

# C1 Education and Qualification<sup>454</sup>

The percentage of the labour force with tertiary qualifications (ISCED 5+6 and ISCED 7+8) was 33.8 percent in Germany in 2020, significantly lower than in most comparative countries (C 1-1). In terms of higher academic qualifications (ISCED 7+8), Germany's share of 14.5 percent was also around 3 percentage points below the average for the countries under consideration. By contrast, with 55.1 percent in a European comparison, Germany has by far the highest proportion of intermediate degrees (ISCED 3\*\* and ISCED 4) that formally allow entry to the tertiary level.

The share of first-year students in the age-matched population of under-25s (C 1-2) increased by 4 percentage points to 56 percent in Germany in 2019 compared to the previous year. The adjusted rate for under-25s and excluding international first-year students in Germany in 2019 was 49 percent, also 4 percentage points higher than in 2018.

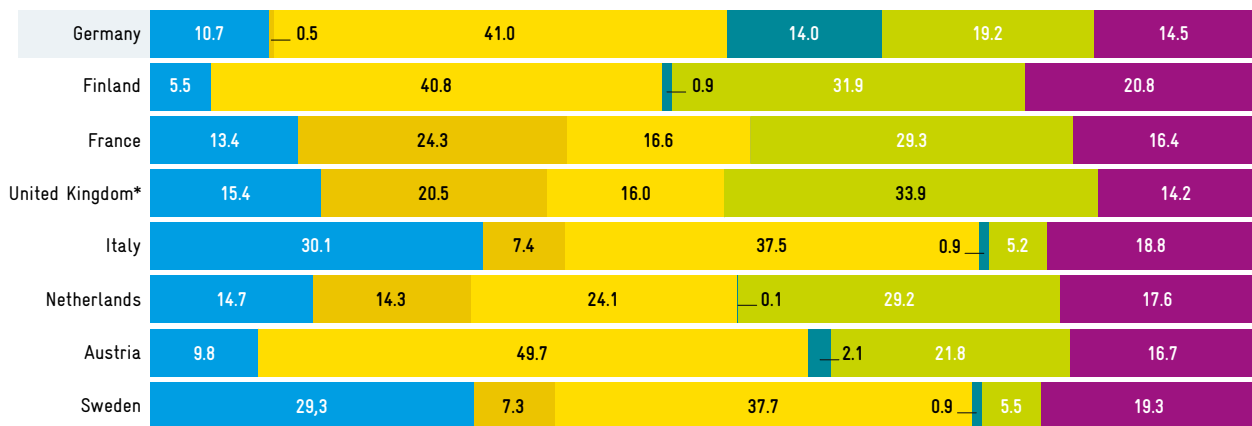
The number of students entitled to study in 2020 has decreased by almost 35,000 to 381,951 compared to the previous year. The rate of qualified school-leavers, i. e. the proportion of those eligible to study as a percentage of the population of the corresponding age, fell to 44.6 percent in 2020 (C 1-3), but is estimated to rise again to 50 percent by 2030.<sup>455</sup>

The number of 'Bildungsinländer', i. e. those students without German citizenship who acquired their entitlement to study in Germany, was 91,708 in 2020, the equivalent of the previous year's figure of 91,699 (C 1-4). On the other hand, the total number of foreign students in Germany increased again, despite a sharp 22 percent decline in the number of international first-year students. The number of foreign students, i. e. students without German citizenship who have acquired their entitlement to study abroad and are enrolled at German higher education institutions, was in 2020 around 1.5 percent higher than in 2019.

In 2020, the number of first-time graduates (C 1-5) fell by 6.8 percent compared to the previous year, a much sharper decline than in previous years.<sup>456</sup> The number of first-time graduates in the STEM field in particular fell at an above-average rate.

In 2020, the rate of people aged 25 to 64 who participated in continuing education and training (CET) in the last four weeks (C 1-6) reached 4.2 percent, by far the lowest value in the observation period from 2010 to 2020. On average, the individual CET rate fell by 0.8 percentage points compared to 2019. The participation of businesses in CET reached 54.9 percent in 2019, 0.4 percentage points higher than the year before.

