Vocational education statistics

Statistics Explained

Data extracted in July 2023. Planned article update: September 2024.

" In 2021, 2.0 % of pupils in lower secondary education across the EU followed vocational programmes, with this share reaching 48.7 % for upper secondary education and 94.7 % for post-secondary non-tertiary education."

"In 2021, 43.9 % of all graduates from vocational programmes in upper secondary education in the EU were female, while the share was higher (61.2 %) among graduates from vocational programmes in post-secondary non-tertiary education. "

This article presents statistics on vocational education in the European Union (EU) and forms part of an online publication on education titled Education and training in the EU - facts and figures . It analyses vocational education of pupils/students in schools or other educational institutions. This education may be undertaken as part of secondary, post-secondary non-tertiary education or short-cycle tertiary education.

Vocational training within secondary, post-secondary non-tertiary and short-cycle tertiary education

This article looks at vocational education within secondary, post-secondary non-tertiary and short-cycle tertiary education, typically within educational institutions: generally, this concerns initial education before a person enters the labour market for the first time, although it may also include adult education. These education levels are covered by the international standard classification of education (ISCED) levels 2–5. Vocational educational programmes are distinguished from general educational programmes, as the former are specifically designed for pupils to acquire the knowledge, skills and competencies for a particular occupation or trade.

Enrolled pupils

Number and share of pupils in vocational education programmes, 2021

		Number					Share (%)					
	Lower	Up	Upper secondary			Short- cycle	Lower	Upper secondary			Post- secondary	Short- cycle
	secondary	Total	Male	Female	non- tertiary	tertiary	secondary	Total	Male	Female	non- tertiary	tertiary
EU (¹)	375 545	8 804 267	5 143 272	3 660 994	1 342 304	1 394 532	2.0	48.7	55.5	41.6	94.7	98.1
Belgium (²)	70 474	386 559	195 928	190 631	48 917	25 088	17.1	53.8	57.0	50.8	91.8	100.0
Bulgaria	3 870	144 416	85 991	58 425	616	_	1.9	52.0	58.8	44.4	100.0	_
Czechia	2 450	285 548	155 742	129 806	4 957	1 048	0.5	69.1	74.1	63.9	27.9	100.0
Denmark	_	115 729	68 814	46 915	_	35 666	-	39.1	45.3	32.6	-	100.0
Germany	155 938	1 124 107	730 892	393 215	682 950	10 989	3.5	47.2	55.6	36.8	94.6	100.0
Estonia	1 470	19 353	11 040	8 313	4 217	_	3.3	40.3	47.2	33.8	100.0	_
Ireland	10 811	55 079	20 937	34 142	38 417	:	4.9	23.9	19.3	28.1	100.0	:
Greece	5 363	118 094	74 138	43 956	66 643	_	1.6	33.8	40.4	26.6	100.0	_
Spain	32 338	728 813	382 798	346 015	42 229	524 257	1.9	38.7	41.0	36.5	100.0	100.0
France	_	1 096 475	648 285	448 190	8 263	565 733	-	40.1	46.3	33.6	43.4	100.0
Croatia	18 254	104 338	58 252	46 086	-	12	10.3	70.0	78.2	61.8	-	100.0
Italy	_	1 503 160	955 529	547 631	2 576	23 134	-1	51.9	63.6	39.2	100.0	100.0
Cyprus	_	4 927	3 685	1 242	_	3 792	_	17.6	25.8	9.0	_	100.0
Latvia	137	24 120	14 188	9 932	3 477	14 130	0.2	40.1	46.4	33.5	100.0	100.0
Lithuania	1 982	15 393	10 171	5 222	10 091	_	1.2	25.6	32.0	18.4	100.0	_
Luxembourg	_	15 965	8 347	7 618	549	880		60.8	63.4	58.2	100.0	100.0
Hungary	_	195 415	114 020	81 395	57 479	11 834	_	49.7	56.5	42.5	100.0	100.0
Malta	172	4 781	2 653	2 128	- 1	1 198	1.3	27.0	29.6	24.3	-	50.1
Netherlands	51 607	576 057	290 619	285 438	_	33 785	6.8	68.7	70.0	67.4	_	100.0
Austria	_	244 290	136 395	107 894	12 255	74 059	_	68.9	73.6	63.8	100.0	100.0
Poland	i –	865 300	537 292	328 008	204 494	508	i – i	53.8	64.6	42.1	100.0	100.0
Portugal	14 124	152 768	87 169	65 599	4 888	18 127	4.1	38.8	44.1	33.4	100.0	100.0
Romania		415 776	233 765	182 011	91 757	_	-	56.9	63.0	50.6	100.0	_
Slovenia	_	61 228	34 672	26 556	- 1	10 564	-1	69.8	77.2	62.0	_	100.0
Slovakia	6 555	122 434	66 791	55 643	12 192	2 387	2.4	67.6	73.5	61.7	100.0	100.0
Finland	_	219 367	108 511	110 856	23 895		-1	67.3	70.9	64.1	100.0	-
Sweden		204 776	106 648	98 127	21 442	37 341	- 1	35.4	38.6	32.4	71.0	91.1
Iceland	_	7 160	4 611	2 549	1 472	337	_	31.4	38.8	23.5	98.5	43.9
Liechtenstein	_	1 099	684	415	_		i – i	66.4	71.4	59.6	_	
Norway	_	131 969	81 698	50 271	11 343	10 736	-1	51.5	59.8	42.0	100.0	100.0
Switzerland	_	215 702	128 042	87 660	12 650	3 337	_	61.9	69.4	53.5	79.7	100.0
Bosnia and					500							
Herzegovina	_	86 537	46 617	39 920	-	-	-	78.4	84.7	72.1	-	-
Montenegro	_	18 674	10 242	8 432	_	_	_	69.3	73.8	64.5	_	_
North Macedonia	_	44 863	24 260	20 603	396	_	_	62.1	65.7	58.4	100.0	_
Serbia	_	183 598	99 388	84 210	1 197	_	_	73.2	78.4	67.8	100.0	_
Türkiye	_	2 398 519	1 400 998	997 521		3 114 623	_	38.0	42.2	33.2	-	100.0

