
VOCATIONAL EDUCATION
AND TRAINING IN EUROPE

GERMANY



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This VET in Europe report is part of a series prepared by Cedefop's ReferNet network. VET in Europe reports provide an overview of national vocational education and training (VET) systems of the EU Member States, Iceland and Norway. The reports help to understand VET's main features and role within countries' overall education and training systems from a lifelong learning perspective, and VET's relevance to and interaction with the labour market.

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Chapter 1.

External factors influencing VET

Germany is a federation made up of 16 states (*Länder*). Berlin is both Germany's capital and seat of government. When it was founded, the federal republic of Germany adopted a social market economy, combining free enterprise within a competitive economy with social progress.

There is a distinct cooperative federalism within the state sector, both horizontally between states and between individual states and the federal government. Unless specified otherwise in the constitution (*Grundgesetz*), governmental tasks fall under the competence of the individual states, which also have legislative power in certain areas. Through the federal council (*Bundesrat*), they play a role in the legislation and administration of the federation and in issues related to the European Union.

Educational and cultural legislation and administration are primarily the responsibility of the states. In the field of vocational education and training (VET), the federal government is responsible for in-company training, while the states are responsible for the school-based parts of vocational training, and hence also for vocational schools. The German VET system (both initial and continuing VET) and its governance are characterised by a strong partnership between the state, employers and trade unions.

1.1 Demographics

The German population is estimated at 82 850 000 people as of 1 January 2018. The population had been steadily decreasing since 2006 (2006: 82 437 995 / 2008: 82 217 837 / 2010: 81 802 257 / 2012: 80 327 900) ⁽¹⁾, but this trend was reversed in 2013, due to the above-average migration surpluses (net migration in 2015: +1.1 million.). Demographic changes and an increasing attractiveness of the general and higher education sector will represent a major challenge for VET, its future structure and its capacity to ensure a supply of skilled workers.

⁽¹⁾ Source: Eurostat, Demographic Statistics; Date of extraction: 31.10.2018.
<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00001>

The ageing of the currently strong middle-aged population cohorts will lead to significant shifts in the age structure. In 2013, the base year, 18.2% of the population were below 20, 61% were between 20 and 65, and 20.9% were 65 or older (Table 1). By 2060, almost one in three (31.7%) will be at least 65, and there will be twice as many 70-year-olds as new-born children (Statistisches Bundesamt 2015a, p. 6). The decrease in the overall number of people aged between 20 and 65 will produce a shift towards an older working age population.

Table 1. **Age-specific demographic trends in Germany (%)**

	2013	2020	2030	2040	2050	2060
0-19	18.2	17.6	17.6	16.8	16.2	16.4
20-64	61.0	60.0	55.4	53.6	53.4	51.9
65+	20.9	22.4	27.0	29.6	30.4	31.7

Source: Statistisches Bundesamt (2015): Bevölkerung Deutschlands bis 2060 - 13. koordinierte Bevölkerungsvorausberechnung (Variante 2). Date of extraction 31.10.2018.
<https://www.destatis.de/DE/Publikationen/Thematisch/Bevoelkerung/VorausberechnungBevoelkerung/BevoelkerungDeutschland2060.html>

The 16-20 age group will shrink by around 20% by 2050 (Statistisches Bundesamt 2015a, p. 54). A change in young people's educational decisions is also predicted. There is a general trend towards higher level qualifications: at the secondary level, there is a trend towards general education, i.e., the higher education entrance qualification (*Abitur*), and thus more students enrolling in higher education programmes, especially dual study programmes at universities of applied sciences (*Fachhochschulen*). As a result, there is an increase in competition between the VET and the general education / higher education sectors at all qualification levels (ISCED 3 and 6) (Chapter 2).

In comparison to the EU-28 average, Germany has a higher projected ratio of people older than 65: by 2020, the share will be 2 percentage points (pp.) higher. By 2080, the projected over-65 dependency of the EU-28 is 52.3%. The forecast is that the German rate will then be 2.9 pp. higher than the EU average. The forecast for Germany was revised substantially downwards since our last report in 2016 due to the high migration surpluses in 2015 and 2016.

Table 2. **Projected old-age dependency ratio (%)**

	2015	2020	2030	2040	2050	2060	2070	2080
28	28.8	31.7	39.1	46.4	50.3	51.6	51.2	52.3
DE	32.0	33.7	42.9	49.4	51.2	55.0	55.9	55.2

Source: Eurostat - Population projections 2015 based; aged 65+ divided by population aged 15-64 (projections); date of data extraction: 31.10.2018.

<https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00200>

In 2016, 18.6 million people living in Germany had a migration background in a narrow sense ⁽²⁾, approx. 1.5 million more than in 2015. The proportion of the population with a migration background in a narrow sense in the total population rose from 21.0% in 2015 to 22.5% in 2016. Out of these 18.6 million people with a migration background in a narrow sense, 12.7 million persons were migrants “with own migration experience” (not born in Germany). Two-thirds of these originate from a European country, many from the European Union (40%). Most of the population with a migration background originate from Turkey (15.1%), followed by Poland (10.1%), the Russian Federation (6.6%) and Italy (4.6%). Most of the 3.2 million (late) ethnic German repatriates or resettlers ⁽³⁾ come from the successor states of the former Soviet Union (especially from the Russian Federation and Kazakhstan) (Statistisches Bundesamt 2017, p. 8).

