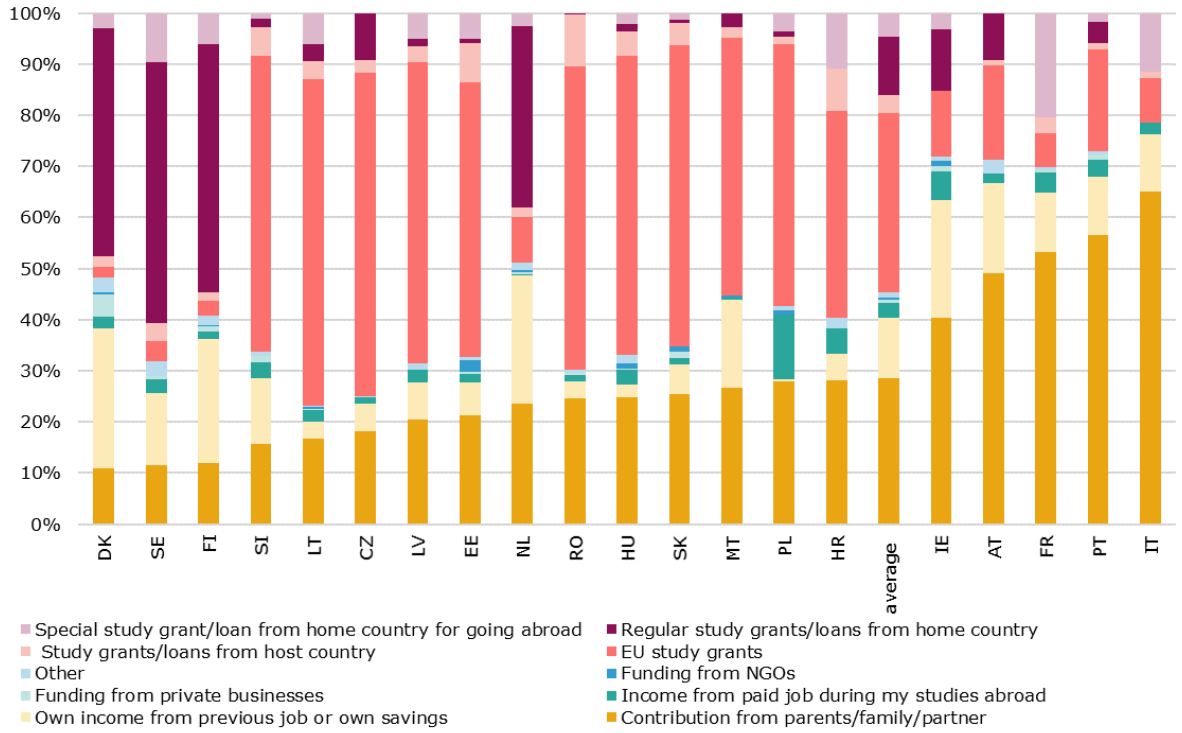
Looking at the perception of obstacles to enrolment abroad by students' educational background, an interesting picture emerges from Figure 48. While there are no relevant differences between students without and with higher education background in the organisational matters, bigger gaps (up to 10 pps) can be found on the aspect of 'additional financial burden', 'loss of paid job' and 'insufficient skills in foreign language'.

Therefore, increasing availability of funding and improving its distribution in order to tackle social selectivity should be addressed as a priority to make learning mobility an opportunity for all students. On average, 44.3 % of students indicated having used primarily private funds (Figure 49, shown in shades of blue), while 54.4 % primarily used public funds (Figure 49, shown in shades of pink). In particular, while on cross-country average the primary source of funding for enrolment abroad is EU study grants (35.0 %), followed by contributions from parents and family and partners (28.6 %), different results emerge by educational background. Students without higher educational background draw upon contributions from parents less (21.6 %) than students with higher educational background do (28.8 %) and more upon own income from previous job (+2.9 points) and EU study grants (+ 5.6 points).

Figure 49 illustrates the different primary sources of funding used for the enrolment abroad and to which extent their use varies across countries. EU study grants are of particularly high importance for students in Slovenia, Lithuania, Czech Republic, Latvia, Romania, Hungary and Slovakia, where more than 55 % of students who have been enrolled abroad state they have used these grants primarily to fund their studies. While regular study grants or loans from their home countries were used by at least 40 % of students in Denmark, Sweden and Finland, more than half of students in France, Portugal and Italy states having used primarily contributions from parents/family.

These different ways of financing student mobility could be considered one of the explanations for the gaps between students with and without higher education background in temporary enrolment abroad observed in Figure 47. Higher gaps are observable in those countries where more than the half of students rely either on family contributions to go abroad (France, Portugal and Italy) or on EU study grants (the Czech Republic, Lithuania and Latvia). This implies that in these countries students from lower socioeconomic background may have limited access to mobility opportunities as EU grants could be quantitatively insufficient to cover all the costs or their parents might not be able to finance their studies abroad.

Figure 49 — Primary source of funding for enrolment abroad



Source: Eurostudent VI 2016-2018 Synopsis of Indicators, DG EAC calculations. Share of students who had been enrolled abroad. No data for DE; for 'regular study grants/loans from home country' in FR, HR and IT; for 'special study grant/loan form home country for going abroad' in AT, CZ, HR, IT, LV, MT and PL; for 'funding from NGOs' in AT, CZ, FR, IT, LV, PT, RO, SE, SI; for 'other' in IT and MT. Private funds are indicated in shades of blue; public funds in shades of orange. The category 'other' is in yellow as it cannot be categorised as either public or private.

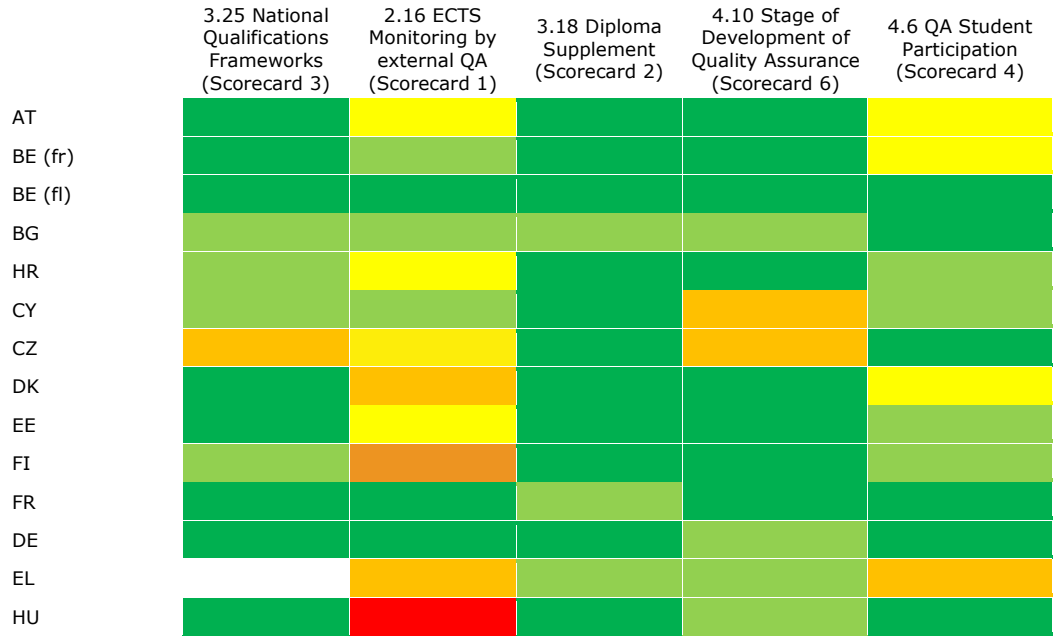
2.7.4 Towards a European Higher Education Area

The mobility of higher education students within the EU is at the heart of the vision for a European Education Area to be achieved by 2025. This policy concept aims to enable Europe to remain a continent of excellence, an attractive place to study, to carry out research and to work. Internationalisation is at the core of the idea, with transnational cooperation of higher education institutions, mobility of students and staff, and innovative teaching and learning practices as building blocks. From the EU's perspective, internationalisation has a particular role in shaping a sense of belonging and attachment to democratic values. The vision benefits from a broad consensus among the public: the vast majority of respondents in a recent Eurobarometer survey agree that the proposed initiatives to strengthen mobility and internationalisation would be useful for young people in the EU. Nearly all (97 %) of those polled agree that it would be useful to give students the chance to work on innovative products with academics, researchers and companies from different countries. Almost as many (95 %) agree that it would be useful to

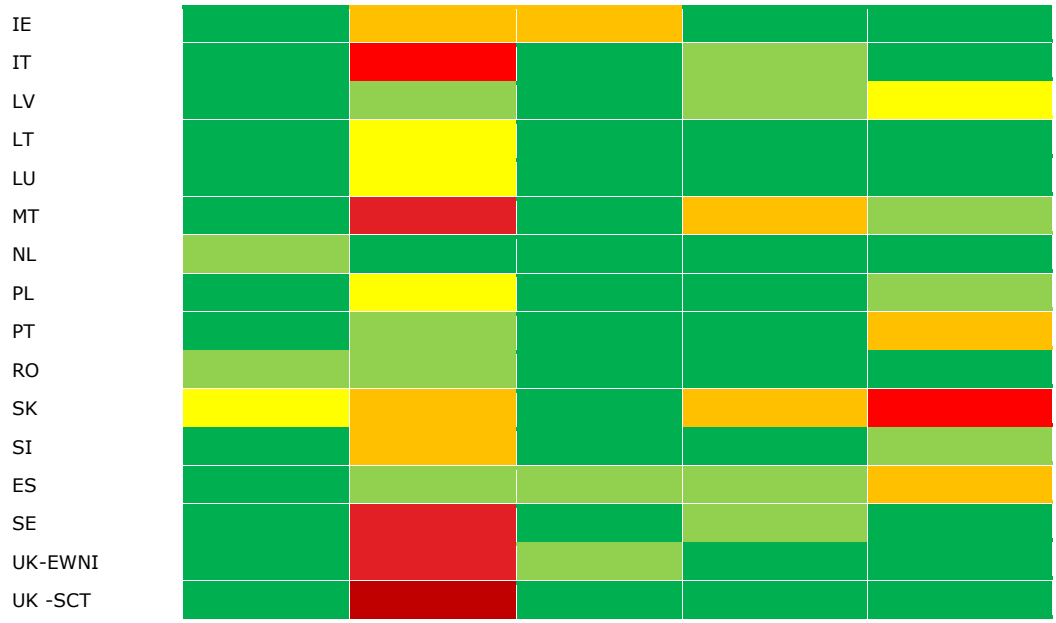
create more opportunities for young people to study and work together across disciplines and departments[172].
A number of EU Member States have been taking steps to help internationalise their higher education sector. For example, the Rectors Council and Ministry of Foreign Affairs in Romania recently signed a protocol to support the internationalisation of higher education, participation in international university fairs and the award of scholarships for international students. The Swedish Government has suggested a new strategy for internationalisation to encourage student exchanges and joint degrees. It is designed to improve the quality of teaching, expand opportunities to study abroad, and attract international talent to Sweden. The strategy features a new visa regime and grant system. In Austria, almost 30 % of tertiary students come from abroad; and even in the UK, after a 7 % decline in the EU student population in 2017, the proportion of EU students has started increasing again, with a rise of 3.6 % registered in the current year[173].

A key element of internationalisation at EU level is the adoption of a standard three-cycle degree structure (corresponding to ISCED levels 6-8), including the possibility for students to obtain short-cycle qualifications (ISCED 5) that can still be part of the framework for qualification of the European Higher Education Area (QF-EHEA). This is an important building block of the Bologna Process — an intergovernmental activity now joined by 48 EU and non-EU education systems and supported by the EU. The main objectives of the process are to improve the comparability and transparency of systems to support mobility and internationalisation. At the same time, the Bologna Process aims to increase the quality of higher education and promote mutual understanding and trust. The latest data shows that Bologna has been largely successful in implementing a three-cycle structure, with its main tools progressively implemented across the EU — the National Qualifications Framework, the European Credit Transfer and Accumulation System (ECTS), and the Diploma Supplement. Nevertheless, cross-national recognition problems are reported to be still prevalent, and several aspects of the quality assurance systems (in compliance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area) are yet to be implemented. The figure below shows the status of implementation of the main tools of the Bologna process.

Figure 50 — Scorecard on implementation of Bologna structure[174]



[172] European Commission/DG COMM(2018). *Flash Eurobarometer 466 on the European Education Area* .
[173] Full report available at the ucas.com website
[174] Scoreboard published in European Commission/EACEA/Eurydice (2018). *The European Higher Education Area in 2018*: A Bologna Process Implementation Report.



