F Education and digital skills

F.1 ICT in schools

Data on **numbers of computers at schools** per 100 students of respective school grades, as well as on school equipment with other ICTs in Czechia come from data sources of the **Ministry of Education**, **Youth and Sports.** The Ministry collects these data at all nursery, primary, secondary, and higher professional schools within the annual questionnaire called Report of Schools Headquarters (R 13-01). The data are as at **30 September of the reference year**.

More information on these fields can be found at:
https://www.czso.cz/csu/czso/information_technologies_in_schools

F.2 ICT use by pupils and students

Detailed data on the 15-year-old students in Czechia accessing selected ICTs at home and at school were processed based on the results of the **Programme for International Student Assessment (PISA 2018)**, survey conducted by OECD.

The survey is the most important project of the OECD in education measurement, which has been currently carried out in the world. Detailed information on the PISA 2018 can be found at: http://www.oecd.org/pisa/ .

The independent annual statistical survey called **Sample Survey on the ICT Use in Households and by Individuals** (for details see Chapter C) has been a valuable source of information on how **students aged 16+ years** use the internet.

The **Sample Survey on the ICT Use in Households and by Individuals** is also a source of data on learning activities over the internet. Within the survey, respondents were asked if they passed an online course, or communicated with instructors or students using educational websites/portals, in the last 3 months.

The reference period for **purchases over the internet** by students is the last 3 months prior to the survey interview, same as for the other online activities in this chapter. As a result the data for online purchase in this chapter differ from data in chapter C, where the reference period is 12 months prior the survey.

The indicators on **computer (digital) skills** of people in Czechia are also based on results from the above-mentioned **Sample Survey on the ICT Use in Households and by Individuals**. Within the survey, respondents were asked if they used selected digital skills **in the last 12 months**

International data and comparisons of certain indicators are taken from the Eurostat database for digital economy and society, data of which are updated every year in December. Detailed information can be found at: https://ec.europa.eu/eurostat/web/digital-economy-and-society/overview.

Definitions

- **Communication with instructors or students** means that students/pupils/participants of the training event can share their experiences and knowledge or consult with the instructor/teacher or other students through special educational websites or portals (e.g. Moodle).

- **Programming** shall include the use of programming languages as Java, C, Python, Pascal, for instance, writing of scripts in PHP or JavaScript, for instance, writing of source codes, formatting and generating of tools, binary tools for compatibility analyses, tools for code checking, generators of documentation, generators of interfaces, etc. It also includes using developer functions in spreadsheets and writing codes in analytical programs.

- **School Intranet** uses most of the same technology as the internet but it is restricted only to a limited group of users within an organization,

typically to students and staff of given school. The access by outsiders is excluded.

- **School Wireless Network** (school WiFi network) enables students and school staff using portable devices in a school to connect to the school computer network. An example is international roaming service Eduroam.

- The **participation in an online course** shall include a participation in course attended over the internet. Students communicate with lectors over the internet, study materials are also sent online. Online courses may include language courses, personal development courses, computer courses and more. It also includes courses made through the applications such as Duolingo.

- **Uploading self-created content** shall include posting own contents like text, photos, music, videos, software, etc. on the internet.

More information on these fields can be found at:
https://www.czso.cz/csu/czso/vyuzivani_informacnich_technologii_studenty
(in the Czech language only)

Tab. F1 Computers in schools available to pupils/students in Czechia; 2019

Number of devices per 100 pupils/students

	Total	Age of the device ≤ 2 years	by type of the computer	
			desktop	portable
Basic schools - first stage	**22,1**	7,0	14,2	7,9
Basic schools - second stage	**30,5**	9,8	20,2	10,2
Secondary schools	**26,6**	7,4	21,0	5,5

Tab. F2 Schools in Czechia with Wireless Network and School Intranet

%

	School Wireless Network		School Intranet	
	2015	2019	2015	2019
Basic schools - first stage	78,7	89,4	14,3	27,8
Basic schools - second stage	81,6	90,5	20,3	37,9
Secondary schools	87,0	93,2	46,1	65,0

as a percentage of all schools of a given stage

Figure F1 Computers in schools available to pupils/students (per 100 pupils/students)
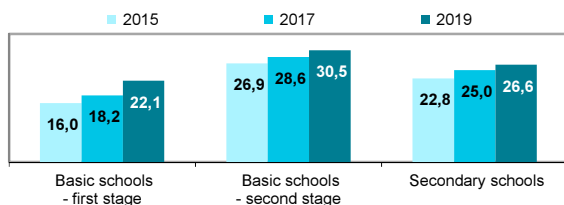

