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To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union

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PART 6/10

## **COMMISSION STAFF WORKING DOCUMENT**

### **The situation of young people in the European Union**

#### *Accompanying the document*

#### **Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions**

#### **on the implementation of the EU Youth Strategy 2019-2021**

{COM(2021) 636 final} - {SWD(2021) 286 final}

## 6. Education and training

Participation in formal education and non-formal learning allows children and young people to develop their personal and social potential: they acquire skills and competences and the ability to be active citizens and integrated members of society.

Indeed, education and learning are recognised as the building blocks of an inclusive and cohesive society <sup>(1)</sup>. High-quality and accessible education is considered crucial to reduce youth social exclusion <sup>(2)</sup>. In order to achieve this aim, education and learning must be inclusive towards all young people, irrespective of their social, economic and cultural background and of the environment – physical or digital – in which it takes place <sup>(3)</sup>. This is particularly important at a time when the world of education is undergoing considerable transformations.

Digitalisation has a powerful impact on both the way we learn and what we learn. New technologies often require substantial adaptation from teachers, trainers and learners themselves, with additional skills needed to navigate new digital learning environments.

In these changing circumstances, young people must be equipped with digital competences to thrive in a digital society and to take advantage of digital learning <sup>(4)</sup>. In this context, digital education in schools is a priority. A recent report illustrates that European countries are increasingly investing in digital infrastructure in schools and providing teachers with continuing professional development in digital education <sup>(5)</sup>.

Non-formal learning is also adapting to the process of digitalisation. Training in digital skills is more and more in demand <sup>(6)</sup> and mechanisms of skills recognition have to adapt to new online learning modalities <sup>(7)</sup>.

The first section of this chapter illustrates the level of participation of young people in non-formal learning and its development over the last few years. The second section discusses young people's digital skills and the impact of different levels of formal education. The final section considers the increasing use of digital technologies in education and learning.

### 6.1. Non-formal learning

Non-formal learning covers any institutionalised, intentional and organised learning activities outside the formal education system. Non-formal education and training comprises courses, seminars and workshops, private lessons and instruction and guided on-the-job training <sup>(8)</sup>.

<sup>(1)</sup> Council of the European Union, 2010.

<sup>(2)</sup> Council of the European Union, 2017.

<sup>(3)</sup> European Commission/EACEA/Eurydice, 2021a.  
European Commission, 2020b.

<sup>(4)</sup> Ibid.

<sup>(5)</sup> European Commission, Education/EACEA/Eurydice, 2019.

<sup>(6)</sup> Council of Europe, 2012.

<sup>(7)</sup> Information on policies, programmes and initiatives supporting young people's innovation skills in the context of non-formal learning is available in Section 6.7 of the Youth Wiki platform. Available at: <https://national-policies.eacea.ec.europa.eu/youthwiki>. [Accessed on 10.03.2021]

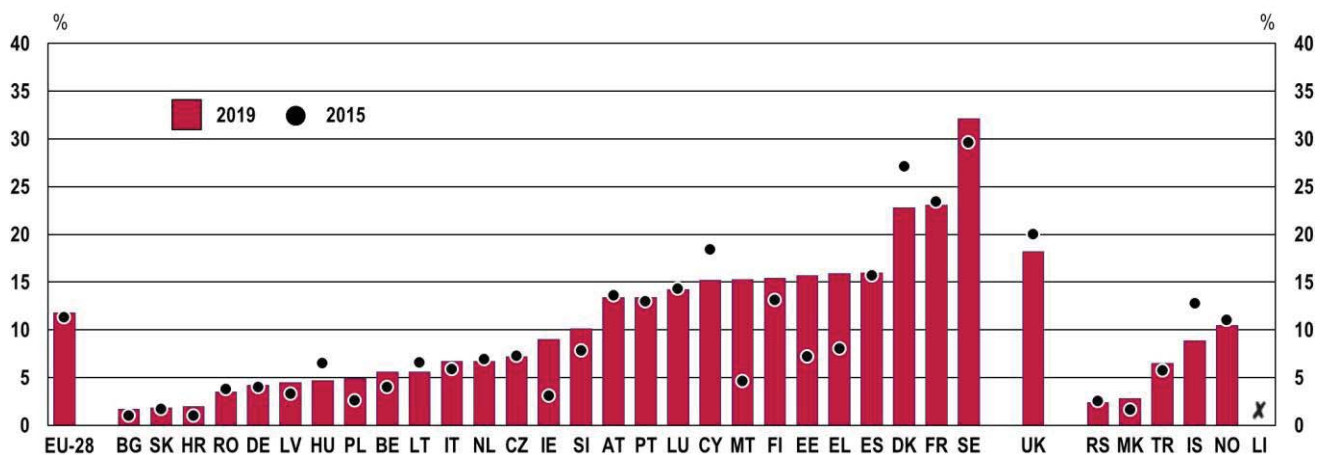
<sup>(8)</sup> Eurostat, 2021q.

Non-formal learning represents a key asset for releasing the potential of young people, particularly for developing specific skills, reconciling learning and work, and compensating for low levels of formal qualifications <sup>(9)</sup>. It is a crucial factor in social inclusion, especially for socioeconomically disadvantaged individuals <sup>(10)</sup>.

