

Education and qualification⁵²¹

C 1

The proportion of the working population in Germany holding tertiary qualifications (ISCED 5+6 and ISCED 7+8) has again risen slightly. In 2017, this figure was 31.4 percent – 0.2 percentage points higher than in the previous year (C 1-1). The percentage of people with low qualifications (ISCED 0-2) also increased slightly, from 10 to 10.1 percent. The percentage of people with low qualifications in Germany is the second lowest by international comparison; only in Finland is the figure lower.

The number of new tertiary students as a percentage of the relevant age group (C 1-2) in Germany has fallen by 3 percentage points, from 63 to 60 percent. The adjusted figure for German under-25s (i.e. excluding new international tertiary students) also fell by 3 percentage points, from 48 to 45 percent.

In 2017, the rate of qualified school-leavers (C 1-3), i.e. the number of school-leavers qualified for higher education as a percentage of the relevant age group, was 51 percent. The Standing Conference of the Ministers of Education and Cultural Affairs (KMK) expects the rate of qualified school-leavers to continue to increase, reaching around 58 percent by 2030. In 2017, there were 440,826 qualified school-leavers in Germany. The Standing Conference of the Ministers of Education and Cultural Affairs has forecasted that the number of qualified school-leavers will remain broadly constant until 2030.

The number of first-time graduates (C 1-4) fell slightly in 2017 compared to the previous year, from 315,168 to 311,441. The proportion of first-time graduates that graduated from a university also decreased once again, falling to 53.9 percent in 2017. By contrast, the number of graduates from universities of applied sciences rose from 52 to 52.6 percent.

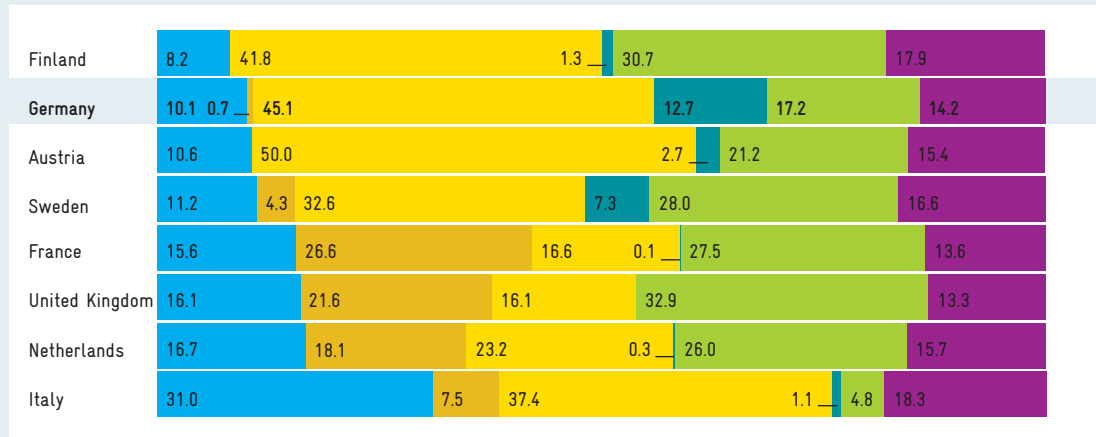
The number of foreign students with university entrance qualifications gained in Germany (Bildungsinländer) has fallen for the first time in a decade, from 93,411 in the winter semester 2016/17 to 92,581 in the winter semester 2017/18. On the other hand, the number of foreign students in Germany with university entrance qualifications gained outside of Germany (Bildungsausländer) rose once again (C 1-5). In the winter semester 2017/18, 282,002 foreign students (Bildungsausländer) were matriculated students of German tertiary education institutions. This figure has almost doubled since the winter semester 2001/02.

The further training rate (C 1-6) fell to 5.0 percent in 2017, compared to 5.2 percent the previous year. There was a particular decline in the further training rate of gainfully employed and highly qualified persons, from 9.7 to 8.9 percent. By contrast, the rate of corporate participation in further training rose from 52.8 percent in 2015 to 53.2 percent in 2016.