Source: European Commission/EACEA/Eurydice (2018). The European Higher Education Area in 2018: Bologna Process Implementation Report.
Note: Numbering of the columns refers to indicators in the Bologna Implementation report. Legend: dark green= all criteria are fulfilled; light green= most criteria are fulfilled; yellow= some criteria are fulfilled; orange= only a limited number of criteria are fulfilled; red= no criteria are fulfilled.

2.7.5 Language competences among EU citizens

Language learning can directly support mobility of learners at all education levels. Language learning from an early age is promoted by the EU as a priority in many contexts, including strengthening social cohesion, mobility and intercultural understanding. This reflects the 'Barcelona target' from 2002 of teaching at least two foreign languages from a very early age[175].

Broadly, almost half of EU citizens only speak and understand their mother tongue. At the same time, most Member States make it compulsory for all students in general education to learn two foreign languages at some point during their schooling[176]. This resonates well with the updated understanding of multilingual competences as one of the eight Key Competences for Lifelong Learning in the EU[177]. Promoting both literacy and multilingual competences as key competences helps meet the objective that learners should gain increased proficiency in both official and other languages.

The European Commission has submitted a proposal for a Council Recommendation on a comprehensive approach to the teaching and learning of languages[178]. Its aim is that by 2025 all young Europeans finishing upper secondary education are proficient users of the language of schooling and another European language and confident users of an additional language.

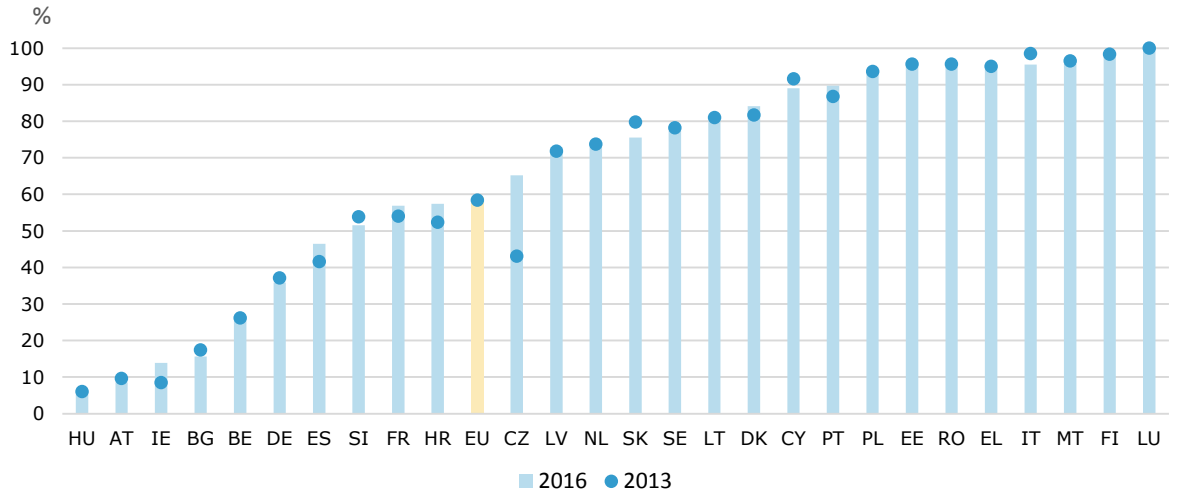
The European integration process includes both the principle of freedom of movement, plus linguistic diversity as a fundamental component of European culture. A recent Flash Eurobarometer survey[179] shows that 90 % of young Europeans (aged 15-30) think it is important or very important that young people can have experiences abroad as students, trainees, apprentices, volunteers or youth workers, or in work exchanges.

175 Presidency conclusions of the European Council in Barcelona, March 2002.
176 European Commission (2017). Communication on *strengthening European Identity through Education and Culture* of 17 November 2017, COM(2017) 673 final.
177 Council of the EU (2018). *Recommendation on Key Competences for Lifelong Learning* of 22 May 2018.
178 Council of the EU (2018). *Recommendation on a comprehensive approach to the teaching and learning of languages.*
179 Flash Eurobarometer 466 of April 2018 on the European Education Area.

Evidence from the public consultation on the Key Competences Framework[180] and from a study on cross-border cooperation in Europe[181] point to language barriers (i.e. lack of knowledge of a neighbouring country's language) as the most important obstacle to cross-border cooperation. A recent Eurydice report[182] found that, compared with a decade ago, students are learning a foreign language from a younger age, and that more lower secondary students are now learning two foreign languages. The increase is not, however, reflected in outcome quality as a low proficiency level among students at the end of compulsory education and very large differences between Member States prevail[183]. The report from Eurydice also stresses that learning a second language is not compulsory in all countries and that English is the predominant foreign language for most students.

Since 2013 progress in foreign-language learning in lower secondary education (ISCED level 2) has been slow or non-existent. Across the EU the proportion of students learning no foreign language at all dropped from 1.7 % in 2013 to 1.5 % in 2016. Students learning one foreign language reached nearly 40 % and students learning two or more foreign languages in lower secondary education reached 59.2 % in 2016[184], but with very small changes from 2013. Beyond the averages, differences between EU Member States persist. Figure 51 shows the change between 2013 and 2016 for each Member State. It shows clearly that few countries are making significant efforts to reach the target of teaching at least two foreign languages from a very early age.

Figure 51 — Percentage of pupils in lower secondary education being taught at least two foreign languages, 2013-2016

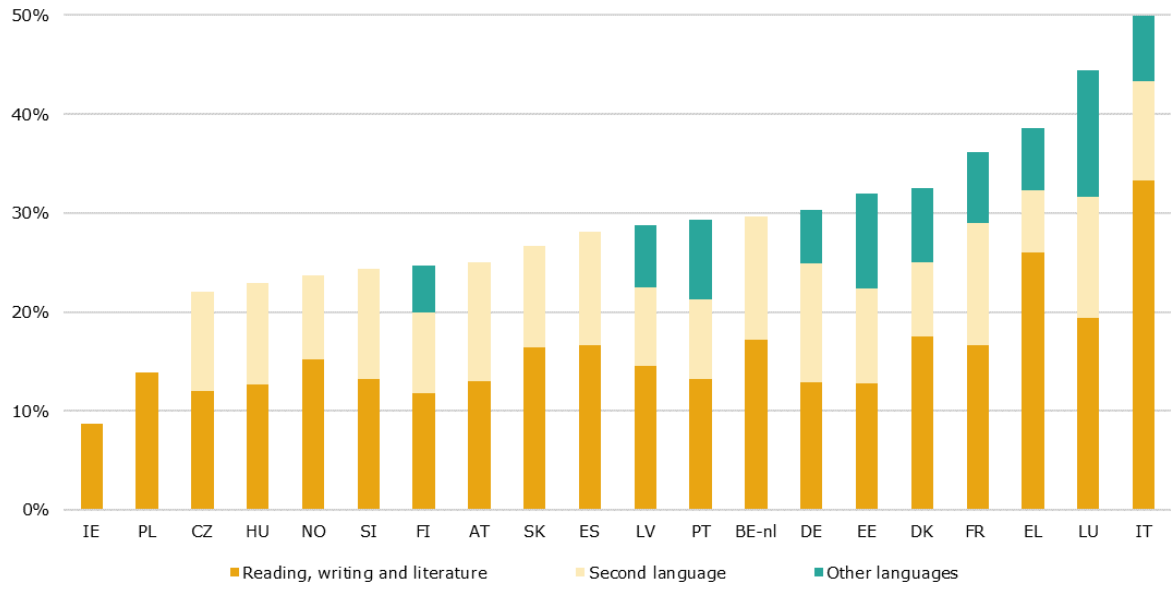


Source: Eurostat (UOE). Online data code: [educ_uoe_lang02].
Note: Data is not available for UK. Countries are ordered from the lowest to the highest percentage of pupils in lower secondary schools being taught at least two foreign languages in 2016.

On the quantity of language instruction provided to students in lower secondary education, Member States differ greatly (Figure 52).

180 European Commission (2017). *results of the stakeholder consultation in the context of the Key Competences Review*. A DG EAC report by the Danish Technological Institute and ECORYS.
181 European Commission (2015). *Overcoming obstacles in border regions*, A DG REGIO report.
182 Eurydice (2017). *Key Data on Teaching Languages at School in Europe*.
183 European Commission (2012). *Language competences for employability, mobility and growth*, SWD(2012)372.
The European Survey on Language Competences 2012.
184 Eurostat website, 'Statistics Explained' on indicators to support the Europe 2020 strategy.

Figure 52 — Instruction time per subject as a percentage of total compulsory instruction time, general lower secondary education, 2017



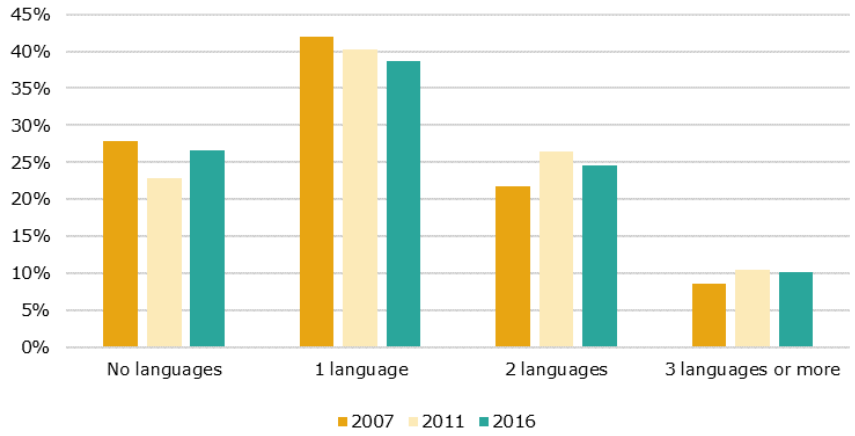
Source: OECD (2017). Education at a Glance 2017: *OECD Indicators.* Table D1.3b.
Note: Other languages not applicable for AT, HU, BE (fl), the UK (England). Data not available for SE and the UK (Scotland). Second language and other languages are embedded in compulsory subjects with flexible timetable and/or Compulsory options chosen by students in IE. Reading writing and literature, Second language and other languages are embedded in compulsory subjects with flexible timetable and/or compulsory options chosen by students in BE (fr) and NL. Reading writing and literature and Second language are embedded in compulsory subjects with flexible timetable and/or compulsory options chosen by students in the UK (England). Other languages are embedded in compulsory subjects with flexible timetable and/or compulsory options chosen by students in ES, SI and SK.

The four countries with the highest proportion of compulsory instruction time devoted to all kinds of language learning in 2017 (first language/language of instruction, second language and other languages) are Italy, Luxembourg, Greece and France. Both the ranking and the results are unchanged from 2016.

Language skills are essential to realising the vision of having EU citizens who are active in terms of intercultural understanding and democratic participation and who have the possibility of mobility for learning and work. Recent discussions at EU level on the possibility of introducing a language learning benchmark and deeper educational integration through the European Education Area only amplifies the importance of quality language learning.

In spite of many reforms and initiatives both at the European level and among Member States, young adults have not progressed in their knowledge of foreign languages. Self-reported data on the number of foreign languages known by those aged 25-34 from the Adult Education Survey show that some progress was made between 2007 and 2011, but not since 2016 (Figure 53).

Figure 53 — Number of foreign languages known (self-declared), age 25-34. EU average

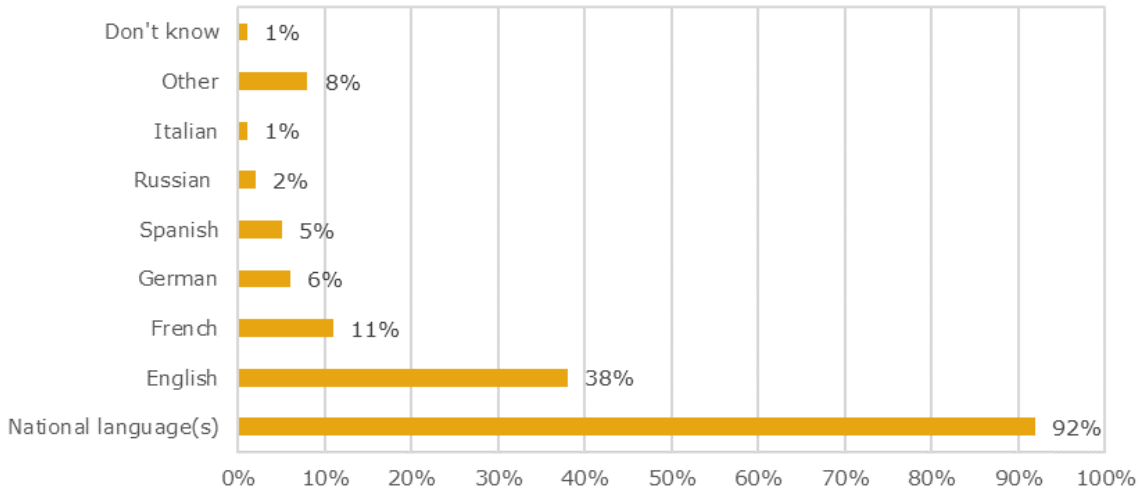


Source: Eurostat, Adult education survey 2007, 2011 and 2016. Online data code [edat_aes_I22].
Note: Breaks in time series for FR, LU, HU, SE and the UK. Data not available for DK (2016), IE (2007, 2016), HR (2011), LU (2007, 2011), the NL (2007), RO (2011), FI (2011), the UK (2011).