Fig. C1-1 Qualification levels of gainfully employed persons in selected countries 2020 in percent



Classification of qualification levels ISCED

- ISCED 0-2: Pre-primary and lower secondary education
- ISCED 3\*: Upper secondary or completion of VET without access to tertiary education
- ISCED 3\*\*: General and vocational upper secondary education with access to tertiary education
- ISCED 4: Post-secondary non-tertiary education (Abitur school-leaving examination and apprenticeship)
- ISCED 5+6: Short, career-related tertiary education (2 to less than 3 years), Bachelor's degree, training as a master craftsman or technician or equivalent vocational school qualification
- ISCED 7+8: Master's, doctoral or equivalent level

\* Data as from 2019.

The ISCED education levels are recognized UNESCO standards for international comparisons of country-specific education systems. Source: Eurostat, European Union Labour Force Survey. Calculations by CWS in Kerst et al. (2022). © EFI – Commission of Experts for Research and Innovation 2022.

Tab. C1-2 Number of new tertiary students in the age-matched population of under-25s in selected countries 2013–2019 in percent

Countries	2013 <sup>1)</sup>	2014 <sup>1)</sup>	2015 <sup>1)</sup>	2016 <sup>1)</sup>	2017 <sup>1)</sup>	2018 <sup>1)</sup>	2019 <sup>1)</sup>	2013 <sup>2)</sup>	2014 <sup>2)</sup>	2015 <sup>2)</sup>	2016 <sup>2)</sup>	2017 <sup>2)</sup>	2018 <sup>2)</sup>	2019 <sup>2)</sup>
Belgium	64	64	66	69	73	68	66	54	57	59	62	67	62	61
Germany <sup>3)</sup>	51	54	53	51	52	52	56	46	48	46	45	45	45	49
Finland	45	44	46	46	47	47	48	41	40	42	42	43	43	45
United Kingdom	48	54	56	60	61	63	66	42	47	49	52	53	54	57
Italy	40	40	42	43	46	48	49	–	–	41	41	43	46	48
Japan	–	–	–	–	71	73	72	–	–	–	–	–	–	–
Sweden	42	45	45	44	45	46	46	40	42	41	40	41	41	41
Switzerland	48	55	55	55	56	48	50	–	47	47	47	47	40	42
USA	48	48	48	47	46	46	45	47	47	46	46	44	44	43
OECD average	–	–	–	–	–	54	56	50	51	48	49	50	49	51

<sup>1)</sup> The entry rates for under-25s are given according to the ISCED 2011 classification for levels 5, 6, 7 and 8.

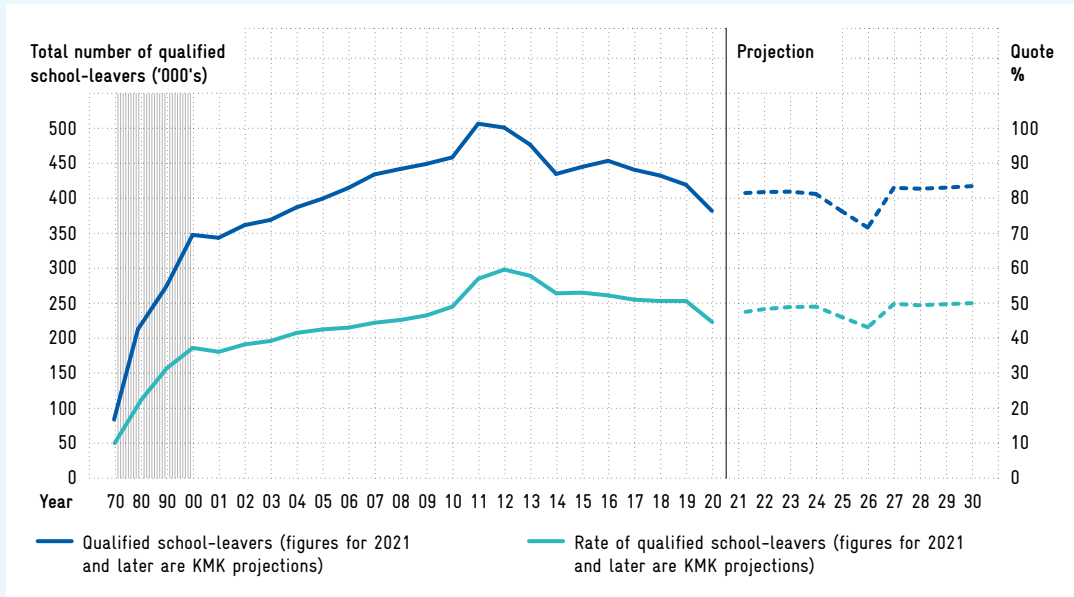
<sup>2)</sup> Adjusted rate for under-25s, excluding international first-year students.