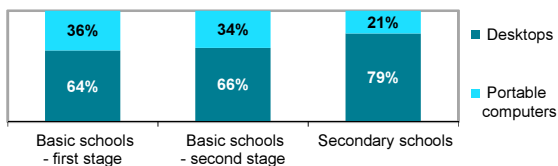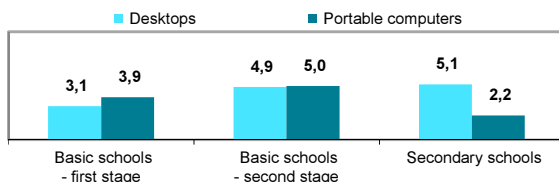**Figure F2 Computers in schools by type of the device; 2019**

Figure F3 Desktops and portable computers up to age of 2 years available to pupils/students; 2019 (number of devices per 100 pupils/students)

Source: Ministry of Education, Youth and Sports

Tab. F3 15-year-old students in Czechia with access to different ICT devices at home and at school; 2018

%

	at home		at school	
	2015	2018	2015	2018
Internet	98,7	98,9	90,4	94,8
Mobile phone, total	93,1	99,1	.	.
of which Smartphone	.	98,0	.	.
Portable computer (laptop)	87,5	88,8	28,6	27,9
Desktop computer	82,9	76,4	79,5	81,5
Tablet	68,4	71,7	22,7	22,9
E-book reader	26,2	26,4	12,9	14,3
Printer	78,1	81,6	.	.

as a percentage of all 15 years old students

Figure F4 Average daily time spent using the internet by 15-year-old students; 2018
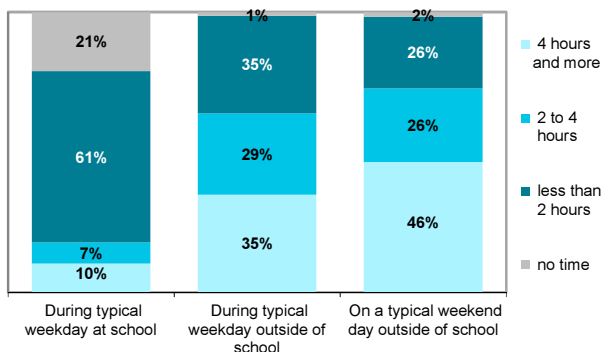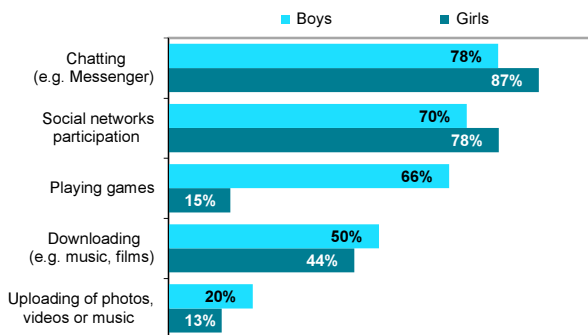

Figure F5 15-year-old students using the internet for entertainment*; 2018

* *Every day or almost every day*

Source: OECD, survey PISA

Figure F6 15-year-old students in EU countries with the internet access at school; 2018

■ Have access and use it   ■ Have access but do not use it
■ Do not have access

Country	Have access and use it	Have access but do not use it	Do not have access
United Kingdom	86%	11%	3%
Finland	85%	9%	5%
Austria	84%	11%	5%
Czechia	80%	11%	9%
France	78%	14%	7%
Hungary	76%	15%	9%
Slovenia	76%	16%	9%
Bulgaria	75%	14%	11%
Luxembourg	75%	17%	7%
Slovakia	75%	14%	10%
Sweden	73%	16%	11%
EU28	73%	17%	10%
Belgium	73%	16%	12%
Lithuania	72%	23%	5%
Ireland	72%	23%	6%
Greece	72%	20%	8%
Croatia	71%	18%	11%
Spain	71%	17%	12%
Malta	68%	21%	10%
Estonia	67%	26%	7%
Italy	64%	21%	15%
Latvia	58%	35%	7%
Poland	55%	27%	18%
Denmark	53%	37%	9%