The initial, but small increase in the period 2007-2011 might stem from increased attainment of upper secondary education in the general European population[185].

Results from the Flash Eurobarometer on the European Education Area[186] show that 38 % of students have experience of studying in and being taught in English during their studies and 11 % in French. Fewer than 1 in 10 mentioned any other languages. National languages are the most frequently mentioned study language in each of the Member States surveyed.

Figure 54 — Languages used for studies at school or university EU average



Source: Flash Eurobarometer 466, Q9A.
Note: The question specifies the language of schooling or instruction used by the teacher for content learning. This does not mean learning English or Spanish, for example, as a foreign language. Multiple answers possible. N=8153. The languages are not national languages.

185 Eurostat table code tps00065
186 Flash Eurobarometer 466 (2018). *The European Education Area*.

English is the second most frequently reported language in all countries except those in which it is one of the official languages (the UK, Ireland, Malta). There are significant differences in the proportions of respondents who mention having been taught in English. These range from 71 % in Spain, 68 % in Austria and Sweden and 60 % in the Netherlands to 24 % in Portugal, 20 % in France and 19 % in Croatia.

French is the most frequently reported non-national study language in Ireland (27 %) and the UK (24 %) and is mentioned by a significant minority of respondents in Spain (24 %). It is the second most frequently mentioned non-national language in eight countries.

However, one third of the young Europeans participating in this Flash Eurobarometer declare that they would not be able to study in any foreign language. 84 % say that they would like to improve a foreign language that they have already learned and 77 % say that they would like to learn a new language.

Part 3

Investing in education

3 Investing in education and training

Key findings

In 2016, public expenditure on education in the EU, consolidated its slightly increasing trend by rising 0.5 % in real terms from the previous year. However, 12 Member States, more than the previous year, reduced their education budget. Average public spending on education across the EU has remained stable in recent years at around 10 % of total public expenditure (2016: 10.2 %). This represents 4.7 % of EU GDP.

In the EU, about 60 % of education budgets is spent on teachers, while around 6.5 % is invested, essentially in infrastructure. In terms of education levels, the biggest proportion (40 %) of public budgets goes into funding secondary and post-secondary non-tertiary education. This is followed by pre-primary and primary education (around 30 %) and tertiary education (around 15 %).

Spending figures *per se* cannot be linked to good or bad performance of the education system and it is difficult to identify indicators orienting policy choices and spending decisions that will result in better performances of the education system. Making the teaching profession more attractive, enhance autonomy over the curriculum to schools and preventing or redressing school segregation stand out as promising measures to make school education in EU Member States more effective and more equitable. The 2015 PISA findings support recent scientific literature looking at the impacts of school systems on effectiveness and equity. They seem to indicate that the effectiveness and equity of school education systems can be promoted at the same time.

3.1 Spending on education in 2016

In 2016, COFOG data show that the average general government expenditure on education in the EU-28 represented 4.7 % of GDP, i.e. around EUR 705 billion in current prices. This ratio remained relatively stable between 2002 and 2016, decreasing by 0.3 pps since 2002 and by 0.1 p.p. on 2015.

In real terms, the increase in the EU level total expenditure on education between 2015 and 2016 was 0.5 % (Figure 55 first panel). In some countries, the change has been greater. The sharpest increase from 2015 was registered in Romania: 18.4 % in real terms. This means an increase of 0.6 pps as a percentage of GDP and an increase of 2.2 pps as a percentage of total public expenditure. The change is mostly linked to payments of arrears on public salaries, and therefore not limited to the education sector, and to an increase in teachers' salaries. This is one of the largest yearly increases in the country in the last 10 years and confirms the trend since 2012 of increasing spending back to pre-crisis levels. By contrast, Bulgaria[187] registered an around 9 % decrease in spending in real terms compared to 2015, returning spending to the 2012 level. This change represented 0.6 pps of GDP but was neutral as a share of total expenditure (reflecting a fall in overall public spending). These two countries, Romania in particular, seem to be in any case on a long term path towards reducing their gap with EU average spending on education as a share of GDP. The Czech Republic, Latvia, Hungary and Slovakia registered relatively large drops in their spending level on education.

[187] A recent report by the International Monetary Fund (IMF) finds that the efficiency of Bulgaria's spending in education is higher than that of its peers, although its education spending and educational outcomes remain low.

European Commission

Figure 55 — Public expenditure on education, 2016 (%)

	Year-on-year real change*				As a share of total public expenditure				As a share of GDP			
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
EU	**-1.2**	**1.4**	**1.0**	**0.5**	**10.1**	**10.2**	**10.2**	**10.2**	**4.9**	**4.9**	**4.8**	**4.7**
BE	1.9	0.6	3.0	2.2	11.4	11.5	11.9	12.0	6.4	6.3	6.4	6.4
BG	3.3	12.0	3.2	-9.1	9.8	9.7	9.8	9.8	3.7	4.1	4.0	3.4
CZ	2.3	3.6	0.5	-7.6	12.0	12.1	11.8	11.3	5.1	5.1	4.9	4.5
DK	0.4	6.5	0.5	-0.6	12.3	12.9	12.8	12.9	6.9	7.1	7.0	6.9
DE	0.8	0.7	1.4	2.6	9.6	9.6	9.6	9.5	4.3	4.2	4.2	4.2
EE	-4.3	-5.1	5.4	-3.2	15.6	14.8	15.1	14.6	6.0	5.7	6.1	5.9
IE	-0.1	0.3	1.6	4.4	11.7	11.5	11.4	12.1	4.7	4.3	3.3	3.3
EL	0.6	-5.7	0.2	-1.2	7.4	8.7	8.0	8.6	4.6	4.3	4.3	4.3
ES	-3.3	0.6	3.0	1.1	9.0	9.1	9.4	9.5	4.1	4.1	4.1	4.0
FR	0.9	1.2	1.5	0.7	9.6	9.6	9.6	9.6	5.5	5.5	5.5	5.4
HR	3.9	-4.5	1.5	2.6	10.6	10.1	10.1	10.2	5.1	4.8	4.8	4.8
IT	0.4	-0.8	0.0	-0.6	8.0	7.9	7.9	7.9	4.1	4.0	4.0	3.9
CY	4.5	-9.7	1.2	2.7	16.2	12.4	14.8	15.6	6.8	6.0	6.0	6.0
LV	0.2	5.6	0.0	-5.6	15.2	15.4	15.4	14.7	5.7	5.9	5.9	5.5
LT	1.8	-3.7	-2.6	-3.3	15.8	15.5	15.5	15.1	5.6	5.4	5.4	5.2
LU	-7.6	1.5	1.8	0.9	11.8	11.8	11.7	11.5	5.1	4.9	4.8	4.8
HU	3.7	14.5	2.9	-5.8	9.3	10.2	10.2	10.5	4.6	5.1	5.1	4.9
MT	3.6	4.5	6.9	2.9	13.8	13.4	13.3	14.1	5.8	5.6	5.5	5.4
NL	-1.3	0.6	1.0	2.8	11.7	11.7	11.8	12.2	5.4	5.4	5.3	5.3
AT	0.9	-0.5	0.4	2.6	9.7	9.4	9.6	9.8	5.0	4.9	4.9	4.9
PL	-0.4	3.7	3.6	-3.2	12.4	12.4	12.7	12.1	5.3	5.3	5.3	5.0
PT	-3.6	-1.3	-7.4	-2.9	11.8	11.0	10.5	10.8	5.9	5.7	5.1	4.9
RO	-5.7	9.0	5.9	18.4	7.9	8.6	8.6	10.8	2.8	3.0	3.1	3.7
SI	2.3	-4.4	-4.5	1.9	10.9	12.1	11.6	12.4	6.5	6.0	5.5	5.6
SK	-1.5	6.3	5.7	-7.5	9.5	9.8	9.3	9.3	4.0	4.1	4.2	3.8
FI	-1.1	-0.4	-0.8	0.4	11.1	11.0	10.9	10.8	6.4	6.4	6.2	6.1
SE	0.3	2.3	2.4	3.9	12.6	12.9	13.1	13.4	6.6	6.6	6.5	6.6
UK	-7.3	2.9	-0.6	-1.5	11.5	11.7	11.5	11.2	5.1	5.0	4.9	4.7

Source: DG EAC calculations based on Eurostat data, general government finance and national accounts statistics (COFOG). Online data code: [gov_10a_exp] and [nama_10_gdp].
Note: * = year-on-year change of total expenditure of general government on education, valued at constant prices using the implicit deflator for the final consumption of the general government. For 2016, data for ES, FR (also 2015) and NL are provisional; data for PT (2014, 2015 and 2016) are estimated.

The EU-28 average share of expenditure on education in total expenditure was stable at 10.2 %. This represents a slight decline from 11.1 % in 2002, though against a background of an overall increase in government expenditure, notably on 'health' and 'social protection' (+2.7 pps as a ratio to GDP compared with 2002)[188]. Taking education's share of public expenditure as an indication of a government's commitment to the sector, we can see that in almost two thirds of Member States this share is above the EU average. The latter is pulled down, however, by large economies such as Germany, France and Italy who invest relatively less public money in education. Germany, in particular, has received in the context of the European Semester process, country-specific recommendations to increase investment in education since 2011. However, expenditure on education as a percentage of GDP or of total public expenditure also reflects changes in the level and composition of total public expenditure itself, which in turn is linked to the economic cycle and growth. Spending per student offers a better indicator of the resources available to teachers and students and implicitly takes into account the evolution of the student population and demographic changes. Using enrolment data from the UOE data collection[189], the evolution of expenditure in education per student has been computed using

[188] For a short overview of spending on education compared to other functions see Education and training Monitor 2017, pages 47-49.
[189] See Eurostat *Guide to Educational Expenditure Statistics*.

COFOG data (as done in the previous edition of this report)[190]. Figure 56 below shows the change in the number of students and of EU average real spending per student in the past 10 years for the EU-28. It shows that the total number of students followed a slightly increasing pattern from around 108 million in 2006 to almost 111 million in 2016 (left-hand axis). In the same period spending per student remained broadly constant, though with some cyclical variation.

Figure 56 — Number of students (in millions) and expenditure per student (in €) — EU-28, 2006-2016

Source: DG EAC computation based on Eurostat's general government finance and national accounts statistics (COFOG). UOE data for enrolments. Online data codes: [gov_10a_exp] [nama_10_gdp] [educ_enrl1tl] and [educ_uoe_enra02]. Number of students is expressed in millions on the left-hand axis; real spending per student is expressed in € on the right-hand axis. EU average non-weighted.

The UOE data collection reports comparable data on spending per student by ISCED2011 level for 2012-2015. Figure 57 presents data for 2014, the year for which data is available in most of the countries. They are ordered by spending per student on all ISCED2011 levels excluding early childhood education and care (ISCED02-8), expressed as a percentage of GDP per capita[191] (column 4). This data shows a wide variation between countries, ranging from 14.9 % in Romania to 33.3 % in Malta.

While the data confirms Nordic countries' relatively high spending, small countries with a low proportion of students, such as Malta and Cyprus, are also at the top of the scale. Compared to these countries, the data reveal relatively low spending on education in the five most populated countries — Germany, France, the UK, Italy and Spain, each accounting for at least around 10 % of the EU population (column 7). Bulgaria and Slovakia on the other hand, are no longer among the lowest spenders when the weight of the student population is taken into account. The table also shows the percentage of people in the 6-30 years age range, during which most people are likely to be in education (especially in compulsory education) as a rough indication of the age composition of the country, and the percentage of enrolments in the same age range as a very simple indication of the share of people in education in the country. Finally, the table shows the weight of the country population on the total EU population.

[190] COFOG data follow the ISCED1997 classification. Up to 2012, the UOE data collection also registered enrolments by ISCED1997 level classification. The shift to the ISCED2011 classification introduced a break in the UOE series. The computation of (COFOG) spending per student by level for the entire period is therefore not accurate. It is presented only for an exploratory analysis to be treated with caution.

[191] The value is obtained by dividing total government expenditure for a given ISCED2011 level of education by total enrolment in that same level and then dividing again by GDP per capita (and multiplying by 100).