<sup>3)</sup> Since 2019, including professional advancement trainings.

Source: OECD (Ed.): Education at a Glance, various volumes; as well as OECD database stats.oecd.org in Kerst et al. (2022).

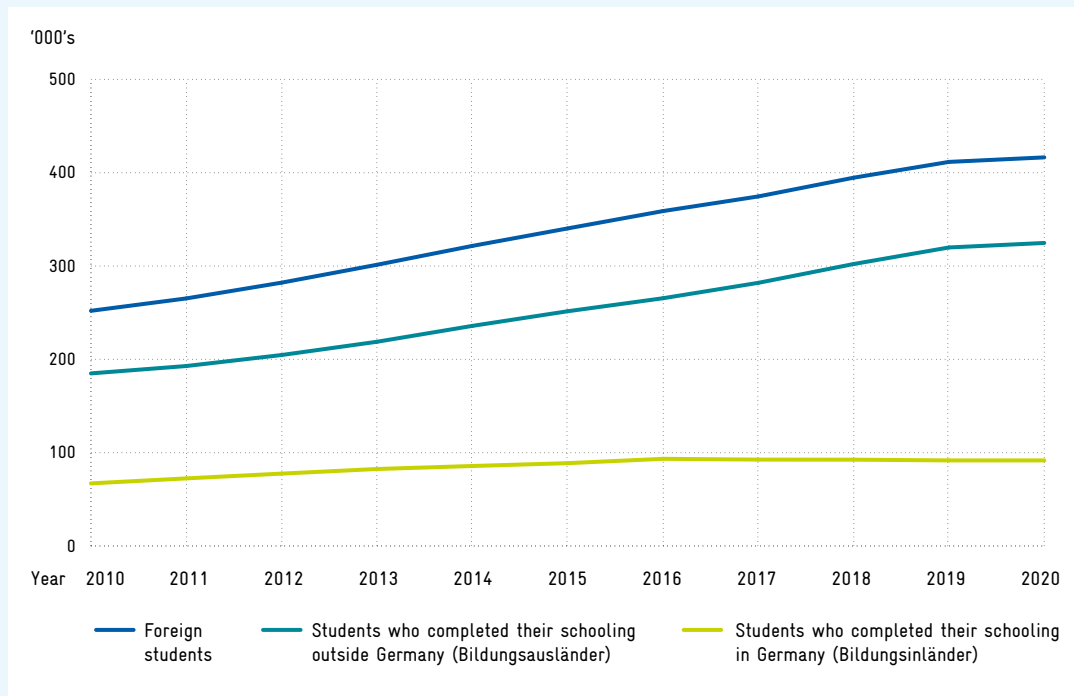
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**Fig. C1-3 School-leavers qualified for higher education in Germany 1970–2030**



School-leavers qualified for higher education: either with a 'general' or a 'technical' school-leaving certificate\* (in Germany: Abitur). Rate of qualified school-leavers: number of school-leavers qualified for higher education as a percentage of the relevant age group. Since 2012, rates taking into account the results of the 2011 census. Source of actual figures: Federal Statistical Office in Kerst et al. (2022). Source of forecast figures: Statistical publications by the Standing Conference of the Ministers of Education and Cultural Affairs (Kultusministerkonferenz, KMK) in Kerst et al. (2022). © EFI – Commission of Experts for Research and Innovation 2022.