On average, in the European Union, 1 in 10 young people participate in non-formal learning (Figure 6.1). Across countries, considerable differences exist. Within the EU-28, the highest shares of participation in non-formal learning by young people are found in Sweden (32.1 %), France (23.8 %) and Denmark (22.8 %). Young people participate the least in non-formal learning in Bulgaria (1.7 %), Slovakia (1.8 %) and Croatia (2 %).

Differences in policies concerning labour markets can explain some of the variation across countries. For example, where training linked to re-skilling for job mobility is common, the level of participation in non-formal learning tends to be higher <sup>(11)</sup>.

Figure 6.1: Share of young people (15-29) participating in non-formal learning and training by country, 2015 and 2019



Source: Eurostat [trng\_lfs\_09]. Data extracted on 01.03.2021.

Notes: Participation in non-formal education in the last 4 weeks preceding the survey. . Non-formal education excludes guided on-the-job training. Countries are ordered by ascending level of participation in non-formal learning.

EU-27 average: 2015: 9.9 %; 2019: 10.8 %.

Figure 6.1 also shows that, while, on average across the EU-28, no particular variation in the share of participation in non-formal learning took place between 2015 and 2019, participation rates in non-formal learning changed considerably in several countries. Substantial increases in participation took place in Malta (10.7 percentage points), Estonia (8.5 p.p.), Greece (7.9 p.p.) and Ireland (5.9 p.p.). In contrast, Denmark and Cyprus registered decreases in participation (by 4.3 and 3.2 p.p. respectively).

Concerning gender balance, the average proportions of young women and young men participating in non-formal learning are similar (data not shown <sup>(12)</sup>).

<sup>(9)</sup> European Commission, 2020e.

<sup>(10)</sup> Ibid.

<sup>(11)</sup> Eurostat, 2009.

<sup>(12)</sup> Source: Eurostat [trng\_lfs\_09]. Data extracted on 01.03.2021

As in all dimensions of life, digitalisation has transformed the way that young Europeans participate in non-formal learning. For example, more and more learning activities are being conducted online, and this requires adaptation of the procedures used for the recognition and validation of the competences acquired; this has especially been the case since the outbreak of the COVID-19 pandemic in 2020 <sup>(13)</sup>. Chapter 9 illustrates the impact of digitalisation on youth work, one of the contexts where non-formal learning takes place.

Connected to these developments, proficiency in the use of digital technologies and media is indispensable to effectively take advantage of new learning opportunities. The following section offers insights into young people's levels of digital skills and the application of these skills to education and learning.

## 6.2. Digital skills

Digital skills are defined as 'a range of abilities to use digital devices, communication applications, and networks to access and manage information' <sup>(14)</sup>. Digital skills are essential for identifying and creating digital content, communicating through digital media and problem-solving in digital environments.

Having a limited grasp of these skills hampers the ability to benefit from the opportunities offered by new technologies. To this end, the EU digital education action plan supports the objective of the European skills agenda of ensuring that 70 % of 16- to 74-year-olds have at least basic digital skills by 2025 <sup>(15)</sup>.

As the main consumers of digital media (e.g. social media, communication platforms, online gaming) <sup>(16)</sup>, young people must be equipped with the necessary skills to effectively manage their use and avoid potential risks, such as grooming <sup>(17)</sup>, cyberbullying <sup>(18)</sup> and misinformation (information on how European countries address these challenges is available in the last section of Chapter 5).

To enhance the acquisition of digital skills, many European countries have reinforced the digital education space in their curricula and developed agencies that support teachers in the pedagogical use of digital technologies <sup>(19)</sup>.

### 6.2.1. Level of digital skills

A composite indicator is used by Eurostat to measure individuals' digital skills. This is based on selected activities in four specific areas of internet use: information, communication, problem-solving, software skills <sup>(20)</sup>. The indicator makes a distinction between low, basic and above-basic levels of skills based on the number of activities that respondents can perform.

<sup>(13)</sup> European Parliament Research Service, 2020.

<sup>(14)</sup> UNESCO, 2018.

<sup>(15)</sup> European Commission, 2020b.

<sup>(16)</sup> Correa, T., 2016.

<sup>(17)</sup> Grooming consists of actions deliberately undertaken with the aim of befriending and establishing an emotional connection with a child, in preparation for sexual activity with the child or exploitation (European Commission, 2012. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – European strategy for a better internet for children, COM(2012) 196 final, 2.5.2012, p. 9).

<sup>(18)</sup> Cyberbullying is an aggressive, intentional act or behaviour that is carried out by a group or an individual repeatedly and over time against a victim who cannot easily defend him- or herself. See [https://ec.europa.eu/justice/grants/results/daphne-toolkit/content/cyberbullying-adolescence-investigation-and-intervention-six-european-countries\\_en](https://ec.europa.eu/justice/grants/results/daphne-toolkit/content/cyberbullying-adolescence-investigation-and-intervention-six-european-countries_en). [Accessed on 12.03.2021]

<sup>(19)</sup> European Commission/EACEA/Eurydice, 2019.