Fig. C 1-1

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Qualification levels of gainfully employed persons in selected EU countries in 2017 as percentages



Classification of the ISCED qualification levels¹⁾.

- ISCED 0-2: (Pre)primary and lower secondary education
- ISCED 3*: General and vocational upper secondary education without direct access to tertiary education
- ISCED 3**: General and vocational upper secondary education with direct 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 degree, doctoral degree or equivalent qualification

¹⁾ UNESCO uses the ISCED classification of educational levels as standards for international comparisons of country-specific education systems. They are also used by the OECD.

Source: Eurostat, European Labour Force Survey. Calculation by CWS in Gehrke et al. (2019).

Tab. C 1-2

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Share of new tertiary students as a percentage of the relevant age group in selected OECD countries

University entry rate: number of new tertiary students as a percentage of the relevant age group.

OECD countries ¹⁾	2006	2009	2012	2013 ²⁾	2014 ²⁾	2015 ²⁾	2016 ²⁾	2013 ³⁾	2014 ³⁾	2015 ³⁾	2016 ³⁾
Germany	35	40	53	59	64	63	60	45	48	48	45
Belgium	35	31	34	67	67	69	72	54	57	59	62
Finland	76	69	66	55	53	56	58	41	40	42	42
Italy	56	50	47	42	44	46	48	-	-	41	41
Japan	45	49	52	-	80	80	80	-	-	-	-
Sweden	76	68	60	56	62	62	62	40	42	41	40
Switzerland*	38	41	44	-	-	-	-	-	-	47	47
United Kingdom	57	61	67	58	61	69	64	42	44	50	48
USA	64	70	71	52	52	52	52	47	47	46	50
OECD average	56	59	58	67	68	66	66	50	51	48	49

¹⁾ To date, no figures have been made available for France, South Korea or China since ISCED 2011. These countries are therefore not included in the table. Instead, three European OECD countries were included to supplement the results: Belgium, Finland and Italy.

²⁾ The table shows the university entry rates according to the ISCED classification for levels 5, 6 and 7. Please note: figures from 2013 and later were compiled according to ISCED 2011, figures before 2013 according to ISCED 97; this table is therefore not comparable with previous years. ISCED 2011 used here has nine levels, while ISCED 1997 only had seven. ISCED 2011 distinguishes between four instead of two levels in the field of higher education (ISCED 1997: Levels 5A and 6; ISCED 2011: Levels 5 to 8) and enables a distinction to be made between 'general and vocational upper secondary education without direct access to tertiary education (ISCED 3*) on the one hand and 'general and vocational upper secondary education with direct access to tertiary education (ISCED 3**) on the other.

³⁾ Adjusted rate for under-25s, excluding new international tertiary students.

* The missing figures are not shown due to a data error. For further information on the calculation of the rates for Switzerland, see Gehrke et al. (2019), Chap. 4.1.7.

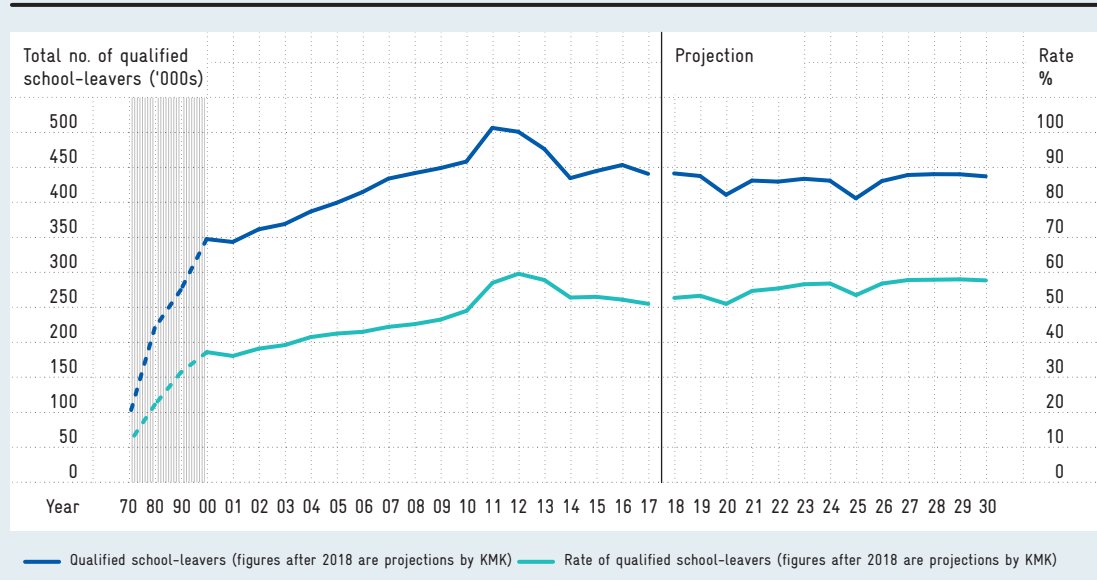
Sources: OECD (ed.): Education at a glance. OECD indicators, various years in Gehrke et al. (2019).