Figure 57 — Public expenditure on education per student by education level, population and total enrolments (GDP per capita and percentages on total, 2014)

	ISCED 1-2	ISCED 3-4	ISCED 5-8	ISCED 02-8	%population 6-30	Enrolment/ population 6-30	Population/ EU population
RO	12.3	15.3	26.0	14.9	29.2	53.1	3.9
IE	16.5	24.5	24.6	19.2	32.9	65,2	0.9
CZ	19.5	22.2	21.5	19.7	27.2	58,4	2.1
LT	18.0	20.9	28.6	20.2	29.6	63,3	0.6
HU	15.0	32.8	27.8	21.0	28.1	58,8	1.9
ES	19.5	24.2	28.2	21.2	26.0	62,7	9.2
LU	20.0	19.7	45.6	21.4	30.7	52,2	0.1
IT	22.3	23.7	26.4	22.2	24.9	58,6	12.0
SK	20.4	22.1	35.4	22.5	30.9	52,7	1.1
EE	20.8	22.6	35.2	23.2	29.0	59,1	0.3
NL	20.0	23.2	38.7	23.7	30.1	66,3	3.3
DE	20.3	24.1	39	23.7	26.3	63,7	15.9
FR	20.6	31.7	34.4	24.2	30.3	61,8	13.0
BG	24.5	22.3	21.6	24.9	26.5	54,7	1.4
PL	26	22.3	31.5	25.2	30.6	58,5	7.5
PT	26.8	28.1	27.7	25.9	26.7	62,2	2.1
BE	23.9	30.1	38.5	26.6	29.5	64,1	2.2
SI	28.6	24.0	31.1	27.1	26.3	62,4	0.4
LV	27.4	29.0	30.3	27.1	28.7	58,4	0.4
UK	26.5	26.0	45.1	27.8	31.0	58,5	12.7
FI	25.2	22.7	48.5	28.1	29.3	68,2	1.1
AT	27.9	31.4	37.2	29.5	28.5	57,9	1.7
SE	24.0	28.0	60.7	30.8	30.3	64,3	1.9
DK	26.3	34.4	45.3	31.2	30.5	71,6	1.1
CY	34.5	39.5	36.0	32.7	33.9	47,9	0.2
MT	31.3	30.1	52.4	33.3	30.3	48,8	0.1

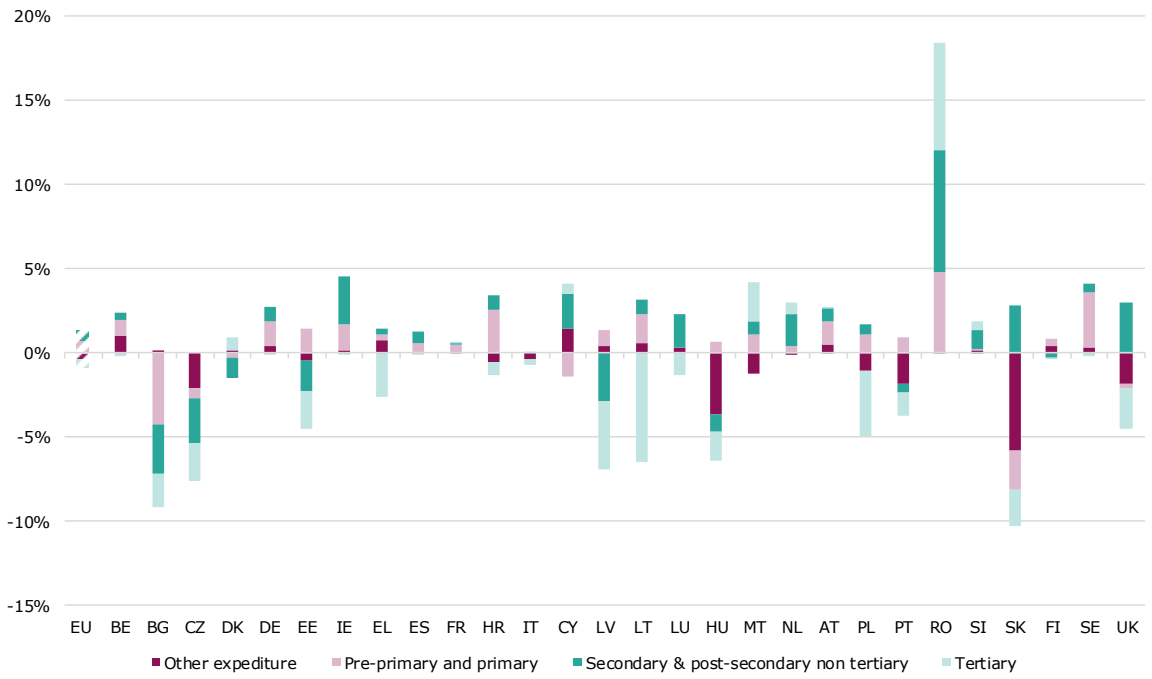
Source: Eurostat [educ_uoe_fine09] [demo_pjan] [educ_uoe_enra02].
Note: Data not available for HR, EL and EU. AT and HU data on spending are for 2013. The data is based on a full-time equivalent, which allows a comparison between students attending for a different number of hours per week.

3.2 Spending by education level

Changes in the expenditure composition by education level were uneven between countries and different levels of education.

Figure 58 shows the contribution of each education level to the real change in education expenditure between 2015 and 2016. At EU level, 'Tertiary education' and 'other expenditure' led the decline; they were offset by 'Pre-primary and primary schools' and 'Secondary and post-secondary non-tertiary education'. Lithuania registered the sharpest decline (6.5 pps) in spending on tertiary education, while Romania saw the biggest increase (6.4 pps). Romania recorded an even sharper increase (7.2 pps) in expenditure for secondary and post-secondary education. In most countries, primary and secondary education play a major role in determining the total change, partly because of their relative weight, although in some countries the contribution of tertiary education is also significant.

Figure 58 — Contribution of education level to real annual growth in public expenditure on education 2015-2016



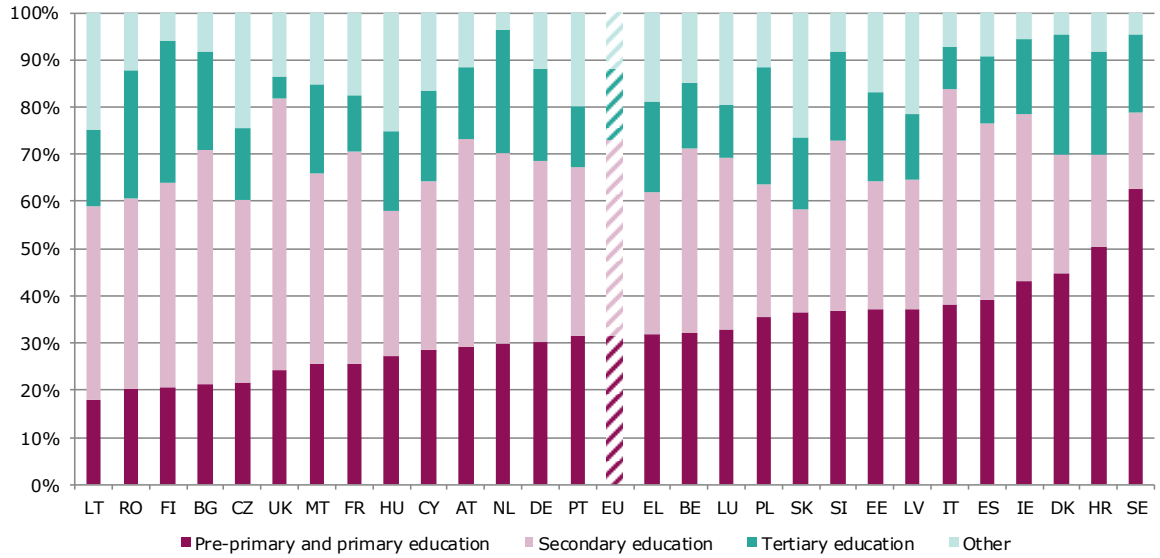
Source: DG EAC, based on Eurostat's general government finance and national accounts statistics. Online data code: [gov_10a_exp] and [nama_10_gdp].
Note: secondary education also includes post-secondary non-tertiary education. Real growth is calculated as the change over the previous year in total general government expenditure on education, valued at constant prices using the implicit deflator for final consumption of the general government.

The breakdown of public expenditure by level of education shows that the bulk of public expenditure is devoted to the school level. This is not surprising since this level covers all of compulsory schooling[192] and around two thirds of the number of years typically spent in education. It also accounts for 60 % or more of total education expenditure in all Member States (slightly less in Lithuania, Hungary and Slovakia), with a peak of over 80 % in Italy (Figure 59). Tertiary education accounts for more than 15 % of the total in 20 countries, reaching around 30 % in Finland. In Italy and in the UK this share is below 10 %. 'Other expenditure' includes various items such as education not classified by level, 'ancillary services' to education (such as school transport, meals etc.) and R&D on education[193]. Its share varies hugely, from around 4 % in the Netherlands to above 25 % in Slovakia.

[192] In the graph, post-secondary non-tertiary education (ISCED level 4) is shown together with upper secondary education (ISCED level 3). ISCED level 4 represents on average 2 % of total general government expenditure in education. The only three countries above the average are LU (2.38 %), LT (5.24 %) and UK (9.15 %).

[193] Some countries have recorded the bulk of expenditure on R&D under COFOG function education, instead of spreading it across function (i.e. industry, health, environment, etc.). The different treatment of this item might lead to an overestimate of 'other expenditure'.

Figure 59 — Public expenditure on education by level, 2016



Source: Eurostat's general government finance statistics. Online data code: [gov_10a_exp].
Note: Secondary education also includes post-secondary non tertiary education. Data is ordered by expenditure in pre-primary and primary education. Data for ES, FR, NL and SK is provisional. Data for PT is estimated.

3.3 Expenditure by transaction

National accounts record four categories of transactions for public expenditure on education:

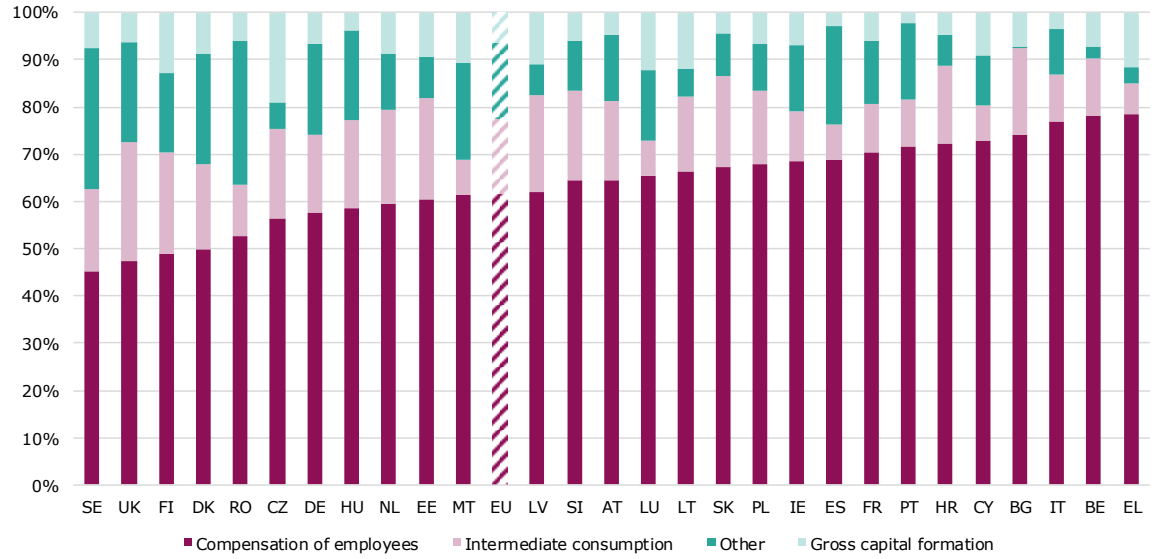
- 'compensation of employees' including gross salaries and social contributions for teaching and non-teaching staff[194];
- 'intermediate consumption', which covers the purchase of non-durable goods (e.g. teaching materials such as teaching manuals) and services needed to provide education (e.g. heating, electricity, cleaning and maintenance services);
- 'gross capital formation', which includes investment in acquiring fixed assets and durable goods (such as computers) and buildings; the depreciation of fixed assets is also included.
- 'other expenditure' was computed for simplicity by adding up the residual variety of transactions, including subsidies in the form of transfers to households and payments to private schools.

The main budget item in all countries is 'compensation of employees'. Data for 2016 confirm that this accounts for around 60 % of public spending on education in the EU on average (i.e. almost 3 % of GDP), ranging from above 75 % in Belgium, Greece and Italy to less than 50 % in the UK[195], Finland and Sweden. Its share is broadly stable over time: it represented 61.9 % of total expenditure on education in 2002.