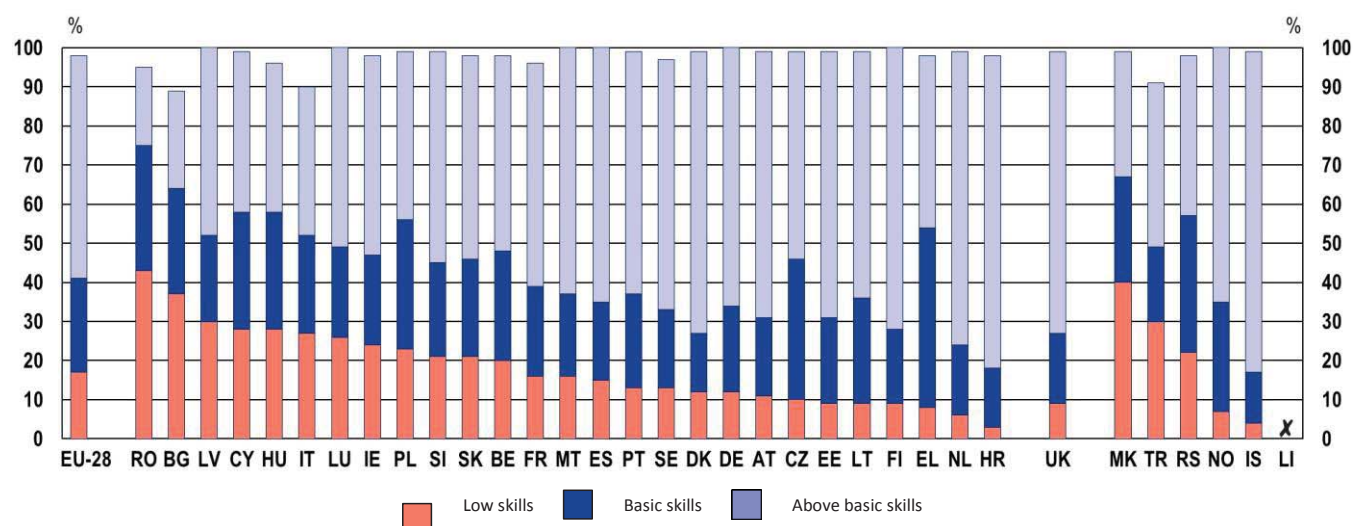
<sup>(20)</sup> The main components of digital competence are identified in the European digital competence framework. Information is available at: <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>. [Accessed on 12.03.2021]

Figure 6.2 indicates that, on average in the EU-28, 17 % of young people have a low level of digital skills, 27 % have basic skills and 57 % have above-basic skills.

The highest proportions of young people with a low level of digital skills are found in several southern and eastern Member States: Romania (43 %), Bulgaria (37 %), Cyprus (28 %), Hungary (28 %) and Italy (24 %). Outside the EU-28, North Macedonia and Turkey report the highest proportions (40 % and 30 %). In Romania, Bulgaria and Greece, more than 50 % of young people have a low or basic level of skills (75 %, 64 % and 54 %, respectively). This is also the case in North Macedonia (67 %) and Serbia (57 %).

Conversely, high proportions of young people possess above-basic skills in Croatia (80 %), the Netherlands (75 %), Denmark and Finland (both 72 %). Across all countries studied, Iceland (82 %) has the largest proportion of young people with an above-basic level of digital skills. The proportions of young people with basic skills are similar across countries, except for Greece and Czechia, where the proportions are 46 % and 36 %, respectively.

**Figure 6.2:** Share of young people (16-29) with low, basic and above-basic levels of digital skills by country, 2019



Source: Eurostat [isoc\_sk\_dskl\_i]. Data extracted on 01.03.2021.

Notes: Countries are ordered by descending level of low digital skills.

The percentage of those answering 'No use of internet in the last 3 months' is not included in the graph.

EU-27 average: low skills 18 %; basic skills 24 %; above basic skills 55 %.

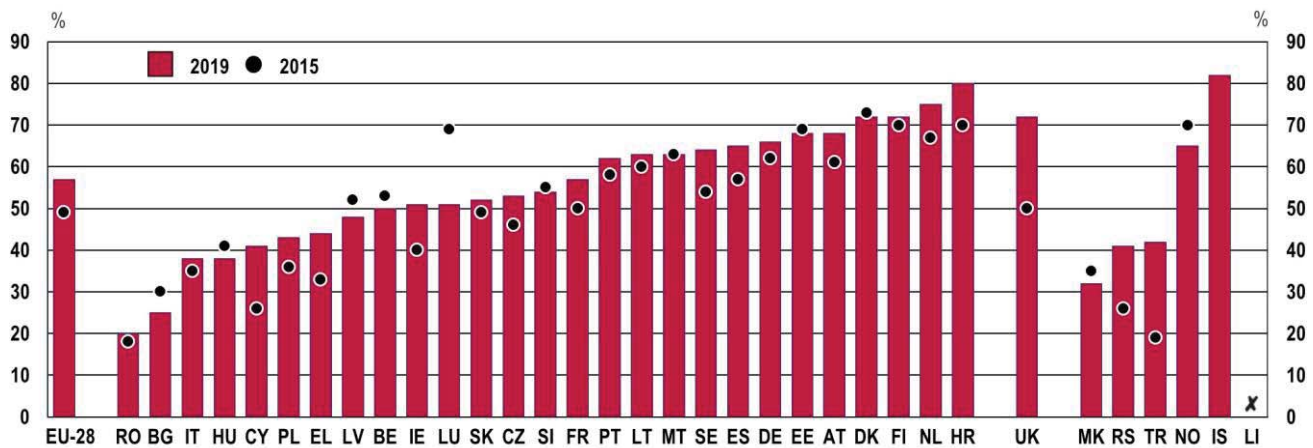
There are no particular differences between young men and young women in their levels of digital skills (data not shown <sup>(21)</sup>). Differences exist in a few countries only for above-basic skills. In Malta, Finland and Austria, the proportion of women holding above-basic digital skills is considerably higher than that of men (by between 10 and 15 p.p.).