In 2016, there were approx. 1.6 million refugees ⁽⁴⁾ in Germany. Most of them had come and applied for asylum in 2015 (476 510 applications) and in 2016 (745 155 applications). More than 100 000 unaccompanied minors were taken into care by youth welfare offices between 2014 and 2016. As in 2015, most asylum seekers in 2016 came from Syria (268 795 refugees, representing 36% of all applications in 2016). The Syrian refugees were followed in 2016 by asylum seekers from Afghanistan (127 830, i.e. 17% of applications) and from Iraq (97 125, i.e. 13% of applications). Further countries of origin of refugees in 2016

⁽²⁾ The population group with a migration background consists of anyone who immigrated into the territory of today's Federal Republic of Germany after 1949, as well as all foreigners born in Germany and all persons born in Germany who have at least one parent who immigrated into the country or was born as a foreigner in Germany. This definition typically covers first- to third-generation immigrants. Data on German nationals born in Germany, whose migration background is based on the characteristics of their parents, are only collected every four years if they do not live with their parents in the same household, so they are not included in the data on persons with migration background *in a narrow sense*. (Statistisches Bundesamt 2017).

⁽³⁾ Ethnic German immigrants from Eastern Europe and the former Soviet Union (*Aussiedler* and *Spätaussiedler*). As a rule, they possess German citizenship.

⁽⁴⁾ Statistisches Bundesamt, Fachserie 1 Reihe 2.4, 2016, p. 168.

<https://www.destatis.de/DE/Publikationen/Thematisch/Bevoelkerung/MigrationIntegration/Schutzsuchende.html>

were Iran, Eritrea, Albania, Pakistan, Nigeria and the Russian Federation. In 2017, the number of applications for asylum decreased considerably (222 560 applications) ⁽⁵⁾.

People with a migration background (including refugees) are on average much younger than those without migration background (35.4 vs 46.7 average age), which has implications on the VET sector and labour market.

1.2 Economy and labour market indicators

Increased international competition, German reunification (1990) and the introduction of the Euro (2002) have all had an impact on Germany's economy and labour market. Following a slight recovery in 2004-05, economic growth receded in 2006-07. The global financial crisis of 2008 continues to influence economic growth rates and future labour market indicators. While the growth rate of GDP volume ⁽⁶⁾ was down in Germany (and Europe) in 2009, it rose to 4.1% in 2010, the highest level ever since reunification. This boom was driven by traditional exports and domestic private consumption. The growth rate of GDP volume declined again in 2012 (0.5%) but was still above the EU average (2012: -0.4%). Since 2014, the growth rate of GDP volume has been up again in Germany (2.2%) and the EU-28. In 2015 it fell to 1.7% and rose in 2017 finally again to 2.2%, but was any time below the EU average (2.3% respectively 2.4%) ⁽⁷⁾.

The employment rate per age group has slightly changed in Germany since 2008, showing a general trend of increase in employment, especially in the age group 50-64 (from 63.3% in 2008 to 76% in 2017). Overall, Germany's employment rate is significantly above the EU average for all individual age groups and education level attained (Table 3 below).

⁽⁵⁾ Germany EMN Country Factsheet 2017, European Migration Network, European Commission.

https://ec.europa.eu/home-affairs/what-we-do/networks/european_migration_network/reports/factsheets_en

⁽⁶⁾ Percentage change on previous year.

⁽⁷⁾ Source: Eurostat Date of extraction: 05.11.2018.

Table 3. **Employment rates by age group and highest level of education attained (%), 2008, 2012, 2015 and 2017**

		2008			2012			2015			2017		
ISCED Levels / Age group		15-24	25-49	50-64	15-24	25-49	50-64	15-24	25-49	50-64	15-24	25-49	50-64
EU 28	0-2	24.6	67.1	43.7	20.2	60.7	43.5	18.1	60.2	45.5	18.9	61.9	48.8
	3-4	49.1	81.8	59.2	43.3	79.3	61.1	44.0	79.6	64.4	46.1	81.0	67.3
	5-8	62.2	89.1	74.5	54.5	86.5	75.6	58.4	86.7	77.7	60.9	87.8	79.2
	No resp.	5.2	76.1	55.5	5.5	73.4	65.2	7.0	72.8	65.4	4.3	69.2	58.3
	Total	37.4	80.2	56.3	32.6	77.6	58.4	33.1	78.2	61.8	34.7	79.8	64.9
DE	0-2	34.1	61.5	45.6	43.9	62.2	51.1	30.0	62.0	54.0	30.7	61.5	58.1
	3-4	63.9	81.9	62.5	64.0	84.2	68.4	63.4	85.1	72.5	64.4	86.0	75.7
	5-8	77.6	90.4	77.0	76.4	91.3	82.1	71.7	90.5	84.1	71.5	90.2	85.9
	No resp.	25.9	75.5	54.1	5.5	64.4	64.3	27.9	67.1	62.2	20.5	57.0	62.7
	Total	46.6	81.3	63.3	46.6	83.5	69.6	45.3	83.6	73.0	46.5	83.9	76.0

No resp. = no response.