Fig. C 1-3

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School-leavers qualified for higher education in Germany 1970-2030 (figures for 2018 and later are projections)

School-leavers qualified for higher education: either with a 'general' or '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 2013, the actual figures no longer include school leavers who have passed the school part of the 'technical' Abitur but must still do a period of professional practical training according to Länder rules to fully qualify for tertiary education.
Source of actual figures: Federal Statistical Office (BA) in Gehrke et al. (2019).
Quelle Prognosewerte: Statistische Veröffentlichungen der Kultusministerkonferenz in Gehrke et al. (2019).
Source of forecast figures: statistical publications of the Standing Conference of Education Ministers (KMK) in Gehrke et al. (2019).

Tab. C 1-4

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Number of first-time graduates and subject-structure rate¹⁾

First-degree graduates and subject structure rate: the subject structure rate indicates the percentage of first-degree graduates who have completed their studies in a particular subject or group of subjects. First-degree graduates are persons who have successfully completed a first degree.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total number of graduates²⁾	239,877	260,498	287,997	294,330	307,271	309,621	309,870	313,796	317,102	315,168	311,441
Percentage of women	51.8	52.2	51.7	52.1	51.4	51.3	51.5	51.2	51.1	52.0	52.6
Percentage of graduates from universities	62.4	62.4	62.0	62.0	62.1	61.3	59.9	59.0	56.8	54.7	53.9
Humanities	30,997	36,458	38,684	38,385	39,435	38,444	38,247	38,788	37,135	34,886	32,205
Percentage of subject group	12.9	14.0	13.4	13.0	12.8	12.4	12.3	12.4	11.7	11.1	10.3
Legal, economics and social sciences	98,668	101,418	116,414	119,289	122,294	122,239	123,171	125,628	128,273	132,737	134,605
Percentage of subject group	41.1	38.9	40.3	40.5	39.8	39.5	39.7	40.0	40.5	42.1	43.2
Human medicine	13,358	14,345	15,142	15,222	15,686	15,856	16,534	17,331	17,935	19,521	20,308
Percentage of subject group	5.6	5.5	5.2	5.2	5.1	5.1	5.3	5.5	5.7	6.2	6.5
Agriculture, forestry and food sciences, veterinary medicine	6,534	7,204	7,729	7,125	7,521	7,345	7,158	7,008	7,442	6,978	7,148
Percentage of subject group	2.7	2.8	2.7	2.4	2.4	2.4	2.3	2.2	2.3	2.2	2.3
Art	10,399	11,185	11,544	11,820	12,525	12,866	12,542	11,913	11,514	11,268	11,119
Percentage of subject group	4.3	4.3	4.0	4.0	4.1	4.2	4.0	3.8	3.6	3.6	3.6
Mathematics, natural sciences	22,986	27,377	30,953	32,800	34,096	32,793	31,665	31,635	30,001	28,081	26,261
Percentage of subject group	9.6	10.5	10.7	11.1	11.1	10.6	10.2	10.1	9.5	8.9	8.4
Engineering	53,496	58,514	64,004	65,621	71,128	75,697	77,049	78,018	81,300	78,552	76,133
Percentage of subject group	22.3	22.5	22.2	22.3	23.1	24.4	24.9	24.9	25.6	24.9	24.4