The growing application of digital technologies in all spheres of society has driven the acquisition and improvement of relevant skills. Being at the forefront in the use of digital communication <sup>(22)</sup>, there has been an increasing trend in the proportion of young people strengthening their skills over time (Figure 6.3).

<sup>(21)</sup> Source: Eurostat [isoc\_sk\_dskl\_i]. Data extracted on 01.03.2021

<sup>(22)</sup> Correa, T., 2016.

Figure 6.3: Trend in the share of young people (16-29) with above-basic digital skills by country, 2015 and 2019



Source: Eurostat [isoc\_sk\_dskl\_i]. Data extracted on 15.02.2021.

Notes: Countries are ordered by ascending level of above basic digital skills in 2019. Breaks in time series in CZ, IT, LV and LU.

EU-27 average: 2015: 49 %; 2019: 55 %.

Indeed, on average in the EU-28, the share of young people with above-basic digital skills increased by 8 p.p. between 2015 and 2019. In some countries (Cyprus, Serbia, Turkey and the United Kingdom), the increase was larger. Conversely, the proportion of young people with above-basic skills decreased by 18 p.p. in Luxembourg.

The trend over time for young men and young women is very similar to the trend at EU-28 level (an increase of 9 p.p. for men and of 7 p.p. for women) (data not shown <sup>(23)</sup>).

### 6.2.2. Digital skills and digital divide

While the general picture of the level of and trend in young people's digital skills is positive, inequalities within the youth population exist. In this context, the 'digital divide' is defined as 'the gap between individuals with regard to both their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities' <sup>(24)</sup>.

The digital divide is at the root of digital exclusion <sup>(25)</sup>. Those with poor skills are prevented from taking advantage of the opportunities offered by digitalisation. Education, employment, cultural and social participation, and health services are making use of digital means to an increasing extent (information about online activities conducted by young people is provided in Chapter 5). A lack of ability to access and use these instruments contributes to pushing young people to the margins of society <sup>(26)</sup>.

Research describes offline and online social exclusion as mutually reinforcing <sup>(27)</sup>. Social and economic exclusion lead to fewer opportunities for accessing technologies and acquiring skills; in turn, a limited online presence hinders participation in all aspect of social and economic life.

<sup>(23)</sup> Source: Eurostat [isoc\_sk\_dskl\_i]. Data extracted on 15.02.2021

<sup>(24)</sup> OECD, 2002.

<sup>(25)</sup> Council of Europe and European Commission, 2020.

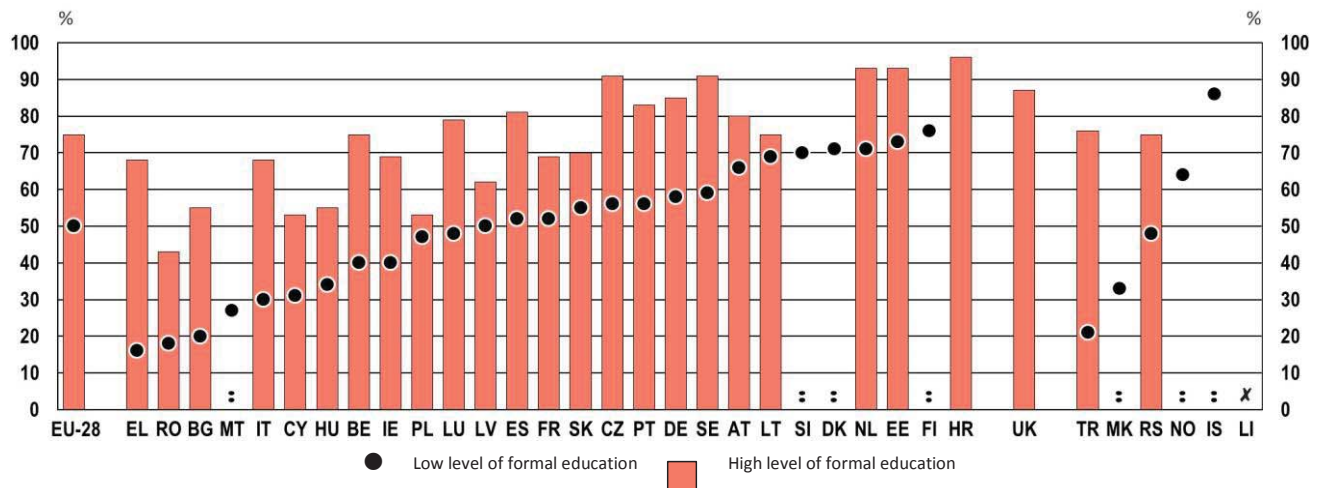
<sup>(26)</sup> Helsper, 2012.