ISCED 0-2: Pre-primary, primary and lower secondary education

ISCED 3-4: Upper secondary and post-secondary non-tertiary education

ISCED 5-8: Tertiary education

Source: EUROSTAT. Date of extraction: 05.11.2018

http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_ergaed&lang=en

The labour market situation has improved in recent years. The unemployment rate has fallen steadily for all age groups in Germany since 2008. For 50-64 year-olds, this rate was 7.9% (above the then EU average of 5.1%), but it has decreased continuously since then and reached 3.1% in 2017, below the EU average (5.8%). Youth (aged 15-24) unemployment in Germany also fell from 10.6% in 2008 to 6.8% in 2017. Youth unemployment in the EU remains quite high (15.6% in 2008; 16.8% in 2017). The difference between youth unemployment rate at EU level and in Germany is particularly high for the ISCED level 3-4 (in 2017, EU: 14.8% vs DE: 4.2%, so more than three times lower), which corresponds to the qualification level after an IVET programme (incl. dual VET) in Germany and shows its high value on the labour market (Table 4).

Table 4. **Unemployment rates by age group and highest level of education attained (%)**, 2008, 2012, 2015 and 2017

		2008			2012			2015			2017		
ISCED Levels / Age group		15-24	25-49	50-64	15-24	25-49	50-64	15-24	25-49	50-64	15-24	25-49	50-64
EU 28	0-2	21.3	11.1	7.1	31.0	19.1	12.4	28.0	18.5	13.0	24.2	15.7	11.1
	3-4	13.0	5.7	5.2	20.4	8.9	6.7	18.1	8.2	6.0	14.8	6.6	4.8
	5-8	11.6	3.7	2.7	18.1	6.2	3.7	15.4	5.7	3.7	12.2	4.6	3.3
	No resp.	14.1U	5.4U	:	20.3	8.4	5.4U	19.9	7.2	4.0U	21.1	7.9	4.6
	Total	15.6	6.3	5.1	23.2	9.9	7.4	20.3	9.0	7.1	16.8	7.3	5.8
DE	0-2	13.7	17.5	14.4	11.8	14.2	10.0	11.4	13.1	8.5	11.0	10.9	6.3
	3-4	8.1	6.7	8.4	5.5	4.9	6.0	4.7	4.1	4.6	4.2	3.3	3.2
	5-8	7.0	2.9	4.1	4.4	2.2	2.5	4.4	2.4	2.2	3.7	2.1	1.8
	No resp.	:U	:U	:U	18.5	:U	:U	:U	:U	:U	32.2	:U	:U
	Total	10.6	7.0	7.9	8.0	5.0	5.4	7.2	4.5	4.3	6.8	3.7	3.1

(:) no data available; U = low reliability, No resp. = no response.

ISCED 0-2: Pre-primary, primary and lower secondary education

ISCED 3-4: Upper secondary and post-secondary non-tertiary education

ISCED 5-8: Tertiary education

Source: EUROSTAT. Date of extraction: 05.11.2018

http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_urgaed&lang=en

In 2017, most employed persons (74.5%) were working in the tertiary economic sector (mainly services), followed by 24.1% working in the secondary sector (production industry) and 1.4% working in the primary sector (agriculture, forestry and fishing) ⁽⁸⁾. The overwhelming majority of companies in 2016 were micro, SMEs, with up to 249 employees: 3.46 million enterprises (99.6%). Among these, around 3.1 million (about 90% of all companies) were micro-enterprises (up to nine employees). Only 14 630 enterprises had more than 249 employees ⁽⁹⁾. In total, 61% of the 29.1 million employees worked in micro, SMEs: micro-enterprises (1-9 employees) employed about 19% of the active persons, small enterprises (10-49 employees), approx. 23.2%, and medium-sized enterprises (50-249 employees), around 19.3% ⁽¹⁰⁾. These micro, small and middle-sized companies form the 'Mittelstand', which is playing a major role in the dual VET system by

⁽⁸⁾ Results of the employment accounts within the national accounts (VGR)

<https://www.destatis.de/DE/ZahlenFakten/Indikatoren/LangeReihen/Arbeitsmarkt/lrerw013.html>

⁽⁹⁾ https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Unternehmensregister/_inhalt.html

https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Unternehmensregister/_inhalt.html

⁽¹⁰⁾ https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Kleine-Unternehmen-Mittlere-Unternehmen/_inhalt.html

providing the most apprentice placements (1.12 million apprentices in 2016 vs approx. 450 000 in large companies, with more than 249 employees) ⁽¹¹⁾.

1.3 Educational attainment

A high proportion of people in Germany have upper or post-secondary level qualifications (57.9% in 2017 compared to an EU average of 46.1%), mainly due to the longstanding tradition of VET in the form of the dual system of apprenticeship ⁽¹²⁾. In terms of higher education (ISCED 5-8) ⁽¹³⁾, Germany has been slightly under the EU average in recent years (Table 5). However, the proportion of persons aged 25 to 64 with a low qualification level has consistently been far below the EU average (in 2017, it was at 13.5% compared to an EU-28 average of 22.5%).