Source: OECD, survey PISA

Tab. F4 Students in Czechia aged 16+ using the internet; 2019

%

	Total	Men	Women
Using the internet, total	**98,9**	**99,5**	**98,1**
Using the interent several times a day	92,4	92,1	92,8
Using the internet on a mobile phone	**98,1**	**99,0**	**96,9**
Mobile data usage	84,5	82,8	86,5
Using the internet for selected activities*			
Participating in social networks	97,9	97,9	97,9
Listening to music	91,9	94,1	89,4
Reading online news	88,9	90,7	86,7
Uploading of photos, videos or music	87,8	85,2	90,9
Watching videos, movies or TV programmes	85,3	87,1	83,3
Playing games *(data for 2018)*	70,7	84,9	57,4
Looking for travel-related information	68,8	66,9	71,1
Internet banking	58,9	54,9	63,6
Purchasing over the internet	59,2	58,2	60,3
Communication with an instructor or other students via specialised learning portals	45,9	45,4	46,4
Attending an online course	15,7	16,5	14,8

as a percentage of all students (men/women) aged 16+ in a given group

* Include using the internet for selected activities at least once in the last 3 mont

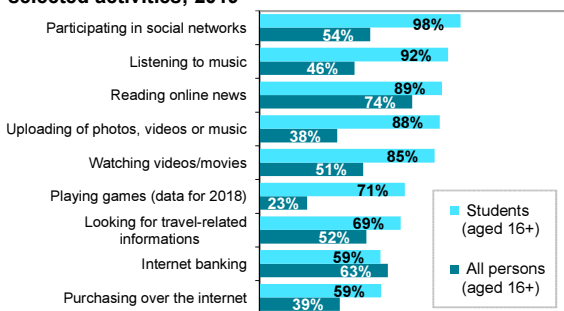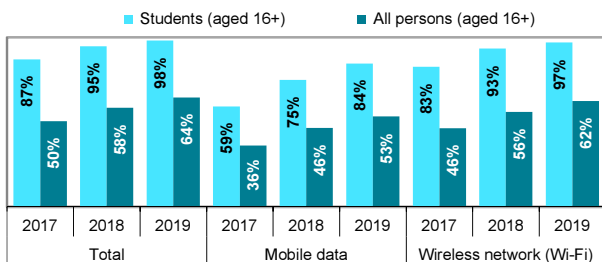## Figure F7 Students and persons aged 16+ using the internet for selected activities; 2019

Figure F8 Students and persons aged 16+ using the internet on mobile phone by type of network

Source: Czech Statistical Office, ICT use survey in households

Figure F9 Students in EU countries aged 16+, using the internet on a mobile phone; 2019

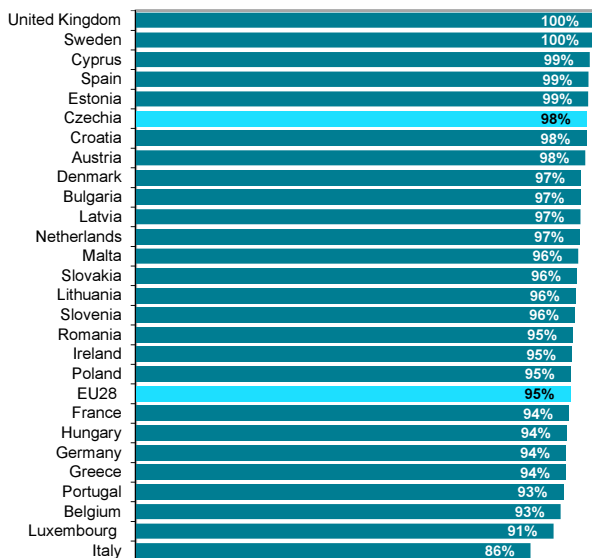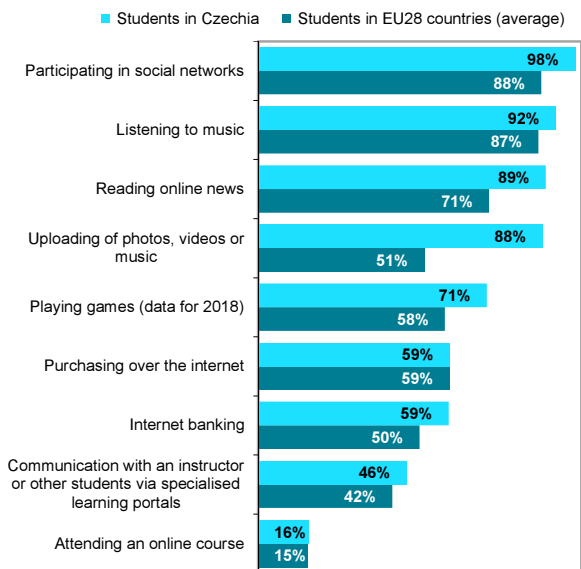| Country	Percentage
United Kingdom	100%
Sweden	100%
Cyprus	99%
Spain	99%
Estonia	99%
Czechia	98%
Croatia	98%
Austria	98%
Denmark	97%
Bulgaria	97%
Latvia	97%
Netherlands	97%
Malta	96%
Slovakia	96%
Lithuania	96%
Slovenia	96%
Romania	95%
Ireland	95%
Poland	95%
EU28	95%
France	94%
Hungary	94%
Germany	94%
Greece	94%
Portugal	93%
Belgium	93%
Luxembourg	91%
Italy	86%