^(:) not available.

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Table 1: Number and share of pupils in vocational education programmes, 2021 Source: Eurostat (educ_uoe_enrs01), (educ_uoe_enrs04), (educ_uoe_enrs07) and (educ_uoe_enrt01)

Within lower secondary education (ISCED level 2), vocational programmes were relatively rare across the EU: in 2021, 2.0 % of all pupils at this level were enrolled in such programmes. The majority (56.1 %) of enrolments were for boys.

⁽⁻⁾ not applicable.

⁽¹⁾ Short-cycle tertiary education: based on available data.

⁽²⁾ Short-cycle tertiary education: enrolments exclude the French Community.

Source: Eurostat (online data codes: educ_uoe_enrs01, educ_uoe_enrs04, educ_uoe_enrs07 and educ_uoe_enrt01)

Vocational programmes were more common within upper secondary education (ISCED level 3), accounting for 48.7 % of all pupils at this level in 2021. As for lower secondary education, a majority (58.4 %) of enrolments in vocational programmes within upper secondary education were for boys. More than half (55.5 %) of all boys enrolled in upper secondary education were following vocational programmes, compared with just over two fifths (41.6 %) of girls in upper secondary education.

Vocational programmes were much more common in post-secondary non-tertiary education (ISCED level 4), accounting for 94.7 % of all pupils at this level in 2021. In 16 of the 21 EU Member States with post-secondary non-tertiary education, all of the pupils at this level were enrolled in vocational programmes. A majority (58.0 %) of enrolments were female.

Vocational programmes were most common in short-cycle tertiary education (ISCED level 5), accounting for 98.1 % of all students at this level in 2021. In 18 of the 20 EU Member States with short-cycle tertiary education, all of the pupils at this level were enrolled in vocational programmes.

Share of pupils in school-based only and combined vocational education programmes, by education level, 2021