Table 5. **Educational attainment of the population aged 25-64 by ISCED level (%), 2017**

Level of education			
	ISCED 0-2	ISCED 3-4	ISCED 5-8
EU 28	22.5	46.1	31.4
DE	13.5	57.9	28.6

ISCED 0-2: Pre-primary, primary and lower secondary education

ISCED 3-4: Upper secondary and post-secondary non-tertiary education

ISCED 5-8: Tertiary education

Source: Eurostat; EU Labour Force Survey, online database. Date of extraction: 06.11.2018.

http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_lfs_9903&lang=en

Since 2006, the share of early leavers from education and training has slowly decreased from 13.7% to 10.1% in 2017, slightly below the EU average of 10.6% ⁽¹⁴⁾. These young adults find it particularly difficult to secure a training position or job. Various state programmes have been developed to provide them with support and funding (Chapter 4).

The educational attainment of people with a migration background differs considerably from the rest of the population. Specifically, 13.5% of people with a

⁽¹¹⁾ BIBB Datenreport 2018, p. 206.

⁽¹²⁾ Apprenticeship is described as dual because training is conducted in two places of learning (see also Chapter 2).

⁽¹³⁾ 'Meister', 'Techniker' or 'Fachwirt'-qualifications have been lifted up to EQF level 6 and belong now to tertiary education (see also Chapter 2).

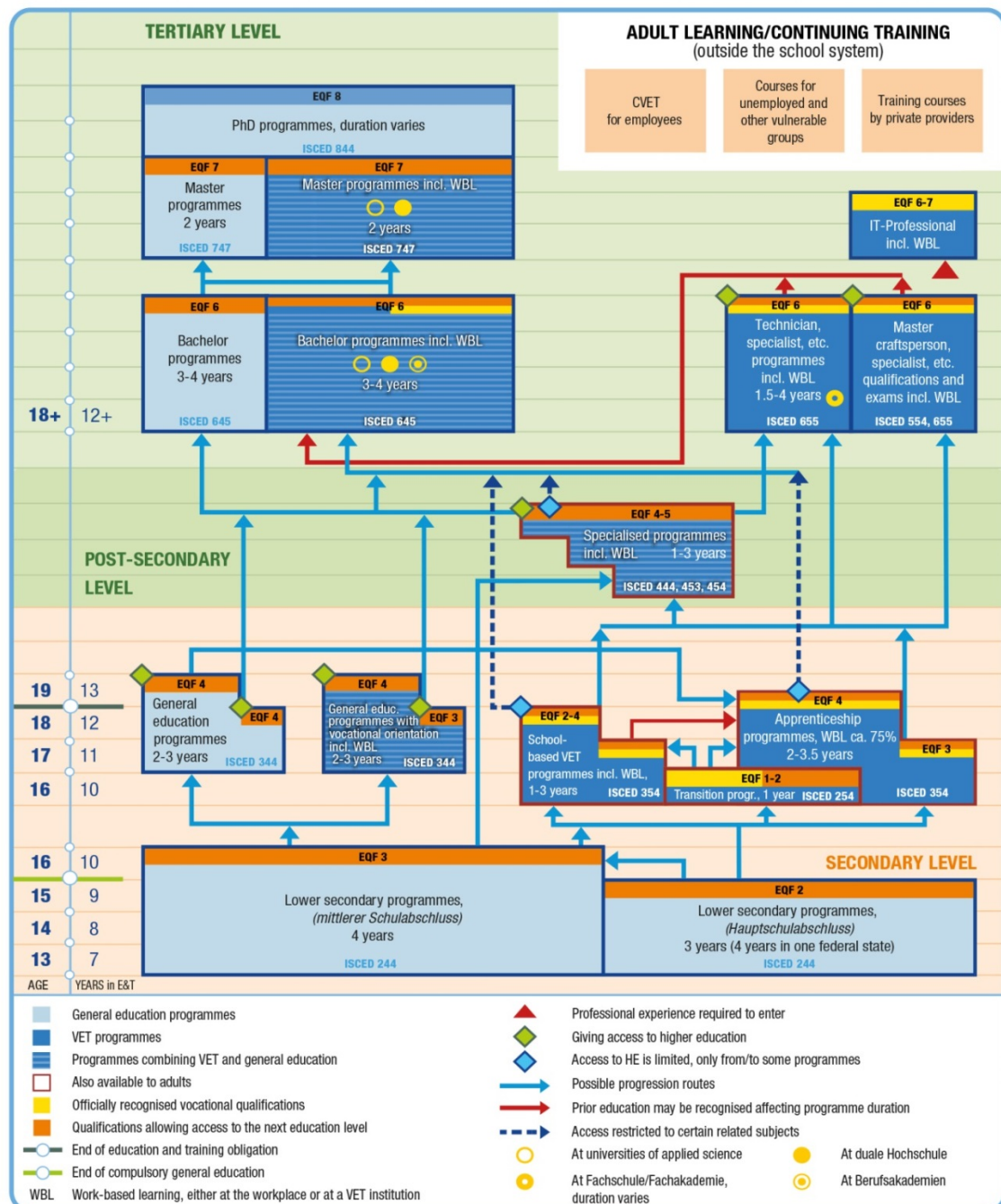
⁽¹⁴⁾ Eurostat, EU Labour Force Survey. Date of extraction: 06.11.2018.