**Fig. C1-4 Foreign students at German tertiary education institutions 2010–2020<sup>1)</sup>**



Foreign students are defined as persons without German citizenship. They can be divided into students who attained their higher-education entrance qualification in Germany (Bildungsinländer), and those who attained this qualification abroad (Bildungsausländer). 1) The data are submitted annually by the higher education institutions to the statistical offices in the winter semester after the end of the enrolment period. Source: Federal Statistical Office, research by DZHW-ICE in Kerst et al. (2022). © EFI – Commission of Experts for Research and Innovation 2022.

**Tab. C 1-5 First-time graduates and subject structure rate 2015–2020**

	2015	2016	2017	2018	2019	2020
<b>Total number of graduates</b>	<b>317,102</b>	<b>315,168</b>	<b>311,441</b>	<b>303,155</b>	<b>310,747</b>	<b>289,615</b>
Percentage of women	51.1	52.0	52.6	53.0	53.6	53.7
Percentage of graduates from universities	56.8	54.7	53.9	53.0	52.8	50.7
<b>Humanities</b>	<b>37,135</b>	<b>34,886</b>	<b>32,205</b>	<b>30,491</b>	<b>30,660</b>	<b>27,633</b>
Share subject group in percent	11.7	11.1	10.3	10.1	9.9	9.5
<b>Legal, economics and social sciences</b>	<b>128,273</b>	<b>132,737</b>	<b>134,605</b>	<b>131,832</b>	<b>135,165</b>	<b>128,531</b>
Share subject group in percent	40.5	42.1	43.2	43.5	43.5	44.4
<b>Human medicine, health sciences</b>	<b>17,935</b>	<b>19,521</b>	<b>20,308</b>	<b>20,101</b>	<b>21,957</b>	<b>20,309</b>
Share subject group in percent	5.7	6.2	6.5	6.6	7.1	7.0
<b>Agriculture, forestry and nutritional sciences, veterinary medicine</b>	<b>7,442</b>	<b>6,978</b>	<b>7,148</b>	<b>7,252</b>	<b>7,226</b>	<b>7,104</b>
Share subject group in percent	2.3	2.2	2.3	2.4	2.3	2.5
<b>Art, art history</b>	<b>11,514</b>	<b>11,268</b>	<b>11,119</b>	<b>10,892</b>	<b>10,905</b>	<b>9,754</b>
Share subject group in percent	3.6	3.6	3.6	3.6	3.5	3.4
<b>Mathematics, natural sciences</b>	<b>30,001</b>	<b>28,081</b>	<b>26,261</b>	<b>25,677</b>	<b>26,765</b>	<b>23,627</b>
Share subject group in percent	9.5	8.9	8.4	8.5	8.6	8.2
<b>Engineering</b>	<b>81,300</b>	<b>78,552</b>	<b>76,133</b>	<b>73,849</b>	<b>74,868</b>	<b>69,547</b>
Share subject group in percent	25.6	24.9	24.4	24.4	24.1	24.0

First-degree graduates and subject-structure ratio: First-degree graduates are persons who have successfully completed a first degree course. The subject-structure ratio indicates the percentage of first-degree graduates who have completed their degree course in a specific subject or group of subjects.

Source: Federal Statistical Office as well as research by DZHW-ICE in Kerst et al. (2022).