<sup>(27)</sup> Ibid.

People's levels of digital skills and digital inclusion are strongly influenced by their sociodemographic characteristics. Young age, being self-employed, living in urban areas and having a high level of formal education are associated with better digital skills <sup>(28)</sup>.

Figure 6.4 illustrates the relation between level of educational attainment and possession of above-basic digital skills for young people. Considerable variation exists across countries.

Figure 6.4: Share of young people (16-24) with above-basic digital skills by country and level of educational attainment, 2019



Source: Eurostat [isoc\_sk\_dskl\_i]. Data extracted on 15.02.2021.

Notes: A low level of formal education corresponds to having completed at most lower secondary education (ISCED level 2). A high level of formal education corresponds to having completed tertiary education (ISCED levels 5–8).

Countries are ordered by ascending share of young people with a low level of formal education.

EU-27 average: low level of formal education 50 %; high level of formal education 73 %.

Bulgaria, Czechia, Denmark, Estonia, Greece, Italy, Hungary, Malta, Finland, United Kingdom, Iceland, North Macedonia, Serbia: low reliability.

In the EU-28, 50 % of young people with a low level of educational attainment have above-basic digital skills, whereas 75 % of those with a high level of education have above-basic digital skills, a gap of 25 p.p.

However, in some countries, the difference between the two groups is notably bigger, suggesting a stronger impact of education on young people's level of digital skills. In Greece, only 16 % of young people with a low level of education possess above-basic digital skills, compared with 68 % of those with a highest level of attainment, a gap of 52 p.p. The situation is similar in Turkey, with corresponding proportions of 21 % and 76 %, respectively, a gap of 55 p.p. In Belgium, Bulgaria, Czechia, Italy, Luxembourg and Sweden, the difference in the proportion of people with above-basic digital skills between the different educational attainment groups is between 31 and 38 p.p.

In contrast, in some countries, the level of educational attainment seems to have less of an influence on young people's level of digital skills. The smallest differences in above-basic digital skills between those with low and those with high levels of education are found in Lithuania and Poland (both 6 p.p.), followed by Latvia, Austria and Slovakia (12 p.p., 14 p.p. and 15 p.p., respectively).

Adequate digital skills are becoming indispensable in the education and learning environment. As mentioned in the introduction, they are essential for the fruitful participation of young people in the learning

<sup>(28)</sup> European Commission, 2021a.

opportunities provided by digital technologies. The following section addresses the topic of e-learning: first, the diffusion of e-learning in Europe is reported and, then, some of the challenges it can pose are highlighted.

### 6.3. E-learning

E-learning is ‘the learning supported by digital electronic tools and media’ <sup>(29)</sup>. It is based on digital technologies and internet applications, and makes use of instruments such as communication platforms, media sharing tools and virtual settings. E-learning usually takes the form of online courses and virtual classrooms where learners and instructors collaborate. As a form of distance or blended learning <sup>(30)</sup>, it takes place when learners and instructors either are not in the same place or are in the same place but not at the same time <sup>(31)</sup>.

E-learning has been increasingly used in the last two decades – often in conjunction with traditional face-to-face modalities – especially in higher education <sup>(32)</sup>.

As recognised by the EU Digital Education Action Plan 2020 <sup>(33)</sup>, the advantages of e-learning are numerous. It supports flexible and personalised learning modes and facilitates collaboration among learners, particularly in the creation and sharing of digital content. It transforms knowledge and the learning experience into a ubiquitous commodity that can be accessed from anywhere, at any time, by (potentially) anyone. Indeed, e-learning ensures the accessibility of learning whenever face-to-face environments are not available or are hard to reach (e.g. because of physical disability or geographical distance).

At the same time, e-learning can pose a different type of barrier to accessing education and learning, and aggravate pre-existing inequalities <sup>(34)</sup>: learners lacking the necessary equipment and digital skills can be excluded from participating in education and training <sup>(35)</sup>. This challenge becomes particularly serious in the context of the COVID-19 pandemic, when frequent lockdowns make e-learning the only way to access education and learning. This issue is debated in the second part of next section.

#### 6.3.1. E-learning among young Europeans

In this section, e-learning is operationalised as conducting any of the learning activities covered by the Eurostat ICT survey: taking an online course, using online learning material, and communicating with instructors or students using educational websites/portals <sup>(36)</sup>.

Figure 6.5 shows that, in the EU-28 in 2019, 45 % of young people (aged 16–29) engaged in e-learning activities. Across all countries studied, Iceland (89 %) had the highest percentage of young people engaging in e-learning, whereas, among EU Member States, Finland (72 %), Estonia (64 %), Sweden (60 %) and the Netherlands (57 %) had the highest percentages of young people engaging in e-learning. Conversely, across

<sup>(29)</sup> Kumar et al., 2018.