Figure F10 Students in Czechia and other EU countries aged 16+, using the internet for selected activities; 2019

■ Students in Czechia   ■ Students in EU28 countries (average)

Activity	Students in Czechia	Students in EU28 countries (average)
Participating in social networks	98%	88%
Listening to music	92%	87%
Reading online news	89%	71%
Uploading of photos, videos or music	88%	51%
Playing games (data for 2018)	71%	58%
Purchasing over the internet	59%	59%
Internet banking	59%	50%
Communication with an instructor or other students via specialised learning portals	46%	42%
Attending an online course	16%	15%

Source: Eurostat

Tab. F5 Persons in Czechia who declared that thay used office software in the last 12 months; 2019

%

	Word processing software (e.g. *MS Word*)	Spreadsheet software (e.g. *MS Excel*)	Presentation software
Total (aged 16+ years)	**53,7**	**44,9**	**18,0**
Total (aged 16–74)	58,3	48,9	19,8
Sex (aged 16+ years)			
Men	54,6	47,0	20,7
Women	52,8	42,9	15,5
Age group (years)			
16–34	78,4	69,0	38,4
35–54	64,0	54,4	18,0
55+	27,3	19,7	4,5
Education attainment (aged 25–64)			
Primary	10,2	6,4	1,2
Secondary without A-level exam.	31,0	19,9	3,1
Secondary with A-level exam.	68,7	57,5	16,3
Tertiary	87,7	81,1	40,9