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Early_leavers_from_education_and_training

migration background have no general school leaving qualifications (ISCED 2 and 3) and 38.8% have no VET qualification as opposed to 1.8% and 14.0%, respectively, in the rest of the population in 2016. These figures do not consider people who are still in training (Statistisches Bundesamt 2017, p. 8).

Chapter 2. Provision of VET

Figure 1. VET in the German education and training system



NB: ISCED-P 2011. This is a simplified chart, based on the unified approach used for the spotlights on VET in all EU-28 countries plus Iceland and Norway.

Source: Cedefop and ReferNet Germany.

Germany, compulsory full-time education begins at the age of six and lasts nine years (or ten years, depending on the federal state). After that, young people who are no longer in full-time education must attend a part-time (vocational) school for three years. To sum up, compulsory education exists for persons aged 6-18 and for apprentices (even if they are over 18). Following four years of primary school for all, educational paths are divided in the 'subdivided school system' consisting of lower secondary programmes (until grade 9 or 10) and upper secondary programmes (until grade 12 or 13).

Germany is one of the European countries in which learning on the job is a traditional component of the education system: the apprenticeship programme (dual system, with two learning venues: 70% work-based and 30% school-based) is the main pillar of VET. About one in two secondary school graduates choose a vocational path - mostly the apprenticeship. Progression is possible through various regulated VET programmes provided at post-secondary and increasingly at tertiary level. VET is based on cooperation between state, companies and social partners, who set together national standards and training regulations (for both learning places), leading to highly regarded vocational qualifications, allowing for a smooth transition to the labour market and a low youth unemployment.

To describe the provision of VET in the German education and training system, we have followed the main VET elements ⁽¹⁵⁾ included in the chart above. In Section 2.1, the focus is on government-regulated VET provision from upper secondary to tertiary level (IVET). In Section 2.2, other forms of VET, e.g. non-regulated CVET, the validation of non-formal learning as well as the recognition of vocational qualifications and skills acquired abroad are described. Furthermore, as an essential background to VET provision, VET governance (Section 2.3), its funding (Section 2.4) and the main information about teachers and trainers (Section 2.5) are provided.

2.1. Government-regulated VET provision

Regulated VET provision starts at the upper secondary level (Section 2.1.1), where it is the most developed, due to the well-established apprenticeship system. Progression is possible through various regulated VET programmes provided at post-secondary (Section 2.1.2) and notably at tertiary level (Section 2.1.3).

⁽¹⁵⁾ Dark blue and striped boxes

2.1.1. VET at upper secondary level

There is a variety of VET programmes at upper secondary level: in full time schools or within the framework of the dual system (apprenticeship), which is the core of VET in Germany. Some programmes offer a preparatory training; others lead to a vocational qualification allowing access to relevant occupations (Table 1). A VET qualification can also be acquired along with a bachelor's degree during dual studies programmes (i.e., at a university of applied sciences) (Section 2.1.3).

Table 6. VET programmes at upper-secondary level

Type of educational programme	Main economic sectors	Corresponding ISCED / EQF level	Balance between school- and work-based training	Average duration of studies	Transfer to other pathways	Admission requirement
Apprenticeship programme (dual system)	In every sector	354 / 4	In-company (ca. 70%) + school (ca. 30%)	Mostly 3 years	Trade and technical school, vocational academy, specialised upper secondary school, senior vocational school, school of health care	Completion of full-time compulsory education, no further requirements for access (but companies select their apprentices)
School-based VET programme (incl. WBL)	School-based VET programmes with WBL (offered at full time vocational schools, <i>Berufsfachschule</i>)	354 / 4	School based with WBL elements	At least 1 year mostly 3 years	Trade and technical school, vocational academy, specialised upper secondary school, senior vocational school, school of health care	Lower secondary school leaving certificate, leaving certificate from intermediate secondary school
	General education programmes with vocational orientation (offered at <i>Fachgymnasium</i>)	344 / 4	School based with WBL elements	2 or 3 years	University, University of applied science, University of Co-operative Education, Dual University	Leaving certificate from intermediate secondary school

Transition programmes	Pre-vocational training year (BVJ)	For orientation	254 / 2	school-based with WBL elements	1 or 2 years	Vocational training	No access requirements
	Basic vocational training year (BGJ)	For orientation i.e. economic and technical sector	351 / 3	School-based / cooperative school and practice-based	1 year	Vocational training, full-time vocational school – can be credited as 1 st year of dual VET	Completion of the general full-time compulsory education (9 years of compulsory schooling) and transfer to class 10
	Introductory training (EQ)	In every sector	254 / 2	In-company (min. 50%) + school	1 year	Vocational training	No access requirements

Source: compiled by the authors.