<sup>(30)</sup> Blended learning refers to a combination of face-to-face teaching, workshops or seminars and online distance learning techniques. See EQAVET, 2021.

<sup>(31)</sup> Ibid.

<sup>(32)</sup> Zheng et al., 2020; Al-Fraihat et al., 2020.

<sup>(33)</sup> European Commission, 2021a.

<sup>(34)</sup> For an overview of the determinants of inequalities in access to quality education and their trend over time: European Youth Forum, 2021.

<sup>(35)</sup> Ibid.

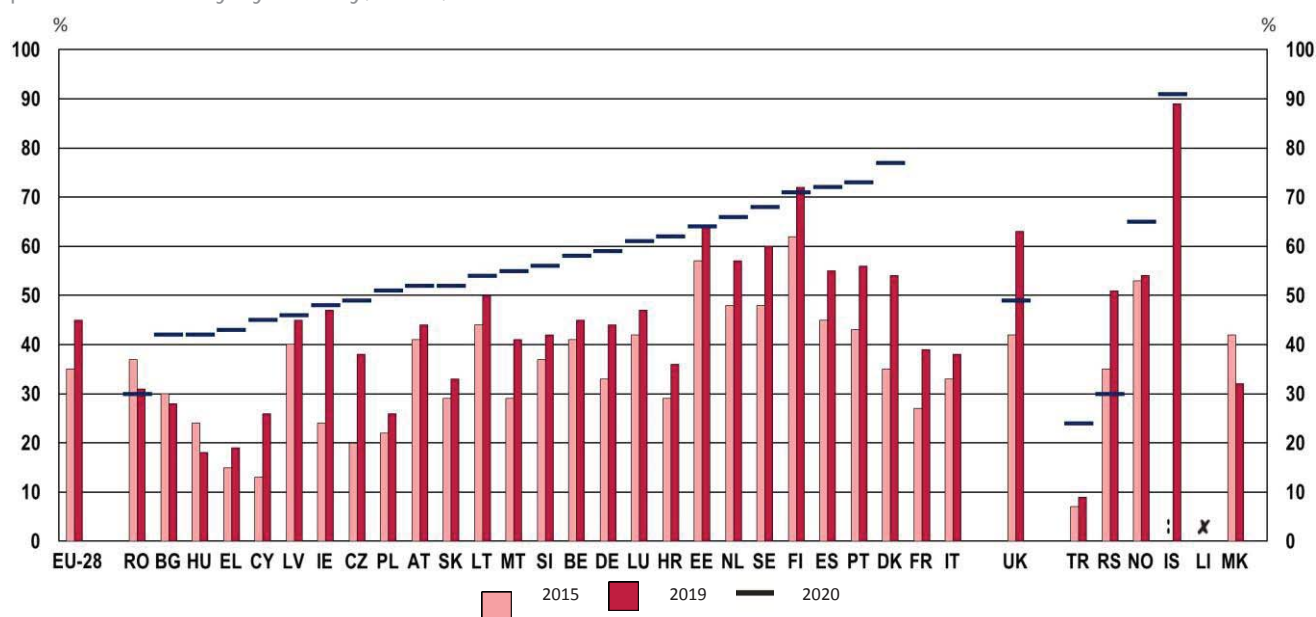
<sup>(36)</sup> Source: Eurostat [i\_iuolc, i\_iuolm, i\_iuocis]. Data extracted on 15.02.2021.

all countries, the lowest rates of participation in e-learning were found in Greece (19 %), Hungary (18 %) and Turkey (9 %).

Between 2015 and 2019, on average in the EU-28, the proportion of young people engaging in e-learning grew by 10 p.p. The greatest increases took place in Ireland (23 p.p.), Denmark (19 p.p.), Czechia (18 p.p.), Portugal (13 p.p.) and Cyprus (13 p.p.). Outside the EU, the United Kingdom and Serbia reported the largest increases in e-learning among young people (21 and 16 p.p. respectively). Conversely, Romania and Hungary (6 p.p. for both) as well as North Macedonia (10 p.p.) saw a decline in the use of e-learning.

Young men and young women engaged with e-learning to similar degrees (data not shown <sup>(37)</sup>).

**Figure 6.5:** Share of young people (16-29) using the internet for learning activities during the three months prior to the survey by country, 2015, 2019 and 2020



Source: Eurostat [isoc\_ci\_ac\_i]. Data extracted on 15.02.2021.

Notes: Countries are ordered by ascending share of young people engaged in e-learning activities in 2020.

EU-27 average: 2015: 34 %; 2019: 42 %; 2020: 52 %.

Czechia, Latvia, Luxembourg and Sweden: break in time series.

While the EU-28 average is not available for 2020, the variation in percentages at country level indicate an almost uniform increase across European countries (with the exception of the United Kingdom and Serbia that saw considerable decreases). The countries where there were no particular increases were those where the levels of e-learning were already among the highest in 2019, such as Finland, Estonia and Sweden. Furthermore, for the vast majority of countries, the increase in e-learning between 2019 and 2020 was bigger than that between 2015 and 2019 (for example, 21 p.p. in Poland, 20 p.p. in Greece and 19 p.p. in Croatia).