¹⁾ The Federal Statistical Office's new subject-group classification has been in use since the 2015/16 winter semester. Apart from minor changes, such as the renaming of study subjects or the merger of Veterinary Medicine with Agricultural, Forestry and Food Sciences, there were two major re-classifications. The subject group Legal, Economic and Social Sciences now also includes Psychology, Education and Special Needs Education, which used to be assigned to the subject group Language and Cultural Sciences (now called Humanities). Since the changeover, Computer Science has been counted under Engineering and not, as previously, as part of Mathematics, Natural Sciences. Furthermore, a new area of study called Materials Science was introduced under Engineering. These two subjects had previously been assigned to Mechanical Engineering. All the time series have been retrospectively reclassified to fit the new system of subjects. This avoids breaks in the time series. However, comparisons with the tables from the previous EFI Reports are now only possible to a limited extent.

²⁾ Graduates with first academic degree.

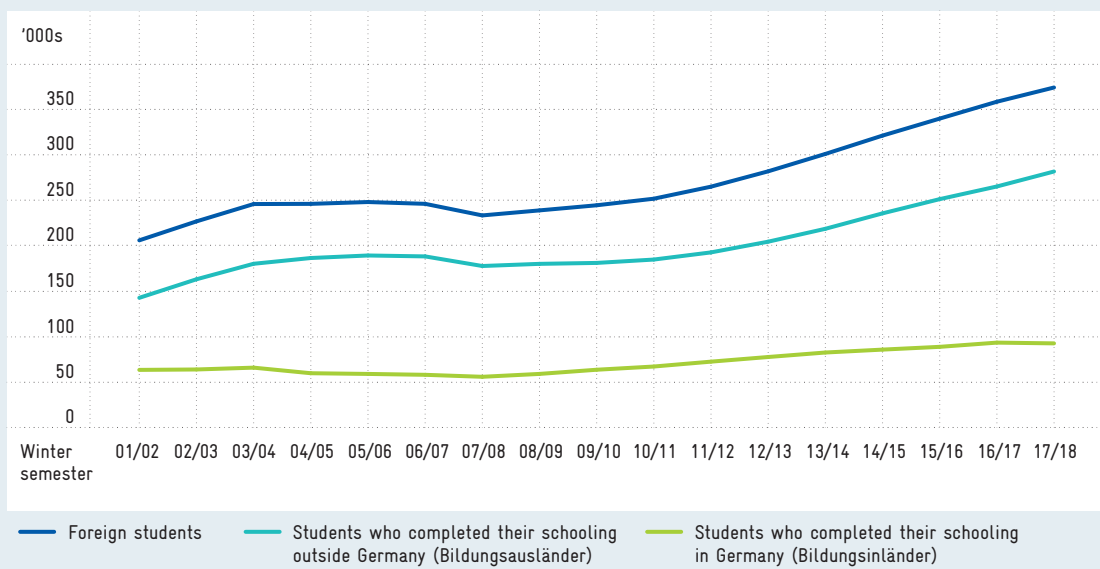
Source: Federal Statistical Office and research by DZHW-ICE, in Gehrke et al. (2019).

Fig. C 1-5

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Foreign students at German tertiary education institutions

Foreign students are defined as persons without German citizenship. They can be divided into students who obtained their higher-education entrance qualification in Germany (Bildungsinländer/innen), and those who obtained this qualification abroad (Bildungsausländer/innen).



Source: Federal Statistical Office and research by DZHW-ICE, in Gehrke et al. (2019).