In 2016, slightly more students entering the upper secondary level chose the general educational pathway (53.7%) rather than vocational education (46.3%), which has been an upward trend in the past years. After leaving the secondary general education system, dual VET is the only option for graduates with the lower secondary school certificate (after grade 9) and the main option for holders of the intermediate secondary school certificate (after grade 10). However, it is even chosen by an increasing number of graduates with the upper secondary school leaving certificate (after grade 12 or 13: *Abitur*), as an alternative to tertiary education. This is mainly due to the importance of the dual system of apprenticeship pursued by the majority of VET students (68.5% of those enrolled in VET in 2017 chose the dual system ⁽¹⁶⁾).

Table 7. **Students enrolled in upper secondary education by programme orientation (values and share of total), 2016**

	ISCED 3 TOTAL (gen + voc)	ISCED 34 gen (num)	ISCED 34 gen (%)	ISCED 35 voc (num)	ISCED 35 voc (%)	out of VOC	
						wbl/school (num)	wbl/school (% voc)
EU 28	21 986 884	11 150 868	50.72	10 836 016	49.28	2 746 261	25.34
DE	2 556 653	1 373 569	53.73	1 183 083	46.27	1 030 975	87.14

Source: Eurostat; Unesco-Eurostat-OECD (UEO) Data collection on education and training systems. Pupils at ISCED level 3 by programme orientation. Date of extraction: 03.09.2018. Description: GEN = general; VOC = vocational; VOC WBL/SCHOOL = school and work-based vocational programmes
http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_ueo_enrs04

⁽¹⁶⁾ In BIBB 2018, p. 86.

2.1.1.1. Apprenticeship programmes (dual system)

As mentioned above, dual VET, which is used as a synonym for apprenticeships in Germany, is still very attractive. Particularly owing to how it links learning and work, as well as schools and companies, the dual training system in Germany appears to be a successful model for structuring the transition from school to working life. Dual VET is provided in 327 recognised training occupations ⁽¹⁷⁾. A final exam, which is performed by the chambers, completes the apprenticeship. For this task, the chambers are authorised by the state and are officially acting as a public institution. Upon passing the final examination, apprentices receive a chamber certificate to document that training has been successfully completed. This certification of qualification is fully recognised and highly trusted among employers (Chapter 3).

An apprenticeship in the dual system normally lasts three years ⁽¹⁸⁾. On average, young people take up VET at the age of 19.7 (BIBB 2018, p. 167). Compulsory education must have been completed before starting VET. There are no further formal access requirements for the dual system, but companies select their apprentices and the majority of them hold either the intermediate secondary school leaving certificate (*mittlerer Schulabschluss*) or the lower secondary school leaving certificate (*Hauptschulabschluss*). However, the share of apprentices with a higher education entrance qualification has been rising as well: in 2016, almost one in three apprentices (28.7%) was a high-school graduate (in BIBB *Datenreport* 2018, p. 132). This group followed *successively both paths* of education at upper secondary level: first the general, followed by the vocational qualification. Indeed, despite being classified as ‘upper secondary’, initial VET is also considered by high-school graduates as an alternative option to tertiary education.

The system is described as dual because training is conducted in two places of learning: companies and vocational schools. Apprentices attend part-time vocational school one or two days per week, where they are mainly taught theoretical and practical knowledge related to their occupation; they attend classes on general subjects such as economics, social studies and foreign languages. Systematic teaching at vocational school is a necessary supplement to process-oriented training within a company, which is more based on specific in-company requirements. The primary aim of training is to enable young people to acquire comprehensive vocational competence. Training programmes are designed on the principle that they should be as broad as possible and as specific as necessary.

⁽¹⁷⁾ <https://www.bibb.de/en/65925.php>

⁽¹⁸⁾ Some occupations only require two years and there are also regulations allowing a shorter training period for apprentices with an *Abitur* (the school leaving certificate allowing entry to higher education).

After finishing the apprenticeship, they should be able to fulfil their duties as employees efficiently, effectively, innovatively, autonomously and in cooperation with others. The array of competences must be demonstrated in exams regulated by law (Vocational Training Act - BBiG). Final exams are geared to vocational practice, i.e., to the work requirements and processes of the occupation. As a rule, a final exam covers four or five fields relevant to the occupation. Performance in general subjects is evaluated via school reports (Section 3.3).

Apprenticeship places are offered in both enterprises and public institutions. Enterprises enter into a contract with apprentices, where they bear the costs of the in-company training and pay the trainee remuneration. This is regulated by collective agreement and increases with every year of training, averaging about a third of the starting pay for a trained skilled worker (Section 4.1.1.1). The professional competences to be acquired through in-company training are specified in training regulations and included by the training enterprise in an individual training plan. The binding requirements of the training regulations guarantee a uniform national standard. However, SME are often unable to provide all the stipulated learning content: they may lack suitable training personnel, or, owing to their particular specialisation, may not cover all the training content themselves.