The data suggest that the COVID-19 pandemic, and the lockdowns imposed as a consequence, have accelerated the move from face-to-face to online learning.

<sup>(37)</sup> Source: Eurostat [isoc\_ci\_ac\_i]. Data extracted on 15.02.2021

### 6.3.2. Inequalities in the access to e-learning

The transfer of learning activities from physical environments to digital environments has a number of implications for young people's lives. Social relations with peers, family dynamics, and interactions with teachers and instructors are impacted <sup>(38)</sup>. Emotional and psychological well-being can also be challenged, as discussed in Chapter 7.

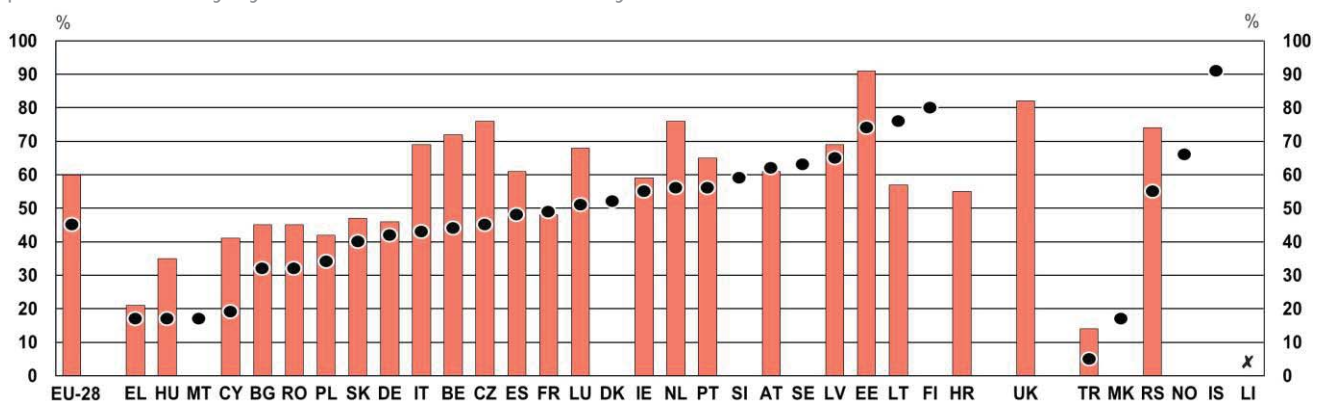
In addition, e-learning can have consequences for overall participation in learning. In the absence of personal interactions, students can experience disengagement from activities, the rate of absenteeism can increase and educational achievement can be negatively affected <sup>(39)</sup>. This is particularly true for youth who are vulnerable to social exclusion <sup>(40)</sup>.

Beside structural conditions (e.g. the availability of a broadband internet connection <sup>(41)</sup>), the socioeconomic characteristics of young people and their families exert a crucial influence on participation in e-learning. Education level and the affordability of the necessary equipment and internet connection are particularly relevant <sup>(42)</sup>.

A relation between the level of formal education and the degree of involvement in e-learning is suggested by the data illustrated in Figure 6.6. This can be at least partially explained by the impact of education level on the level of digital skills, discussed in Section 6.2.1.

In the EU-28, in 2019, 45 % of young people (aged 16–24) with a low level of education and 60 % with a high level of education participate in e-learning activities. At country level, the widest gaps are found in Belgium (28 p.p.), Italy (26 p.p.), Cyprus (22 p.p.), the Netherlands (20 p.p.) and Czechia (18 p.p.). In these countries, the relation between different levels of education and participation in e-learning seems stronger than in the EU-28 as a whole. In a few countries (France, Austria, Greece, Germany, Ireland and Latvia), educational level has no or little impact on the level of e-learning.

Figure 6.6: Share of young people (16-24) using the internet for learning activities during the three months prior to the survey by level of education and country, 2019



<sup>(38)</sup> Carretero et al., 2021.

<sup>(39)</sup> Wigfield et al., 2015.

<sup>(40)</sup> Drane, et al., 2020.

<sup>(41)</sup> The European Commission 2020 DESI report indicates that broadband coverage of rural areas remains a challenge as 10 % of households are not covered by any fixed network and 41 % are not covered by any next generation access technology (European Commission, 2021a).

<sup>(42)</sup> Carretero et al., 2021.



Source: Eurostat [isoc\_ci\_ac\_i]. Data extracted on 15.02.2021.

Notes: A low level of formal education corresponds to having completed at most lower secondary education (ISCED level 2). A high level of formal education corresponds to having completed tertiary education (ISCED levels 5–8).

Countries are ordered by ascending proportion of young people with low levels of education participating in e-learning.

EU-27 average: low level of formal education 45 %; high level of formal education 55 %.