Tab. C 1-6

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Participation of individuals and companies in further training as percentages

Individual further-education rate: percentage of people who had participated in a further-education measure in the last four weeks prior to the time of the survey. Corporate participation in further training: percentage of companies where employees were released for training or whose training costs were paid.*

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
a) Individual further-education rate	4.9	5.5	5.0	4.9	4.9	5.1	4.9	4.8	4.9	5.2	5.0
Gainfully employed persons	5.9	6.4	5.8	5.6	5.6	5.9	5.6	5.5	5.5	5.8	5.4
low (ISCED 0-2)	1.5	1.7	1.4	1.3	1.0	1.4	1.4	1.3	1.2	1.5	1.5
medium (ISCED 3-4)	4.1	4.4	4.2	3.9	3.9	4.1	3.9	4.2	4.3	4.5	4.2
high (ISCED 5-8)	11.4	12.2	10.6	10.5	10.3	10.6	10.1	9.4	9.3	9.7	8.9
Unemployed persons	3.1	4.9	4.3	3.9	4.6	3.8	3.6	3.7	3.7	4.2	5.3
low (ISCED 0-2)	2.5	2.4	2.7	3.5	3.6	3.1	2.9	2.8	2.6	3.3	5.1
medium (ISCED 3-4)	2.9	5.3	4.0	3.2	4.0	3.6	3.4	3.3	3.4	3.6	4.3
high (ISCED 5-8)	5.4	8.1	8.4	8.3	10.0	6.6	5.4	6.4	6.3	7.2	8.6
Inactive persons	1.7	2.3	1.9	2.0	1.9	1.6	1.8	1.8	2.0	2.4	3.2
low (ISCED 0-2)	0.8	1.4	1.8	1.6	1.5	1.4	1.4	1.3	1.7	2.5	4.0
medium (ISCED 3-4)	1.7	1.8	1.5	1.8	1.9	1.4	1.5	1.6	1.6	1.8	2.2
high (ISCED 5-8)	3.5	5.4	3.4	3.6	2.7	2.8	3.5	3.4	3.7	4.4	4.9
b) Corporate participation in further training¹⁾	45.5	49.0	44.6	44.1	52.6	53.1	52.1	53.6	52.8	53.2	-
By sector											
Knowledge-intensive manufacturing	65.3	65.1	52.6	55.9	62.9	65.5	66.7	69.9	70.6	64.0	-
Non-knowledge-intensive manufacturing	33.2	37.8	32.5	33.3	41.2	43.2	41.8	43.0	44.5	46.3	-
Knowledge-intensive services	63.2	68.3	58.7	57.1	68.7	67.2	67.4	67.0	67.5	69.2	-
Non-knowledge-intensive services	37.3	39.4	38.0	37.5	44.9	45.3	44.3	46.0	43.8	43.7	-
Non-commercial economy	49.9	53.8	51.9	51.2	59.0	60.3	58.4	61.9	60.1	59.3	-
By company size											
< 50 employees	43.2	46.9	42.5	41.8	50.5	50.9	49.8	51.4	50.5	50.8	-
50 - 249 employees	85.1	86.7	81.3	83.3	90.8	89.7	90.1	90.8	89.3	90.0	-
250 - 499 employees	95.2	95.9	92.0	93.3	95.9	96.5	97.0	96.9	96.8	96.4	-
≥ 500 employees	95.3	97.8	96.0	97.9	98.4	97.8	99.1	99.1	97.1	97.8	-

* Question in the IAB Establishment Panel: "Were employees released to participate in in-house or external training measures and/or were the costs of training measures paid wholly or in part by the establishment?" For ISCED, cf. C 1-1.

Basic unit a) All persons aged 25-64.

Basic unit b): All companies with at least one employee subject to social insurance contributions.

¹⁾ The data for corporate participation in further training was not available by the editorial deadline.

Source a): European Labour Force Survey (special evaluation). Calculations by CWS in Gehrke et al. (2019). Data for 2016 and 2017 relating to unemployed and inactive persons are only comparable with previous years' data to a limited extent due to methodological adjustments and stricter confidentiality regulations.

Source b): IAB Establishment Panel (special evaluation). Calculations by CWS in Gehrke et al. (2019).