There are various ways to overcome these problems:

- (a) inter-company vocational training centres (*überbetriebliche Berufsbildungsstätten*, ÜBS) designed to supplement in-company training: education institutions offer periods in these training centres, which are often sponsored by autonomous bodies in the relevant sectors of industry. The federal ministry of education supports sponsors with investment subsidies (for buildings and infrastructure). The BIBB is responsible for promoting inter-company training centres and supporting the planning, establishment and development of these facilities. Since 2016, an additional programme is promoting the digital transformation of these training centres by funding the purchase of digital equipment as well as selected pilot projects on adaptation of teaching and learning processes ⁽¹⁹⁾;
- (b) enterprises can form joint training structures (*Ausbildungsverbünde*). There are four traditional models for this:
 - lead enterprise with partners (*Leitbetrieb mit Partnerbetrieben*): one enterprise takes the lead and bears overall responsibility for training;

⁽¹⁹⁾ <https://www.bibb.de/uebs-digitalisierung>

however, parts of the training are conducted in various partner enterprises;

- training to order (*Auftragsausbildung*): some training takes place outside the regular enterprise, perhaps in a nearby large enterprise with a training workshop, on the basis of an order and against reimbursement of costs;
- training consortium (*Ausbildungskonsortium*): several SMEs sign a cooperation agreement and work together on equal footing. They take on apprentices and train them independently. If an enterprise cannot cover a specific area of content, the apprentice moves to another enterprise (rotation principle);
- training association (*Ausbildungsverein*): enterprises establish an organisation which takes over administrative tasks such as contracting, while the enterprises conduct training. Association structures usually comprise a general meeting and an honorary committee. A statute regulates members' rights and obligations.

For teaching in vocational schools, a framework curriculum is drawn up for every recognised training occupation in accordance with the training regulations.

The repartition of apprentices according to the economic sector of occupation was as follows in 2016: 58.7% in trade and industry, 27.2% in craft sector, 8.3% in liberal professions, 2.8% in public sector, 2.5% in agriculture and 0.4% in housekeeping. With regard to new apprenticeship contracts, there has been a decrease as well since 2008, the year of the financial crisis (with one exception, in 2011, when 569 379 new apprenticeship contracts were concluded). This downward trend stabilised between 2016 and 2017: 0.6% more apprenticeship contracts were signed in 2017 than in the previous year.

Table 8. Apprenticeship contracts supply / demand

	2013	2014	2015	2016	2017	Development in 2017 compared to 2016 (%)
New Apprentice Contracts	529 542	523 200	522 162	520 272	523 290	+0.6
Vacant positions	34 625	38 269	41 592	43 478	48 937	+12.6
Still searching	83 742	81 388	81 037	80 603	80 221	-0.5
Supply	564 168	561 471	563 754	563 751	572 227	+1.5
Demand	613 284	604 590	603 198	600 876	603 511	+0.4

Source: BIBB 2018; p. 15.

The apprenticeship market continues to be characterised by increasing matching problems. It is becoming more difficult each year to match companies' training supply (2017: 572 226) with young people's demand for training positions (2017: 603 510). This is particularly clear from the fact that vacant positions (2017: 48 937, 12.6% more than 2016 and highest value since 1995) as a proportion of provision has once again increased, from 7.7% to 8.6%. On the other hand, the share of unsuccessful applicants as a proportion of the officially identified demand for 2017 is still comparatively high – but stable, at 13.3%. Once again, the skilled crafts and trades sector was particularly affected by a shortage of applicants. Many public policy measures are aiming to counteract these developments (Chapter 4).

Types of obtained school leaving qualification differ among apprentices with newly concluded training contracts. As in the past years, the largest group in 2016 was those with the intermediate secondary school leaving certificate (*mittlerer Schulabschluss*), at 42.8% (215 976). Almost 30% (144 630) of those concluding a training contract, were in possession of a higher education entrance qualification (*Abitur*). About one in four (127 686 or 25.3%) had a lower secondary school leaving certificate (*Hauptschulabschluss*). The proportion of new trainees without a school leaving certificate was with 3.1% (15 876) very low (BIBB 2018, p. 136). The absolute figures and the shares of new apprentices without a lower secondary school leaving certificate and with a lower secondary school leaving certificate have been declining since 2009. In contrast, there have been significant increases (both in absolute terms and in relation to other types of school leaving qualification) in new apprentices with higher education entrance qualifications. The proportion of newly concluded training contracts accounted for by this group rose from 20.3% in 2009 to 28.7% in 2016.

When dividing apprentices with a newly concluded training contract by business sectors, it is clear that these are correlated with different school leaving qualifications. The proportion of new apprentices with a higher education entrance qualification has increased in almost all sectors in the past years. In 2016, the highest proportions of new trainees with a higher education entrance qualification were registered in the public sector (56.2%), in trade and industry (34.8%) and in the liberal professions (28.5%). The highest shares of intermediate secondary school qualification can be identified in the areas of liberal professions ⁽²⁰⁾ (55.2%), trade and industry (42.1%), closely followed by the areas of skilled crafts, public sector and agriculture (each around 40%). Apprentices holding a lower

⁽²⁰⁾ For example: doctor, dentist, veterinarian, notary, attorney, certified accountant, tax consultant.

secondary school qualification are mostly found in the housekeeping sector (51.9%), skilled crafts (41.2%) and agriculture (29.6%).

For young people with a migration background transition from general education to VET is often difficult and lengthy (for the special case of refugees, see below). The latest (2016) BA/BIBB survey among former dual VET applicants shows that one in four (26%) young people with a migration background registered with the federal employment agency (BA) had found a placement and had begun an in-company apprenticeship. In contrast, 42% of those without a migration background had started such an apprenticeship (see also BIBB 2018, p. 326).