	Upper se		Post-secondar	y non-tertiary	Short-cycle tertiary		
	Only school	Combined school and work	Only school	Combined school and work	Only school	Combined school and work	
EU (¹)	75.9	24.1	61.3	38.7	92.2	7.8	
Belgium (²)	93.5	6.5	100.0	0.0	100.0	0.0	
Bulgaria	94.8	5.2	100.0	0.0	_	_	
Czechia	100.0	0.0	100.0	0.0	100.0	0.0	
Denmark	0.0	100.0	_	-	100.0	0.0	
Germany	11.3	88.7	46.7	53.3	100.0	0.0	
Estonia	92.0	8.0	94.0	6.0	_	_	
Ireland	0.0	100.0	2.4	97.6	:	:	
Greece	100.0	0.0	100.0	0.0	_	_	
Spain	97.6	2.4	96.3	3.7	95.6	4.4	
France	72.1	27.9	100.0	0.0	100.0	0.0	
Croatia	100.0	0.0	_	-	100.0	0.0	
Italy	100.0	0.0	100.0	0.0	0.0	100.0	
Cyprus	100.0	0.0	-	- 1	100.0	0.0	
Latvia	0.0	100.0	0.0	100.0	0.0	100.0	
Lithuania	100.0	0.0	100.0	0.0	_	_	
Luxembourg	78.4	21.6	0.0	100.0	100.0	0.0	
Hungary	0.0	100.0	0.0	100.0	0.0	100.0	
Malta	59.9	40.1	_	-	52.2	47.8	
Netherlands	:	: 1	_	-	100.0	0.0	
Austria	50.5	49.5	64.1	35.9	100.0	0.0	
Poland	86.2	13.8	100.0	0.0	100.0	0.0	
Portugal	100.0	0.0	100.0	0.0	100.0	0.0	
Romania	89.2	10.8	88.3	11.7	-	-	
Slovenia	100.0	0.0	_	-	100.0	0.0	
Slovakia	72.9	27.1	59.2	40.8	100.0	0.0	
Finland	83.5	16.5	41.5	58.5	_	_	
Sweden	91.9	8.1	3.3	96.7	2.5	97.5	
Iceland	34.2	65.8	92.5	7.5	100.0	0.0	
Liechtenstein	0.0	100.0	_	_	_	_	
Norway	27.9	72.1	100.0	0.0	100.0	0.0	
Switzerland	9.4	90.6	100.0	0.0	100.0	0.0	
Bosnia and Herzegovina	100.0	0.0	:	:	_	_	
Montenegro	100.0	0.0		-	_	_	
North Macedonia	100.0	0.0	100.0	0.0	_	_	
Albania	:	:	_	_	:	:	
Serbia	100.0	0.0	100.0	0.0		_	
Türkiye			_	_	100.0	0.0	

^(:) not available

eurostat

Table 2: Share of pupils in school-based only and combined vocational education programmes, by education level, 2021 (%) Source: Eurostat (educ_uoe_enrs04), (educ_uoe_enrs07) and (educ_uoe_enrt01)

Vocational programmes may be classified as only school or combined school and work. If the school component

⁽⁻⁾ not applicable.

⁽¹⁾ Based on available data

⁽²⁾ Short-cycle tertiary education: enrolments exclude the French Community.

Source: Eurostat (online data codes: educ_uoe_enrs04, educ_uoe_enrs07 and educ_uoe_enrt01)

makes up 75 % or more of the total study time, the programme is classified as school-based whereas combined school and work programmes are ones where the work component makes up more than 25 % but not more than 90 % of the total study time.

In the EU in 2021, the share of students of vocational education programmes that participated in combined school and work programmes was around one quarter (24.1 %) in upper secondary education and almost two fifths (38.7 %) in post-secondary non-tertiary education. By contrast, in vocational programmes within short-cycle tertiary education the share was much lower, at 7.8 %.

In 8 of the 26 EU Member States for which data are available, all of the upper secondary pupils enrolled in vocational programmes were in school only programmes. This share was also over three quarters in a further nine Member States. There were five Member States where less than half of upper secondary pupils enrolled in vocational programmes were in school only programmes.

In 9 of the 21 EU Member States with post-secondary non-tertiary education, all of the pupils at this level enrolled in vocational programmes were in school only programmes. This share was also over half in a further five Member States. In Sweden and Ireland the share of post-secondary non-tertiary pupils enrolled in vocational programmes who were in school only programmes was 3.3 % and 2.4 %, respectively, while in Luxembourg, Latvia and Hungary all such pupils were enrolled in combined school and work programmes.

In 20 of the 26 EU Member States for which data are available, there were short-cycle tertiary educational programmes. In 14 of these, all of the students at this level enrolled in vocational programmes were in school only programmes. This share was slightly lower (95.6 %) in Spain and just over half (52.2 %) in Malta. In Sweden, the share of short-cycle tertiary students enrolled in vocational programmes who were in school only programmes was 2.5 %, while in Italy, Latvia and Hungary all such pupils were enrolled in combined school and work programmes.

In 14 EU Member States, vocational programmes exist across all three levels of education shown in Table 2.