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**Tab. C 1-6 Participation of individuals and companies engaging in continuing education and training (CET) 2010–2020 in percent**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>a) Individual CET rate</b>	4.9	4.9	5.1	4.9	4.8	4.9	5.2	5.0	4.9	5.0	4.2
<b>Gainfully employed persons by qualification level</b>	5.6	5.6	5.9	5.6	5.5	5.5	5.8	5.4	5.3	5.4	4.7
low (ISCED 0–2)	1.3	1.0	1.4	1.4	1.3	1.2	1.5	1.5	1.3	1.5	1.7
medium (ISCED 3–4)	3.9	3.9	4.1	3.9	4.2	4.3	4.5	4.2	4.0	4.2	3.6
high (ISCED 5–8)	10.5	10.3	10.6	10.1	9.4	9.3	9.7	8.9	8.9	8.9	7.6
<b>Unemployed persons by qualification level</b>	3.9	4.6	3.8	3.6	3.7	3.7	4.2	5.3	5.1	4.5	– <sup>1)</sup>
low (ISCED 0–2)	3.5	3.6	3.1	2.9	2.8	2.6	3.3	5.1	4.9	3.3	– <sup>1)</sup>
medium (ISCED 3–4)	3.2	4.0	3.6	3.4	3.3	3.4	3.6	4.3	4.2	3.0	4.4
high (ISCED 5–8)	8.3	10.0	6.6	5.4	6.4	6.3	7.2	8.6	7.7	9.8	– <sup>1)</sup>
<b>Inactive persons by qualification level</b>	2.0	1.9	1.6	1.8	1.8	2.0	2.4	3.2	2.9	2.7	2.2
low (ISCED 0–2)	1.6	1.5	1.4	1.4	1.3	1.7	2.5	4.0	3.8	3.4	2.0
medium (ISCED 3–4)	1.8	1.9	1.4	1.5	1.6	1.6	1.8	2.2	2.0	2.0	1.5
high (ISCED 5–8)	3.6	2.7	2.8	3.5	3.4	3.7	4.4	4.9	4.2	3.9	4.6
<b>b) Corporate participation in CET<sup>2)</sup></b>	44.1	52.6	53.1	52.1	53.6	52.8	53.2	53.0	54.5	54.9	–
<b>By sector</b>											
Knowledge-intensive manufacturing	55.9	62.9	65.5	66.7	69.9	70.6	64.0	65.0	63.0	66.6	–
Non-knowledge-intensive manufacturing	33.3	41.2	43.2	41.8	43.0	44.5	46.3	45.5	46.0	49.6	–
Knowledge-intensive services	57.1	68.7	67.2	67.4	67.0	67.5	69.2	66.1	69.1	66.5	–
Non-knowledge-intensive services	37.5	44.9	45.3	44.3	46.0	43.8	43.7	45.2	46.8	46.9	–
Non-commercial industry	51.2	59.0	60.3	58.4	61.9	60.1	59.3	59.3	60.0	60.9	–
<b>By company size</b>											
< 50 employees	41.8	50.5	50.9	49.8	51.4	50.5	50.8	50.6	51.9	52.5	–
50–249 employees	83.3	90.8	89.7	90.1	90.8	89.3	89.5	89.0	92.0	90.0	–
250–499 employees	93.3	95.9	96.5	97.0	96.9	96.8	96.4	96.0	97.2	97.2	–
≥ 500 employees	97.9	98.4	97.8	99.1	99.1	97.1	97.9	97.2	97.9	– <sup>3)</sup>	–

Individual CET rate: Percentage of people who participated in CET in the last four weeks prior to the time of the survey.

Corporate participation in CET: percentage of companies where employees were released for CET or whose CET costs were paid.

On ISCED see C1–1.

Population a): All persons aged between 25 and 64.

Population b): All establishments with at least one employed person subject to social insurance contributions.

<sup>1)</sup> Not shown due to lack of reliable data.

<sup>2)</sup> The data for corporate CET participation in 2020 were not yet available by the editorial deadline.

<sup>3)</sup> Figures censored for data protection reasons, as they are only just below 100 percent.

Source a): European Union Labour Force Survey (special evaluation). Calculations by CWS in Kerst et al. (2022). Data as from 2016 relating to unemployed and inactive persons are comparable to previous years only to a limited extent due to methodological changes and stricter confidentiality rules.

Source b): IAB Establishment Panel (special evaluation). Calculations by CWS in Kerst et al. (2022).

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