as a percentage of all persons in a given socio-demographic group

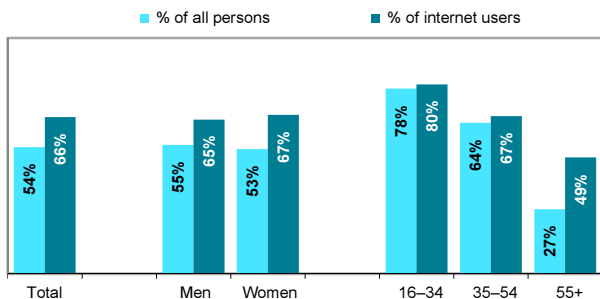**Figure F11 Usage of the word processing software by sex and age; 2019**
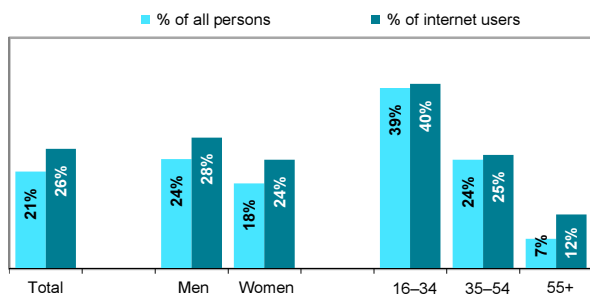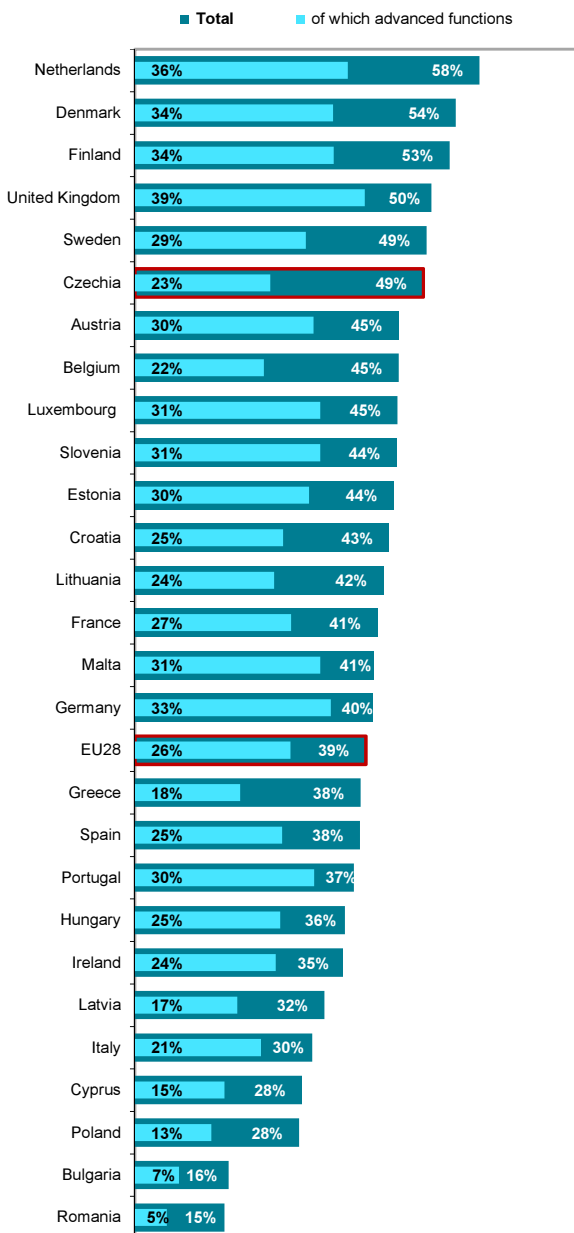

■ % of all persons   ■ % of internet users

Figure F12 Usage of advanced function of spreadsheet software by sex and age; 2019

■ % of all persons   ■ % of internet users

Source: Czech Statistical Office, ICT use survey in households

Figure F13 Persons in EU countries aged 16–74 years using spreadsheet software; 2019

■ **Total**   ■ of which advanced functions

Country	Advanced	Total
Netherlands	36%	58%
Denmark	34%	54%
Finland	34%	53%
United Kingdom	39%	50%
Sweden	29%	49%
Czechia	23%	49%
Austria	30%	45%
Belgium	22%	45%
Luxembourg	31%	45%
Slovenia	31%	44%
Estonia	30%	44%
Croatia	25%	43%
Lithuania	24%	42%
France	27%	41%
Malta	31%	41%
Germany	33%	40%
EU28	26%	39%
Greece	18%	38%
Spain	25%	38%
Portugal	30%	37%
Hungary	25%	36%
Ireland	24%	35%
Latvia	17%	32%
Italy	21%	30%
Cyprus	15%	28%
Poland	13%	28%
Bulgaria	7%	16%
Romania	5%	15%

Source: Eurostat

Tab. F6 Persons in Czechia with selected computer skills; 2019

%

	Copying files	Editing photos	Programm-ing
Total (aged 16+ years)	**51,2**	**31,9**	**5,7**
Total (aged 16–74)	55,9	34,8	6,2
Sex (aged 16+ years)			
Men	56,0	33,9	8,8
Women	46,8	29,9	2,7
Age group (years)			
16–34	86,1	69,3	13,6
35–54	65,7	40,5	7,2
55+	22,6	10,4	1,5
Education attainment (aged 25–64)			
Primary	11,5	11,2	0,5
Secondary without A-level exam.	31,3	16,6	1,1
Secondary with A-level exam.	63,3	35,5	5,7
Tertiary	84,3	53,7	13,9

as a percentage of all persons in a given socio-demographic group

Source: Czech Statistical Office, ICT use survey in households

Figure F14 Persons in EU countries aged 16–74 years, who programming; 2019

Source: Eurostat