- In Czechia and Portugal, all pupils/students enrolled in vocational programmes were in school only programmes in each of the three levels.
- In Belgium, Spain, France, Austria, Poland and Slovakia, a majority of pupils/students enrolled in vocational programmes were in school only programmes in each of the three levels.
- In Italy, all pupils enrolled in vocational programmes in upper secondary and post-secondary non-tertiary education were in school only programmes while all students enrolled in short-cycle tertiary education vocational programmes were in combined school and work programmes.
- In Luxembourg, a majority or all pupils/students enrolled in vocational programmes in upper secondary and short-cycle tertiary education were in school only programmes while all pupils enrolled in post-secondary non-tertiary vocational programmes were in combined school and work programmes.
- In Sweden, a majority of pupils enrolled in vocational programmes in upper secondary education were in school only programmes while a majority of pupils/students enrolled in post-secondary non-tertiary or and short-cycle tertiary education vocational programmes were in combined school and work programmes.
- In Germany, all students enrolled in vocational programmes in short-cycle tertiary education were in school
 only programmes while a majority of pupils enrolled in upper secondary or post-secondary non-tertiary
 education vocational programmes were in combined school and work programmes.
- In Latvia and Hungary, all pupils/students enrolled in vocational programmes were in combined school and work programmes in each of the three levels.

Graduates from vocational programmes

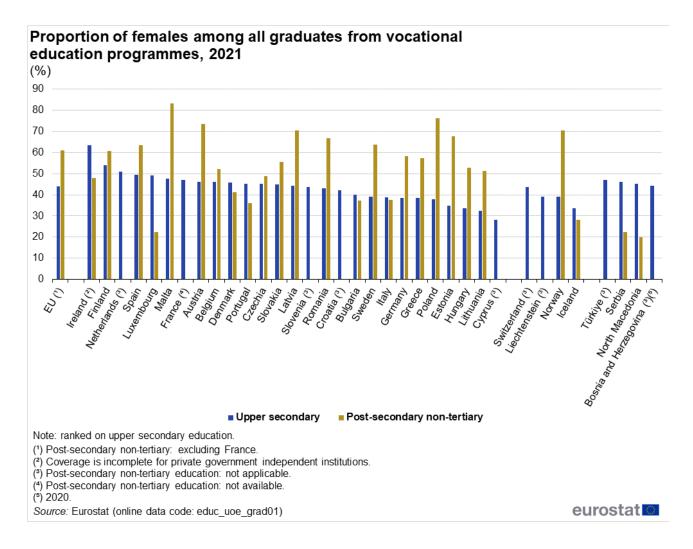


Figure 1: Proportion of females among all graduates from vocational education programmes, 2021 (%) Source: Eurostat (educ_uoe_grad01)

In 2021, 43.9 % of all graduates from upper secondary vocational programmes in the EU were female – see Figure 1. Among the EU Member States, typically between one third and one half of graduates were female. The lowest share was 28.3 % in Cyprus, while a share just above half was recorded in the Netherlands (50.9 %), with higher shares observed in Finland (54.0 %) and Ireland (63.5 %).

A similar comparison for post-secondary non-tertiary graduates shows a higher share of female graduates. In 2021, more than two fifths (61.2 %) of post-secondary non-tertiary graduates in the EU (excluding France) were female. Furthermore, there was a wider range between the values for the EU Member States. The share of female graduates from vocational programmes was lowest in Luxembourg, at 22.5 %. By contrast, female graduates accounted for approximately three quarters of all post-secondary non-tertiary graduates from vocational programmes in Austria (73.4 %) and Poland (76.3 %), and for more than four fifths (83.1 %) in Malta.

Pupil-teacher ratios for vocational programmes

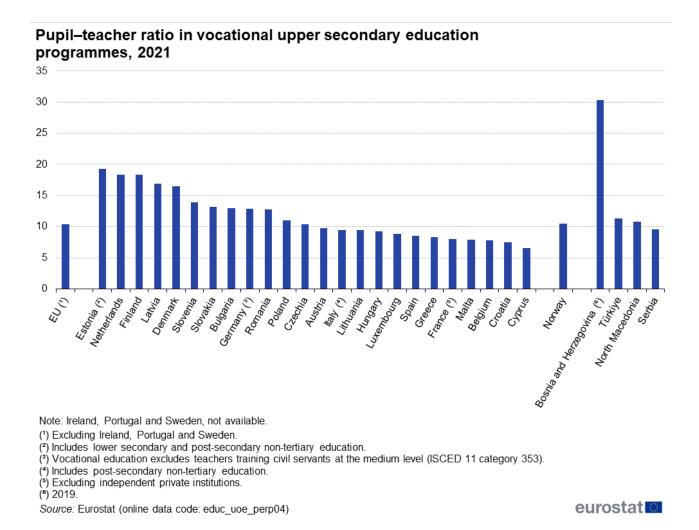


Figure 2: Pupil-teacher ratio in vocational upper secondary education programmes, 2021 Source: Eurostat (educ_uoe_perp04)

The pupil—teacher ratio for vocational upper secondary education programmes in the EU averaged 10.4 pupils per teacher (excluding Ireland, Portugal and Sweden) in 2021 – see Figure 2. This ratio ranged across the EU Member States from 6.6 pupils per teacher in Cyprus to 18.3 pupils per teacher in the Netherlands and Finland and 19.3 pupils per teacher in Estonia (note the broader coverage of statistics for Estonia in Figure 2).