[194] Dinis Da Costa, P and Araújo, L. (2015). *Teacher Costs*. A Joint Research Centre Scientific and Technical Report.

[195] Sweden also seems to spend a small share of the budget on compensation of employees. However about 20 % of Swedish schools are independent but financed by government grants. Consequently, salaries paid to teachers in these schools are registered under 'other expenditure'.

Figure 60 — Categories of public education spending, 2016



Source: DG EAC calculation on Eurostat's general government finance statistics. Online data code: [gov_10a_exp].
Note: Data for EU-28 average, ES, HR, NL and FI are provisional. Countries are ordered by increasing share of compensation of employees.

The second-biggest item is 'intermediate consumption', which ranges between 6.5 % in Greece and 25.3 % in the UK, while the EU average stands at 15.6 %. This item was 14.3 % of total expenditure in 2002. Grants to government-supported private institutions usually take the form of subsidies (accounted for under 'other') but can also be booked as intermediate consumption when the public authority purchases an educational service from a private provider; this may explain the greater weight of this item in some Member States.

'Gross capital formation' represented around 6.5 % of total education expenditure across the EU, down from 8.2 % in 2002. It accounted for less than 5 % of total education spending in seven Member States (Croatia, Austria, Slovakia, Hungary, Italy, Spain and Portugal in descending order) and for more than 15 % in the Czech Republic. By its nature this kind of expenditure might follow a cycle as spending is spread over several years and is also influenced by the trend in the number of pupils. Other countries (Bulgaria, the Czech Republic, Latvia and Lithuania), who had larger shares of spending on this item in recent years, are now reducing it.
The item 'other expenditure' was computed as a residual covering a large variety of transactions including subsidies, social benefits, transfers to households and payments to private schools. Its importance reflects the organisation of education provision, and it usually increases in line with reliance on the private (mostly non-profit) sector. For this reason, the share of this item varies widely between countries. It is above 25 % in Sweden and Romania and less than 5 % in Bulgaria, Belgium and Greece. On average, its share as a proportion of total public expenditure on education has increased only slightly (by 0.3 pps) since 2002.

3.4 From more spending to better performance

Spending figures *per se* cannot be linked to good or bad performance of the education system. The context, such as the social background of students and the choice of policies, can markedly influence the spending level and its efficiency and effectiveness. Policymakers struggle to identify relevant indicators to orient their spending decisions towards policy choices that will improve the education system's performance.

Most educational decisions face constraints in the availability of resources. It is obviously desirable to choose the least costly alternatives for reaching a particular objective or to have the largest impact per unit of cost (this can be referred to as 'efficiency'). A correct choice will free

up resources for other uses or allow any given investment to have greater impact ('opportunity cost') both inside the educational sector ('internal efficiency') or across public expenditure areas ('external efficiency').

Measuring efficiency[196] in public service provision is a very complex exercise.
Compared to a purely economic business model with a definite production function, the conceptualisation of what constitutes better performance in education, particularly at system level, is much more difficult. Several interrelated concepts are involved in the analysis of performance. The outputs of an education system in terms of cognitive skills, attitudes and behaviours actually have indirect positive effects on several desirable social outcomes such as health, labour productivity and social cohesion. There are therefore no precise and simple answers to questions like: 'What is the objective of education?' and 'How can you tell it has been achieved?'. Moreover, even if the monetary value of alternative outputs could be measured, this indication would not automatically translate into policy guidance. Equity considerations, for instance, might constrain political action.

Efficiency is usually referred to as the relation between the resources put into the production process and the output obtained. It is in principle a technical concept: when it is possible to achieve the same output with lower input ('input efficiency') or greater output with the same input ('output efficiency'), these solutions should be preferred.

Finally, given that spending decisions cover more than one period, increasing efficiency could imply increasing spending. Short-term 'command and control' policies might in fact hold expenditures down in the short term; however, they often have unfortunate consequences in the medium and long term and eventually result in a future need for higher spending to compensate a lack of necessary investment and prevention measures (e.g. in infrastructure).

3.5 An attempt to link quality and spending

Notwithstanding the many technical and conceptual difficulties, many attempts have been made to analyse efficiency in public expenditure. A recent European Commission technical note[197] has analysed the (output) efficiency of public expenditure in education. It found that efficiency has improved but remains uneven across Member States. Moreover, empirical results also suggest there is potential for improving efficiency in achieving excellence of results (measured by PISA scores) and equity of education (measured by the rate of the young population not in employment, education or training)[198].

Going beyond the efficiency concept mentioned above, this section will focus on effectiveness and equity, as the main broad dimension of quality of school education systems. It refers to 'educational effectiveness' as the ability to provide high-quality educational outcomes, by making the most of the human and physical resources available. Studies of educational effectiveness usually analyse whether specific resources have positive effects on different outcomes, and if so, how large these effects are[199]. 'Equity' will refer to a relatively small variation in educational outcomes across the student population[200].

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196 While in a firm, it is easy to convert both input and outputs in a monetary measure, in public service provision, such as education, the monetary value of output (and outcomes) is difficult to estimate or might simply not be possible to measure, e.g. the intrinsic value of education. It is however necessary to take into account the production cost when comparing similar educational outcomes. Cost-effectiveness analysis is an evaluation tool designed to assist decision making without assigning a monetary value to the outcomes.

197 European Commission (2017). *Investment in Human Capital — Assessing the Efficiency of Public Spending on Education*, A Technical note for the Eurogroup discussion on investment in human capital of 6 November 2017.

198 Canton, E., Thum-Thysen, A. and Voigt, P. (2018). *Economists' Musings on Human Capital Investment: How Efficient is Public Spending on Education in EU Member States?*, A European Economy Discussion Paper 081, June 2018. The paper refers to effectiveness as the relationship between educational output and higher-level outcomes (such as productivity, economic growth or welfare).

199 Hanushek E. and Lockheed, M. E. (1994). *Concepts of Educational Efficiency and Effectiveness*. A Human Resources Development and Operations Policy Working Paper, No 24.

200 OECD (2017). *The Funding of School Education: Connecting Resources and Learning*.

Following OECD[201], but limiting the analysis to the EU Member States, we identify the policy-related factors associated with effectiveness and equity as defined above. To measure these two concepts two PISA 2015 indicators are used: the proportions of top performers[202] and of low achievers[203] in science[204]. The first indicator captures to what extent a school system can produce excellent results (effectiveness). The second indicator points to a system's ability to ensure that as many pupils as possible reach at least a basic level of competences (equity).

These indicators are easy to communicate to a wider public and can be used to define clear policy objectives. Indeed, reducing the proportion of low achievers to 15 % is one of the benchmarks of the Education and Training 2020 framework (and as such is analysed in section 2.4). More sophisticated indicators of equity in education, also included in PISA, are not as easily translated into policy objectives and have therefore not been considered. These include the 'percentage of variation in science performance explained by students' socioeconomic status' and the 'score-point difference in science associated with one-unit increase of the PISA index of economic, social and cultural status'.

A glance at the Pearson correlation coefficient between the proportions of top performers and low achievers shows a strong negative correlation (r=-0.79). This simple metric seems to confirm that effectiveness and equity in school outcomes can be pursued at the same time, though obviously this is not a deterministic/causal relationship. For instance, the UK and Latvia have the same proportion of low achievers, but the proportion of top performers in the UK is almost three times as high as in Latvia. Similarly, Malta and Poland have the same proportion of top performers, while the proportion of low achievers in Malta is twice as high as in Poland (Figure 61).

Figure 61 — Proportions of top performers and low achievers in PISA (percentages in science, 2015)

Source: DG EAC calculation on PISA data.

201 OECD (2016). *Low-performing students: why they fall behind and how to help them succeed*. OECD (2016). *PISA 2015 results (Volume I): Excellence and Equity in Education*.

202 Top performers are students reaching PISA level 5 or higher, i.e. able to creatively and autonomously apply their knowledge and skills to a wide variety of situations.

203 Low achievers are students scoring below PISA level 2, i.e. failing to reach the minimum level of reading skills and competences required to participate effectively in their studies, in the labour market and ultimately in society.

204 Science was used because it was the main topic of PISA 2015. Replacing science with either reading or mathematics yields similar results.

The relatively high correlation between top performers and low achievers suggests that there may be policy-related variables associated with both effectiveness and equity. PISA 2015[205] includes a large set of policy-related indicators that could be tested[206] in this respect.

Figure 62 below divides policy input indicators into two groups: school resources and institutional structures of school systems[207].

Figure 62 — PISA 2015 indicators used in the analysis

Indicator	Description
School resources	
Cumulative spending per student	Cumulative expenditure per student from age 6-15 in USD PPP.
Class size	Average size of language-of-instruction classes in the most common national grade for 15-year-olds in PISA-participating schools
Pupil/teacher ratio	Average number of pupils per teacher in PISA–participating schools
Instruction time in science	Average time spent in science lessons per week in PISA-participating schools
Equity in resource allocation	The percentage of variance of the principal's concern about the educational material at the school explained by the school's socioeconomic profile. A negative sign shows that principals of socioeconomically disadvantaged schools are more concerned about the educational material at the school than principals of advantaged schools.
Index of shortage of educational material	School principals reported the extent to which their school's capacity to provide instruction was hindered by a shortage or inadequacy of physical infrastructure. The index is normally distributed.
Teacher salary/GDP per capita	Average of salaries of upper secondary and lower secondary teachers with typical qualifications in the respective countries and economies after 15 years of experience, relative to GDP per capita.
Institutional structure	
School autonomy over curriculum	Share of the responsibility for the curriculum lying with school principals, teachers or school boards. This includes: choosing textbooks; deciding which courses are offered; and determining the content of those courses.
School autonomy over resources	Share of the responsibility for school resources lying with school principals, teachers or school boards. This includes: appointing and dismissing teachers; determining teachers' starting salaries and salary raises; and formulating school budgets and allocating them within the school.
Mandatory standardised tests	Percentage of students in schools where mandatory standardised tests are used at least once a year.
Achievement data posted publicly	Percentage of students in schools where achievement data is posted publicly.
Achievement data tracked over time	Percentage of students in schools where achievement data is tracked over time by an administrative authority.
Index of social inclusion	The index of social inclusion measures how diverse the student population of a school is in terms of socioeconomic background[208]. The range is 0-100. A high value means that the socioeconomic diversity of pupils is large within schools and small between schools, i.e. the degree of school segregation in that country is low.

Source: OECD (2016). PISA 2015 Results (Volume I): Excellence and Equity in Education and OECD (2016). PISA 2015 Results (Volume II): Policies and Practices for Successful Schools.

Only three indicators are significantly correlated with both proportions of top performers (positively) and low achievers (negatively): school autonomy over the curriculum, the index of social inclusion, and the ratio of teacher salary to GDP per capita (Figure 63 and Figure 64). This finding implies that school systems with a larger degree of curricular autonomy, more socioeconomic diversity within schools or higher teacher salaries are likely to have more effective and equitable outcomes[209] (Figure 65).

[205] OECD (2016). *PISA 2015 results (Volume I): Excellence and Equity in Education*.
OECD (2016). *PISA 2015 results (Volume II): Policies and Practices for Successful Schools*.

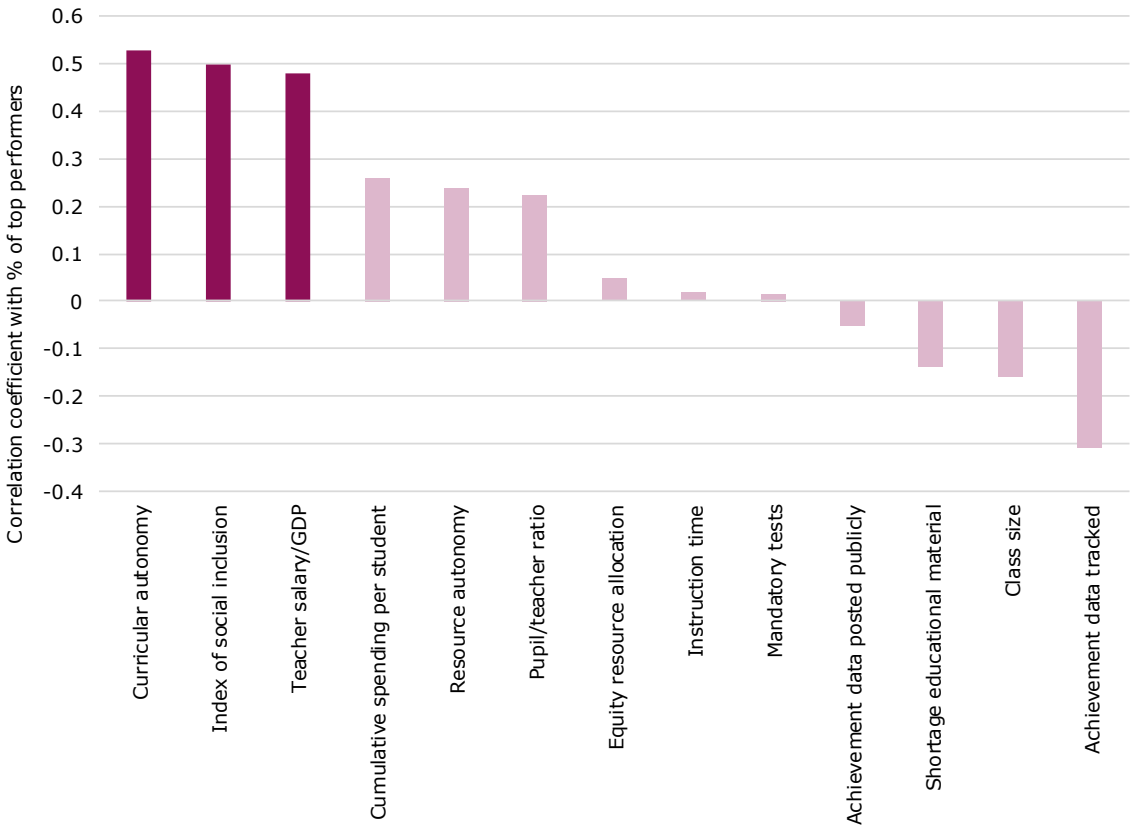
[206] PISA also collects extensive information on the family background, but these variables have been excluded from the analysis since they are outside the control of school policies.