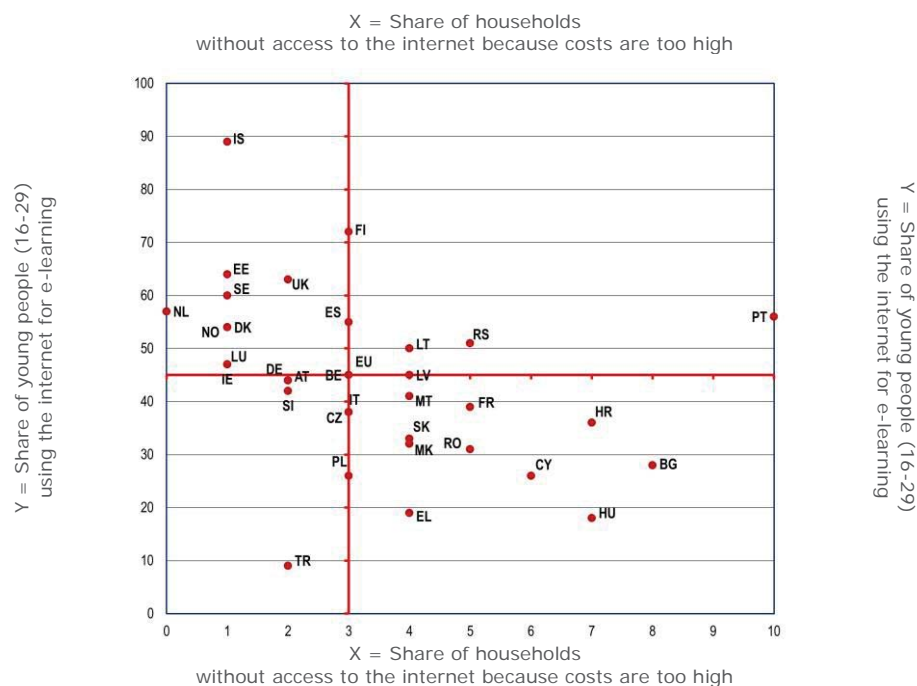
Czechia, Latvia, Luxembourg and Sweden: break in time series.

The level of educational attainment does not have a different impact on young men and young women (data not shown) <sup>(43)</sup>.

In addition to education attainment, research indicates that participation in e-learning is affected by the possibility to afford the related costs <sup>(44)</sup>. E-learning requires appropriate equipment (computer, tablets or smartphones) and broadband internet connection. Their affordability is a crucial factor in allowing young people to access online education. Across Europe, 32 % of private households without internet connection indicate excessive costs as the main reason <sup>(45)</sup>. For young people living in such circumstances, economic and education disadvantages add up and increase the risk of social exclusion.

Figure 6.7 illustrates, for each country, the level of young people's participation in e-learning and the share of households which cannot afford internet connection. The representation aims at observing the distribution of countries along the two dimensions, with no intent at establishing a causal relation.

Figure 6.7: Country distribution based on the share of young people (16-29) using the internet for e-learning and the share of households without access to the internet because costs are too high, 2019



Source: Eurostat [isoc\_ci\_ac\_i, isoc\_pibi\_rni]. Data extracted on 20.02.2021.

The majority of countries fall into two main groups. The first group is composed of countries where the proportion of households that cannot afford internet access is higher than the EU-28 average, and the

<sup>(43)</sup> Source: Eurostat [isoc\_ci\_ac\_i]. Data extracted on 15.02.2021

<sup>(44)</sup> Carretero et al., 2021.

<sup>(45)</sup> Source: Eurostat [isoc\_pibi\_rni]. Data extracted on 15.02.2021

proportion of young people participating in e-learning is below the average. This group includes several southern and eastern countries (e.g. Cyprus, Greece, Hungary, North Macedonia, Romania and Slovakia). The second group is represented by countries (mainly in Scandinavia and the northern regions of Europe) where the proportion of households that cannot afford internet access is lower than the EU-28 average, and the proportion of young people participating in e-learning is above the average.

Some countries do not belong to either of the groups. For example, in Belgium, Czechia and Spain, the proportions of young people engaging in e-learning and households finding that internet costs are unaffordable are close to the EU-28 averages.

Although the data presented do not allow a cause-effect relation to be identified, results from other research corroborate the relation between the unaffordability of digital instruments and exclusion from e-learning <sup>(46)</sup>. As digital equipment and an internet connection become indispensable for learning, the associated costs of education cannot be sustained equally across all of society.

## Conclusions

The growing application of digital technologies in all spheres of society has driven the acquisition and improvement of relevant skills. As a result, the share of young people with above-basic digital skills increased considerably between 2015 and 2019. At the same time, digitalisation may penalise those who do not have adequate digital skills and resources. In this context, the chapter has illustrated the relation between level of formal education and possession of above-basic digital skills for young people.

Adequate digital skills have become indispensable also in the education and learning environment, where e-learning has been increasingly used. Between 2015 and 2020, the proportion of young people engaging in e-learning grew substantially. Against this background, e-learning can represent a barrier to accessing education and learning, and aggravate pre-existing inequalities. A relation between the level of formal education and the degree of involvement in e-learning is detected by the data discussed.

In addition, participation in e-learning is affected by the possibility to afford the related costs. In several European countries, above-average rates of households that cannot afford internet access are associated with below-average rates of young people participating in e-learning.

The huge increase in e-learning during the COVID-19 pandemic risks exacerbating pre-existing inequalities in access to education and learning based on economic circumstances. In this respect, economic and educational disadvantages combine to increase the social exclusion of the frailest segments of the youth population.

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<sup>(46)</sup> Carretero et al., 2021.