Recent pupil—teacher ratios are also available for post-secondary non-tertiary vocational education for 15 EU Member States (they are not shown in Figure 2). In 2021, the highest ratios were observed for Romania (61.0 pupils per teacher) and Poland (39.0 pupils per teacher), while the lowest ratio was observed in Bulgaria (2.6 pupils per teacher).

Source data for tables and graphs

· Vocational education statistics: tables and figures

Data sources

Sources

The standards for international statistics on education are set by three international organisations:

- the United Nations Educational, Scientific, and Cultural Organization (UNESCO) institute for statistics (UIS);
- the Organisation for Economic Co-operation and Development (OECD);
- Eurostat , the statistical office of the EU.

The source of data used in this article is a joint UNESCO/OECD/Eurostat (UOE) data collection on education statistics and this is the basis for the core components of Eurostat's database on education statistics; in combination with the joint data collection Eurostat also collects data on regional enrolments and foreign language learning.

More information about the joint data collection is available in an article on the UOE methodology.

Classification

The international standard classification of education (ISCED) is the basis for international education statistics, describing nine different levels of education .

Within ISCED 2011, two categories of programme orientation are identified for ISCED levels 2–5: general and vocational educational programmes.

Key concepts

Vocational education programmes are designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation, trade, or class of occupations or trades. Vocational education may have work-based components (such as apprenticeships or traineeships). Successful completion of such programmes leads to vocational qualifications that are labour market relevant and acknowledged as occupationally oriented by the relevant national authorities and/or the labour market.

Vocational programmes may be classified as only school or combined school and work.

- Where the school component makes up 75 % or more of the total study time, the programme is classified as school-based. The teaching may be in a school environment or through distance education.
- Combined school and work programmes are ones where the work component makes up more than 25 % but not more than 90 % of the total study time; in other words, the school learning must be at least 10 %.

A graduate is an individual who has successfully completed an education programme.

Pupil—teacher ratios are calculated by dividing the number of full-time equivalent pupils in each level of education by the number of full-time equivalent teachers at the same level; this ratio should not be confused with average class size, which refers to the number of pupils in a given course or classroom.

Context

Copenhagen process and European initiatives

Since 2002, national authorities and social partners from European countries have taken part in the Copenhagen process which aims to promote and develop vocational education and training (VET) initiatives.

For more information, see the article on Education and training statistics introduced .

One of the targets for the EU within the European Education Area (EEA) is that the share of recent graduates from vocational education and training benefiting from exposure to work-based learning during their vocational education and training should be at least 60 %, by 2025. This covers the age group 20–34 and concerns persons having left education and training 1–3 years previously.

Other articles

• Education and training in the EU - facts and figures

Database

• Education and training (educ), see:

Participation in education and training (educ_part)

Pupils and students - enrolments (educ_uoe_enr)

Education personnel (educ_uoe_per)

Teachers and academic staff (educ uoe perp)

Education and training outcomes (educ_outc)

Graduates (educ_uoe_grad)

Dedicated section

· Education and training

Methodology

Metadata

• Pupils and students - enrolments (ESMS metadata file - educ_uoe_enr_esms)

Manuals and other methodological information

- Classification of learning activities Manual 2016 edition
- International Standard Classification of Education (ISCED) 2011
- ISCED 2011 Operational Manual Guidelines for classifying national education programmes and related qualifications
- UOE data collection on formal education Manual on concepts, definitions and classifications 2022 edition
- UNESCO OECD Eurostat (UOE) joint data collection methodology

Legislation

- Regulation (EC) No 452/2008 of 23 April 2008 concerning the production and development of statistics on education and lifelong learning
 - Commission Regulation (EU) No 912/2013 of 23 September 2013 as regards statistics on education and training systems
 - Summaries of EU Legislation: statistics on education and lifelong learning

External links

- European Education and Culture Executive Agency (EACEA)
 - Eurydice
 - Eurydice Compulsory Education in Europe 2022/23
- European Commission European Education Area Strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021–2030)
- European Commission European Education Area Vocational education and training
- European Commission Erasmus+
- CEDEFOP European Centre for the Development of Vocational Training
 - CEDEFOP VET toolkit for tackling early leaving
- OECD Education, see:
 - OECD Early childhood and schools
 - OECD Vocational education and training (VET) and adult learning
- UNESCO Education transforms lives
 - UNESCO Skills for work and life