[207] Woessmann, L. (2016). The Importance of School Systems: Evidence from International Differences in Student Achievement. *Journal of Economic Perspectives*, Vol. 30/3, pp.3-32.

[208] The index of social inclusion is calculated as 100*(1-ρ), where rho stands for the intra-class correlation of socio-economic status i.e. the variation in student socio-economic status between schools, divided by the sum of the variation in student socio-economic status between schools and the variation in student socio-economic status within schools, and multiplied by 100.

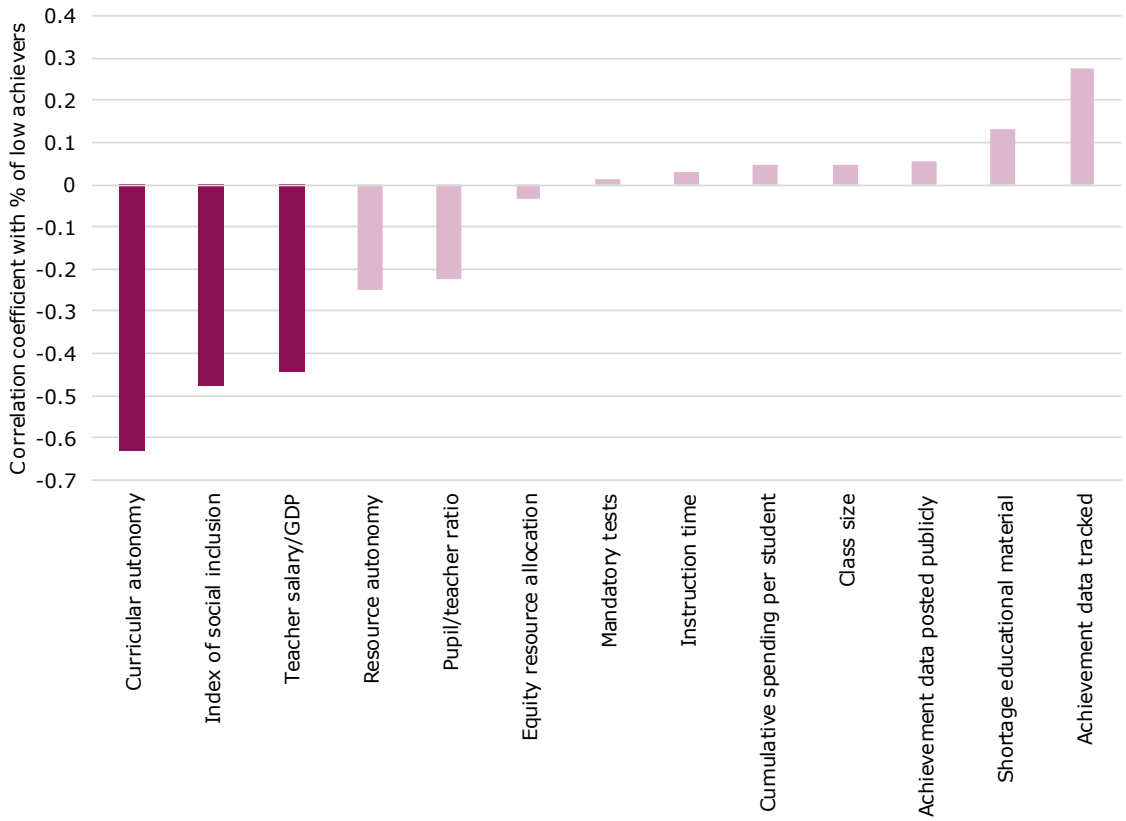
[209] Taken together, school autonomy over curriculum, the index of social inclusion and the ratio of teacher salary to GDP can explain a large part of the variation in effectiveness and equity among EU Member States. Ordinary least squares regressions show that these three factors are all significant and explain around two thirds of the variance in the proportions of top performers and low achievers.

Figure 63 — Correlations between resource and institutional factors and the proportion of top performers in science in PISA 2015 in EU Member States



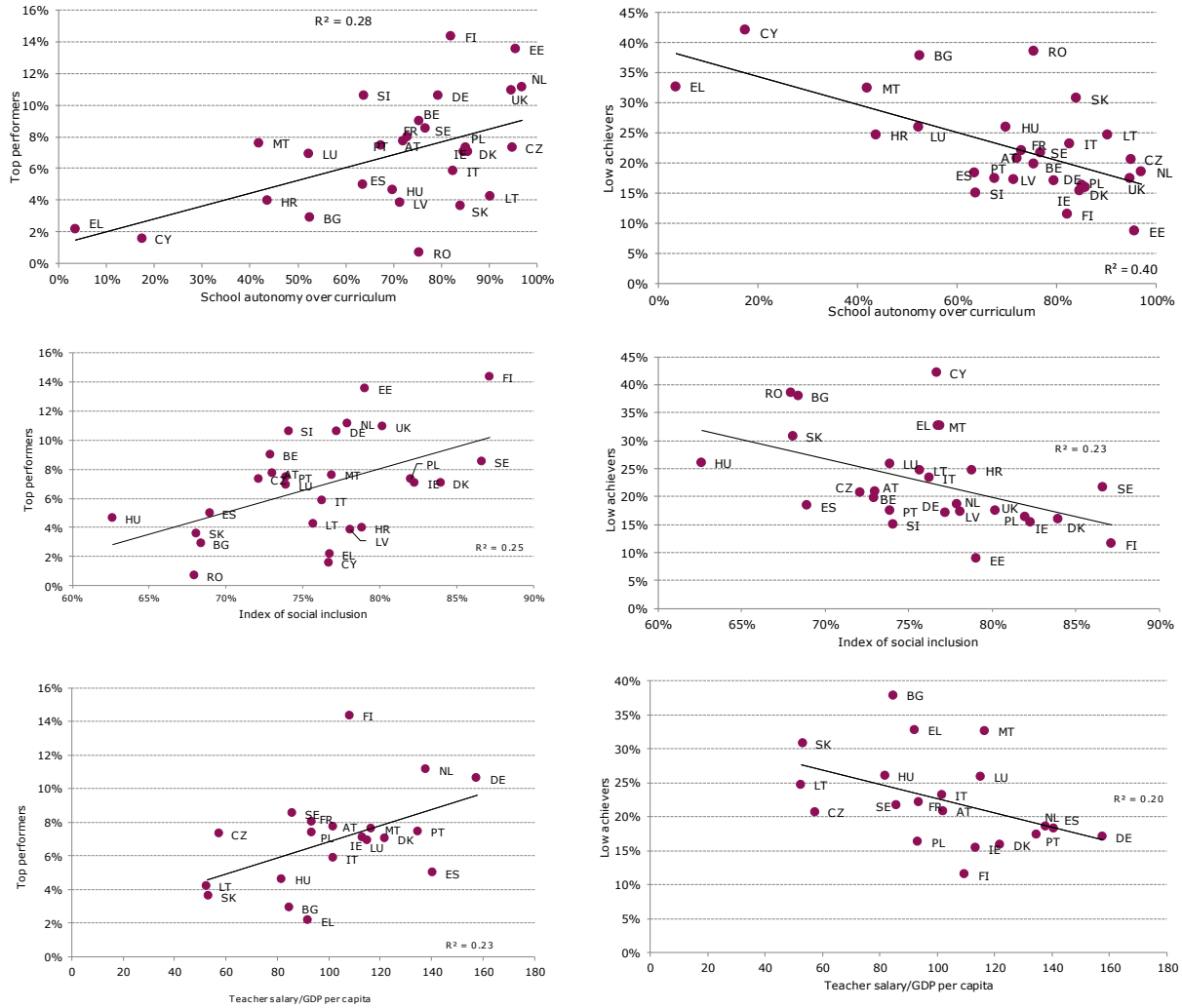
Source: DG EAC calculations
Note: statistically significant correlation coefficients are in darker tone.

Figure 64 — Correlations between resource and institutional factors and the proportion of low achievers in science in PISA 2015 in EU Member States



Source: DG EAC calculations
Note: statistically significant correlation coefficients are in darker tone

Figure 65 — School autonomy over curriculum, index of social inclusion and ratio of teacher salary to GDP per capita vs % of top performers and low achievers in science



Source: DG EAC calculations.

Autonomy over the curriculum allows schools to better adapt to their students' needs and knowledge compared to a centralised system[210]. PISA 2015 identifies five dimensions of school autonomy: curriculum, resource allocation, student assessment, disciplinary policy and admission policy. Over the last three decades, many education systems have significantly increased individual schools' autonomy over curricula and resource allocation[211]. The benefits of school autonomy may also depend on how prepared schools are to use their responsibility effectively and how accountable they are for their students' outcomes to parents, local

[210] European Commission/DG EAC(2017). *Study on governance and management policies in school education systems*.

[211] Cheng, Y., Ko, J. and Lee, Th. (2016). School autonomy, leadership and learning: A reconceptualization. *International Journal of Educational Management*, Vol. 30/2, pp. 177-196.
Wang, Y. (2013). *Education Policy Reform Trends in G20 Members*.

communities and education authorities[212]. However, none of the indicators of accountability available in PISA 2015 (i.e. mandatory tests, achievement data posted publicly, achievement data tracked over time) is significantly correlated with the shares of top performers or low achievers[213]. A possible explanation is that accountability mechanisms are already well developed in most EU Member States[214] and further extending them has no impact on effectiveness or equity. The effects of school autonomy may also be interrelated with the management capacity of schools. Collecting data on school management practices in operations, monitoring, target setting, and people management in eight countries, Bloom et al. [215] find higher management skills to be related to better student achievement.

Socioeconomic diversity of pupils within schools is usually associated with more equitable outcomes, but it can also be a factor increasing the effectiveness of a school system[216]. Some performance differences between schools may be related to the socioeconomic composition of the school's student population or other characteristics of the student body. For instance, in some countries residential segregation, based on income or on cultural or ethnic background, often translates into disparities in the quantity and quality of resources[217]. Disadvantaged students have generally been shown to benefit from sharing school with more privileged peers[218], while the implications for advantaged students are still debated in the literature. Recent research has found that some countries host socioeconomically diverse schools that are able to improve the educational achievement of both disadvantaged and advantaged students[219].

The ratio of teacher salary to GDP per capita is a proxy for the attractiveness of the teaching profession[220]. Studies have shown that quality of teachers is closely related to student outcomes[221]. Measuring teacher quality by both absolute teacher salary and teachers' relative salary position in a country's income distribution, Dolton and Marcenaro-Gutierrez[222] find that

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212 OECD (2016). PISA 2015 results (Volume II): *Policies and Practices for Successful Schools*. Hanushek, E. A., Link, S. and Woessmann, L. (2013). Does school autonomy make sense everywhere? Panel estimates from PISA. Journal of Development Economics, Vol. 104, pp. 212-232.

213 This holds true also when they are interacted with indicators of school autonomy.

214 European Commission/DG EAC (2015). *Comparative study on quality assurance in EU school education systems: Policies, procedures and practices*.

215 Bloom, N., Lemos, R., Sadun, R. and Van Reenen, J. (2015). Does Management Matter in schools? *The Economic Journal*, vol. 125, pp. 647–674.

216 Brunello, G. and De Paola, M. (2017). *School Segregation of Immigrants and its Effects on Educational Outcomes in Europe*. An EENEE Analytical Report 30.

217 Reardon, S. and Owens A. (2014). 60 years after Brown: Trends and consequences of school segregation. *Annual Review of Sociology*, Vol. 40/1, pp. 199-218.

218 OECD (2016). *Low-Performing Students: Why They Fall Behind and How to Help Them Succeed*.
European Commission (2017). Communication on *School development and excellent teaching for a great start in life*. SWD(2017) 165 final.

219 Montt, G. (2016). Are socioeconomically integrated schools equally effective for advantaged and disadvantaged students? *Comparative Education Review*, Vol. 60/4, pp. 808-832.

220 Analysing all PISA participating countries, OECD (2016). *PISA 2015 Results (Volume II) Policies and Practices for Successful Schools* finds the relationship between science performance and the ratio of teacher salary to GDP not statistically significant. However, this result is clearly driven by some emerging countries with relatively high teacher salaries and bad science performance (Figure II.6.7, p. 195).

221 Allison-Jones, L. L. and Hirt, J. B. (2004). Comparing the teaching effectiveness of part-time and full-time clinical nurse faculty *Nursing Education Perspectives*, Vol. 25/5, pp. 238-243.
Hanushek, E. A., Piopiunik, M. and Wiederhold, S. (2014). The value of smarter teachers: International evidence on teacher cognitive skills and student performance, an NBER Working Paper 20727.
Hanushek, E. A. and Rivkin, S. G. (2006). Teacher quality. In E. A. Hanushek and F. Welch, ed., *Handbook of the Economics of Education*, Volume. 2., pp. 1051-1078.
Hanushek, E. A. and Woessmann, L. (2011). The Economics of International Differences in Educational Achievement. In E. A. Hanushek, S. Machin and L. Woessmann, ed., *Handbook of the Economics of Education*, Volume 3, pp. 89-200.
Metzler, J. and Woessmann, L. (2012). The impact of teacher subject knowledge on student achievement: Evidence from within-teacher within-student variation, Journal of Development Economics, Vol. 99/2, pp. 486-496; Palardy, G. J. and Rumberger, R. W. (2008). Teacher effectiveness in first grade: The importance of background qualifications, attitudes, and instructional practices for student learning. *Educational Evaluation and Policy Analysis*, Vol. 30/2, pp. 111-140.

222 Dolton, P. and Marcenaro-Gutierrez, O. D. (2011). If You Pay Peanuts Do You Get Monkeys? A Cross-country Analysis of Teacher Pay and Pupil Performance. *Economic Policy* 26(65), pp. 5–55.

higher teacher quality is related to better student achievement using data from several waves of PISA and of Trends in International Mathematics and Science Study (TIMMS) assessments. The results are consistent with the positive effects of recruiting higher-ability individuals into teaching. Higher salaries can help school systems attract the best candidates to the teaching profession, and signal that teachers are regarded and treated as professionals.

Interestingly, neither cumulative expenditure per student nor class size — or any other resource input — is significantly correlated with effectiveness or equity. This is in line with several studies consistently finding no strong effects of class size in most countries[223]. The decision to reduce class size should ultimately depend on how much it improves student outcomes compared to other costly policy interventions[224].

In conclusion, making the teaching profession more attractive, enhancing autonomy over curriculum to schools and preventing or redressing school segregation stand out as promising measures to increase the effectiveness and equity of school education in EU Member States. Though it is worth repeating that correlation does not necessarily mean causality, PISA 2015 findings support recent scientific literature looking at the causal relationship between school systems characteristics and effectiveness and equity. They seem to indicate that the effectiveness and equity of school education systems can be promoted at the same time.

It should also be noted that no single policy instruments can be identified that would increase quality of education under all circumstances. The success of an education system is rather determined by an interaction of different policies. For example, beyond education policies, the business environment and budgetary policies matter as well. In particular, to strengthen the link between educational attainment and productivity, policy needs to support business environments conducive to the creation of high-skilled jobs, e.g. by removing barriers to firm entry, exit and growth or through broader initiatives to promote regional development of skills-intensive industries.

[223] Several studies researched the impact of class size reduction on student performance scores in both primary and secondary education. The assumption is that smaller classes enhance student test scores. However, results of existing evaluations of class size reductions are disputed or showed rather small improvements in the achievements of disadvantaged pupils:
Angrist, J. D. and Lavy, V. (1999). Using Maimonides' rule to estimate the effect of class size on scholastic achievement. *The Quarterly Journal of Economics*, vol. 114, pp. 533-575;
Gibbons, S. and McNally, S. (2013). The effects of resources across school phases: A summary of recent evidence. A CEP Discussion Paper No 1226;
Leuven, E. and Oosterbeek, H. (2017). *Class size and student outcomes in Europe*. An EENEE Analytical Report 32;
Rivkin, S. G., Hanushek, E. A., Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica*, Vol. 73, pp. 417-458.

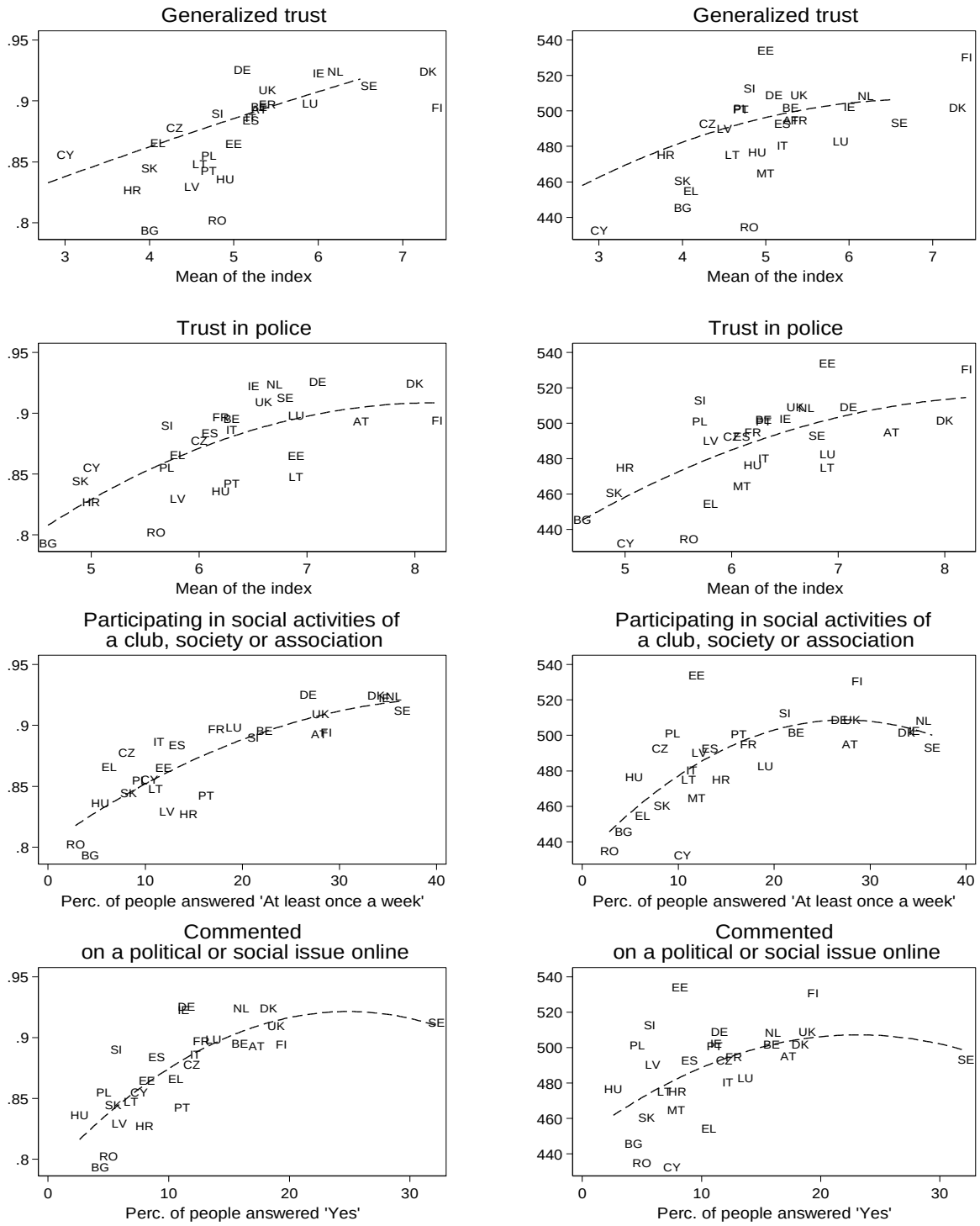
[224] Fredriksson, P., Ockert, B. and Oosterbeek H. (2013). Long-term effects of class size. *The Quarterly Journal of Economics*, Vol. 128/1, pp. 249-285.

Part 4

Annex

4 Annex: Additional tables

Figure 66 — Country level relations between Social capital dimensions, the HDI and PISA science scores (2015-2016)



Source: HDI: UNDP; Trust: European Quality of Life Survey 2016, Eurofound; PISA 2015, OECD.

European Commission

Figure 67 — Structural indicators on early childhood education and care (ECEC): Legal framework, 2017/2018

	Starting age of		
	1. Universal legal entitlement to ECEC	2. Compulsory ECEC	3. Compulsory primary education
BE fr	2y 6mths		6
BE de	3		6
BE fl	2y 6mths		6
BG		5	7
CZ	4	5	6
DK	6 mths		6
DE	1		6
EE	1y 6mths		7
IE			6
EL		5	6
ES	3		6
FR	3		6
HR		6	7
IT			6
CY		4y 8mths	5y 8mths
LV	1y 6mths	5	7
LT		6	7
LU	3	4	6
HU		3	6
MT	2y 9mths		5
NL	*	5	6
AT		5	6
PL	3	6	7
PT	4		6
RO			6
SL	11 mths		6
SK			6
FI	9 mths	6	7
SE	1		7
UK-ENG	3		5
UK-WLS	3		5
UK-NIR			4
UK-SCT	3		5

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe 2018, an internal report.
Note: * In the Netherlands, the ECEC system combines a demand-driven structure for children aged 0-4 and supply-side arrangements for all children aged 4 and upwards and for children aged 2.5-4 from disadvantaged backgrounds.

Figure 68 — Structural indicators on early childhood education and care (ECEC): Selected quality aspects, 2017/2018

	1. At least one staff member with a tertiary qualification in education sciences	2. CPD professional duty or necessary for promotion	3. Curriculum or Educational guidelines	4. Language programmes as targeted support measure	5. Parent support	
					5.1. Home-learning guidance	5.2. Parenting programmes
BE fr	■	●	●	■		
BE de	●	●	■	■		
BE fl	■	●	●	●		
BG	■	■	■	■		■
CZ		■	■	■		
DK			●	●		
DE	●	●	●	●	●	
EE	●	●	●	●	●	■
IE			●		●	
EL	●	■	●	■		Only for under 3s
ES	■	■	●	●		■
FR	■	■	■	■	●	●
HR	●	●	●	●	●	●
IT	■	■	■	■		
CY	■	■	■		■	
LV		●	●	●		
LT	●	●	●	●	●	
LU	●	●	●	●	●	
HU	■	●	●	■		
MT	■	■	●	●		■
NL	■		●	●		
AT		●	●	●	●	■
PL	■	■	■	■	■	●
PT	●	■	■	●	■	●
RO	■	●	●	●	●	●
SL	●	●	●	●	●	●
SK		■	■	■		
FI	●	●	●	●		
SE	●		●	●		
UK-ENG	■	■	●	●	●	●
UK-WLS	■	■	■	●	●	●
UK-NIR	■	■	■	●	●	●
UK-SCT		●	●	●	●	●

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe 2018, an internal report.
Note: ■ = children aged 3 years or more ([225]); ● = the entire ECEC phase (from birth to the start of compulsory education).
1. Tertiary qualification in education = minimum 3 years ISCED 6.
2. CPD refers to continuing professional development.

[225] '■' refers to children aged 2 years or more in France, 2.5 years or more in BE (fr) and BE (fl) and to children aged 4 years or more in EL and the NL.

European Commission

Figure 69 — Structural indicators on achievement in basic skills, 2017/2018

	1. National tests in compulsory education			2. Recent national reports on achievement			3. Use of performance data in school evaluation	4. Guidelines on underachievement as a topic in ITE			5. Additional resources provided by top-level authorities to schools with disadvantaged students
BE fr	R	M	S	R	M	S	●	R	M	S	●
BE de				R	M	S	●	R	M	S	●
BE fl	R	M		R	M	S	●	R	M	S	●
BG	R	M	S	R	M	S	●				●
CZ	R	M		R	M	S	●				●
DK	R	M	S	R	M	S	●	R	M	S	
DE	R	M	S	R	M	S	●	R			●
EE	R	M	S	R	M	S	●	R	M	S	●
IE	R	M	S	R	M	S	●	R	M		●
EL				R		S					●
ES	R	M	S	R	M	S	●				●
FR	R	M	S	R	M	S	●	R	M	S	●
HR				R	M	S					
IT	R	M		R	M	S	●				●
CY	R	M		R	M	S		R	M	S	●
LV	R	M	S	R	M	S	●				●
LT	R	M	S	R	M	S	●	R	M	S	●
LU	R	M	S	R	M		●				●
HU	R	M		R	M		●	R	M	S	
MT	R	M	S	R	M	S	●	R	M		
NL	R	M	S	R	M	S	●				●
AT	R	M		R	M		●	R	M	S	●
PL	R	M	S	R	M	S	●	R	M	S	●
PT	R	M	S	R	M	S	●				●
RO	R	M	S	R	M	S	●				
SL	R	M	S	R	M	S		R	M	S	●
SK	R	M		R	M	S		R	M		●
FI	R	M	S	R	M						●
SE	R	M	S	R	M	S	●	R	M	S	●
UK-ENG	R	M	S	R	M	S	●	R	M		●
UK-WLS	R	M		R	M	S	●	R	M	S	●
UK-NIR	R	M		R	M	S	●	R	M	S	●
UK-SCT	R	M		R	M	S	●	R	M		●

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe 2018, an internal report.
Note: 'R' = reading; 'M' = mathematics; 'S' = science.

Figure 70 — Structural indicators on early leaving from education and training (ELET) Table 1, 2017/2018

	1. National data collection on ELET based on a student register	2. Policies for increasing the flexibility and permeability of education pathways:			3. Policies for language support for students with a different mother tongue
		2.1.Providing alternative education & training pathways	2.2. Facilitating transitions within education & training systems	2.3.Recognising skills and/or qualifications	
BE fr	●	●	●	●	●
BE de			●	●	●
BE fl	●	●	●	●	●
BG	●	●			●
CZ	●	●	●	●	●
DK	●	●			●
DE		●	●		●
EE	●	●			●
IE	●	●			●
EL	●	●	●		●
ES		●	●		●
FR	●	●	●	●	●
HR			●		●
IT	●	●	●	●	●
CY	●	●	●		●
LV	●	●		●	●
LT	●	●	●	●	●
LU	●	●		●	●
HU	●	●			
MT	●	●	●	●	●
NL	●	●	●		●
AT	●	●	●		●
PL	●	●		●	●
PT	●	●	●	●	●
RO		●	●	●	●
SL		●	●	●	●
SK		●	●		●
FI	●	●	●	●	●
SE	●	●	●	●	●
UK-ENG	●	●	●		●
UK-WLS	●	●	●		●
UK-NIR		●	●		●
UK-SCT	●	●	●	●	●

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe 2018, an internal report.

European Commission

Figure 71 — Structural indicators on early leaving from education and training (ELET) Table 2, 2017/2018

	4. Policies encouraging the inclusion of ELET in ITE and/or CPD	5. Education and career guidance in schools, ISCED 2 and 3*	6. Policies to support early leavers re-enter the education & training system:		
			6.1.Second chance education	6.2. Education and career guidance	6.3. Youth guarantee
BE fr	●	●	●	●	●
BE de	●		●		
BE fl	●	●	●	●	●
BG			●	●	●
CZ		●	●	●	●
DK				●	
DE	●	●	●	●	●
EE	●	●	●	●	●
IE	●	●	●		
EL		●	●	●	●
ES	●	●	●	●	●
FR	●	●	●	●	●
HR			●		●
IT	●	●	●		●
CY		●	●		
LV	●	●	●	●	●
LT		●	●	●	●
LU	●		●	●	●
HU	●	●	●		●
MT	●		●	●	●
NL	●		●	●	●
AT	●	●	●	●	●
PL		●	●	●	●
PT	●	●	●	●	●
RO		●	●	●	●
SL	●	●	●	●	●
SK		●	●		
FI		●	●	●	●
SE		●	●	●	●
UK-ENG			●	●	
UK-WLS			●	●	
UK-NIR			●	●	
UK-SCT		●	●	●	●

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe 2018, an internal report.
Note: * Education and career guidance provided both as a compulsory part of the curriculum and by school guidance services in lower and upper secondary education.

Figure 72 — Structural indicators on higher education attainment, 2017/2018

	1.Quantitative targets for widening participation and/or attainment of under-represented groups	2. Monitoring of socioeconomic background of students	3. Recognition of informal or non-formal learning in entry to higher education	4. Completion rates as a required criterion in external QA	5. Performance-based funding mechanisms with a social dimension focus
BE fr		●	●	●	
BE de				●	
BE fl	●	●	●	●	●
BG		●		●	
CZ					
DK		●	●		
DE		●			
EE				●	
IE	●	●	●	●	●
EL	●				
ES		●	●	●	●
FR	●	●	●	●	●
HR		●			●
IT		●	●	●	●
CY	●				
LV					
LT		●	●	●	
LU			●		●
HU		●			
MT	●	●	●		
NL	●	●			
AT	●	●			●
PL		●	●	●	●
PT			●	●	●
RO	●	●			●
SL				●	
SK					
FI		●	●		
SE		●	●		
UK-ENG	●	●	●	●	●
UK-WLS	●	●	●	●	●
UK-NIR		●	●	●	●
UK-SCT	●	●	●		

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe, 2018, an internal report.

European Commission

Figure 73 — Structural indicators on graduate employability, 2017/2018

	1. Regular labour market forecasting used systematically	2. Required involvement of employers in external QA	3. Requirements OR incentives for work placements for all students	4. Career guidance for all students in HEIs	5. Regular graduate surveys used systematically
BE fr	●	●		●	●
BE de		●	●		
BE fl		●		●	●
BG	●	●	●	●	●
CZ		●		●	
DK		●		●	●
DE				●	
EE	●	●	●	●	●
IE	●			●	●
EL	●	●		●	
ES		●	●	●	
FR	●	●	●	●	●
HR		●	●		
IT	●	●	●	●	●
CY				●	
LV	●	●			
LT	●	●	●	●	
LU				●	
HU				●	●
MT		●	●	●	
NL	●	●		●	●
AT		●		●	
PL	●	●		●	●
PT		●		●	
RO		●	●	●	●
SL		●		●	
SK				●	●
FI	●			●	
SE	●	●		●	●
UK-ENG	●			●	●
UK-WLS	●			●	●
UK-NIR	●			●	●
UK-SCT	●			●	●

Source: European Commission/EACEA/Eurydice (2018). *Structural Indicators for Monitoring Education and Training Systems in Europe* 2018, an internal report.

Figure 74 — Structural indicators on learning mobility, 2017/2018

	Portability of grants and/or loans			Percentage of higher education institutions using ECTS	Recognition of qualifications		
	Full	Partial	No		Yes	Maybe	No
BE fr			●	100 %		●	
BE de	●[b]			100 %		●	
BE fl	●[a]			100 %	●		
BG			●	National system, ECTS compatible			●
CZ		●[c]		75 %-99 %		●	
DK	●[b]			100 %			●
DE	●[b]			75 %-99 %			●
EE		●[c]		100 %			●
IE	●[b]			75 %-99 %			●
EL			●	100 %			●
ES		●[d]		100 %			●
FR	●[b]			75 %-99 %			●
HR		●[d]		100 %			●
IT		●[d]		100 %			●
CY	●[a]			100 %			●
LV		●[d]		National system, ECTS compatible			●
LT		●[d]		100 %			●
LU	●[a]			100 %		●	
HU		●[c]		National system, ECTS compatible			●
MT		●[d]		100 %	●		
NL	●[b]			100 %		●	
AT	●[b]			100 %			●
PL		●[c]		100 %	●		
PT		●[d]		100 %		●	
RO			●	100 %			●
SL	●[a]			100 %			●
SK		●[c]		100 %		●	
FI	●[a]			National system, ECTS compatible			●
SE	●[a]			National system, ECTS compatible	●		
UK-ENG			●[e]	National system, ECTS compatible			●
UK-WLS		●[d]		National system, ECTS compatible			●
UK-NIR		●[d]		National system, ECTS compatible			●
UK-SCT	●[b]			National system, ECTS compatible			●

Portability of student grants and/or loans

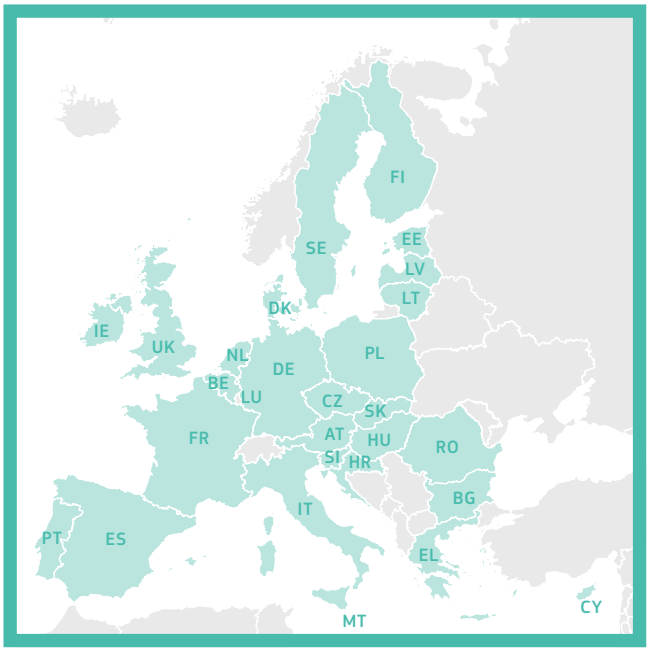
Yes	a) Full portability or b) portability of domestic student support measures — grants and/or loans — for credit and degree mobility, but with some restrictions.
Partial	Credit portability c) without restrictions and d) with restrictions related to geography (country limitations), and/or types of programme, and / or field of study or time. No degree portability or not all major support measures with degree portability.
No	No portability: public grants and/or loans are only provided if students study in the home country. e) No grants

Recognition of qualifications for learner mobility

Yes	All higher education qualifications issued in other EHEA countries are recognised on an equal level with qualifications in the home country.
Maybe	Automatic Recognition takes place with a subset of European countries; for other countries specific procedures are in place for recognition.
No	There is no automatic recognition at system level.

Source: European Commission/EACEA/Eurydice (2018). Structural Indicators for Monitoring Education and Training Systems in Europe, 2018, an internal report.
Note: The summary table shows updated composite indicators, which are based on indicators published in the 2016 Mobility Scoreboard. Indicator 1 is an update based on Indicator 3 of the Mobility Scoreboard; Indicator 2 is based on Figure 5.1 of the Eurydice background report[226]; and Indicator 3 is based on Indicator 6 of the Scoreboard.

[226] European Commission/EACEA/Eurydice (2016). *Mobility Scoreboard: Higher Education Background Report*.



AT	Austria
BE	Belgium
BE fr	Belgium – French speaking community
BE nl	Belgium – Dutch speaking community
BE de	Belgium – German speaking community
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
EU	European Union
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom
UK-ENG	England
UK-NIR	Northern Ireland
UK-SCT	Scotland
UK-WLS	Wales

The Education and Training Monitor 2018 is accompanied by

28 individual country reports

&

a set of contextual indicators

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online visualisation tools

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COM	Communication of the European Commission
CPD	Continuing professional development
DG EAC	Directorate-General for Education and Culture, European Commission
DG EMPL	Directorate-General for Employment, Social Affairs and Inclusion (European Commission)
EACEA	Education, Audiovisual and Culture Executive Agency (European Commission)
ECEC	Early childhood education and care
ECTS	European credit transfer and accumulation system
EENEE	European Expert Network on Economics of Education
EHEA	European Higher Education Area
EQAVET	European Quality Assurance for Vocational Education and Training
ET 2020	The EU's strategic framework for European cooperation in education and training
EUROPE 2020	The EU's ten-year jobs and growth strategy
EUROSTAT	Statistical office of the European Union
GDP	Gross Domestic Product
HEIs	Higher education institutions
IEA	International Association for the Evaluation of Educational Achievement
ICCS	2016 International Civic and Citizenship Education Study by IEA
ISCED	International Standard Classification of Education
ITE	Initial teacher education
JRC	Joint Research Centre (European Commission)
LFS	EU Labour Force Survey (Eurostat)
OECD	Organisation for Economic Co-operation and Development
OJ	Official Journal of the EU
PIAAC	Programme for the International Assessment of Adult Competencies (OECD)
PISA	Programme for International Student Assessment (OECD)
PPS/P.P.	Purchasing Power Standard / percentage point
QA	Quality assurance
SILC	EU statistics on income and living conditions
SWD	Staff Working Document of the European Commission
TALIS	Teaching and Learning International Survey (OECD)
TIMSS	Trends in International Mathematics and Science Study (IEA)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UOE	Common data collection of the UNESCO Institute for Statistics, OECD and Eurostat
VET	Vocational education and training

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