Regarding the refugees applying for asylum mostly since 2015, the number applying for an apprenticeship placement (with registration at an employment agency) had drastically increased from 10 253 in September 2016 to 26 428 in September 2017 (almost 5% of all registered dual VET applicants). Of the survey respondents ⁽²¹⁾, 27% had started an in-company training by September 2017 (which is similar to the corresponding share among applicants with a migration background as described above). Many respondents had joined some preparatory VET measures (e.g. pre-vocational or introductory training) or were taking part in a German language and integration class.

2.1.1.2. School-based VET programmes

In parallel to the dual system, there is a wide range of school-based VET programmes at upper secondary level (EQF levels 2-4), which differ in terms of entry requirements, focus, types and levels of qualifications they lead to:

- (a) school-based VET programmes with WBL (ISCED 354, EQF 4) are offered at full-time vocational schools (*Berufsfachschule*) and prepare students to work in many occupational areas (duration: one to three years, depending on the occupational area and specialisation and the type/level of qualification). Where these schools do not offer a full vocational qualification, attendance can be credited as the first year of training in the dual system if certain conditions are met. The entry requirement is the lower secondary school leaving certificate or the certificate obtained on completion of grade 10 (*mittlerer Schulabschluss*). Full-time vocational schools are generally regulated by state legislation (Section 2.3), with the exception of healthcare, which is subject to Federal law;
- (b) general education programmes with vocational orientation (ISCED 344, EQF

⁽²¹⁾ The BMBF has engaged the BIBB to collect data and to report on the integration of refugees in education and labour. A specific survey was carried out between September 2016 and September 2017 among refugees who had applied for an apprenticeship placement (BA/BIBB-Migrationsstudie 2016).

4) are offered at *Fachgymnasium* and last two to three years, depending on whether the learners also acquire a vocational qualification. An intermediate secondary school leaving certificate is required. These programmes usually lead to the higher education entrance qualification.

2.1.1.3 Transition programmes

Young people with social disadvantages, learning difficulties or handicap or insufficient German language skills (migrants) have different possibilities for pre-vocational education and training measures (Table 2), for example:

- (a) pre-vocational training year (*Berufsvorbereitungsjahr* – BVJ): the BVJ is a one-year course of training, usually offered full-time by schools and designed to prepare young people for the demands of vocational training. The majority of participants do not have a secondary school leaving certificate. However, this can be acquired in the course of the BVJ, thus improving the holder's prospects in the market for training positions;
- (b) basic vocational training year (*Berufsgrundbildungsjahr* – BGJ): basic vocational education can be completed either as a year at school (full-time) or in joint fashion at an enterprise and school. Successful completion of the BGJ can be credited as the first year of vocational training in the training occupations assigned to the relevant occupational field. In the BGJ, students receive basic educational knowledge in a specific occupational field (e.g., metalworking techniques, electrical engineering, business and administration);
- (c) Introductory training (*Einstiegsqualifizierung* – EQ): EQ provides young people whose prospects of being placed in VET are limited due to individual reasons with an opportunity to acquire or enhance personal and vocational competences and gives companies offering training the chance to get to know these young people. It has proved to be a 'door-opener' to apprenticeship for approx. 70% of participants.

2.1.2. VET at post-secondary level

In general, there are numerous progression routes between general education and VET and from upper secondary VET to higher education, mostly through post-secondary education. Indeed, programmes at post-secondary level aim at increasing the permeability between secondary (for holders of general intermediate secondary leaving certificate) and tertiary education, by acquiring a higher education entrance qualification. Table 9 provides an overview of the post-secondary VET programmes at ISCED level 444, some demanding practical experience as admission requirement. Post-secondary programmes at ISCED

level 454 correspond to cases having acquired *two* qualifications: a higher education entrance qualification and a dual VET qualification or two VET qualifications. However, the table below and this section concentrate on the programmes at ISCED level 444.

Table 9. **VET programmes at post-secondary level**

Type of educational programme		Main economic sectors	Corresponding ISCED level and orientation	Balance between school- and work-based training	Average duration of studies	Transfer to other pathways	Admission requirement
Specialised programmes	General education programmes with vocational orientation [at senior vocational school (<i>Berufshochschule</i> BOS)]	Economics, social affairs, design, technology	444	Senior vocational school: school-based	2 years	University of applied sciences, University of co-operative education, university	Leaving certificate from intermediate secondary school and (1) two years' successful vocational training or (2) five years' practical experience
	School- and work-based VET programmes incl. WBL [at specialised upper secondary school (<i>Fachoberschule</i> FOS)]	Economics, social affairs, design, technology	444	Specialised upper secondary school: work- (traineeship) and school-based	1 to 3 years	University of applied sciences, University of co-operative education, university	Leaving certificate from intermediate secondary school (or equivalent qualification)
	VET programmes in the health sector	Healthcare sector	453	Schools attached to hospitals, theoretical and practical training	2 or 3 years	Vocational extension school (mostly at tertiary level)	Leaving certificate from intermediate secondary school (or equivalent qualification)

NB: ISCED-P-2011

Source: compiled by the authors.

Table 10 shows that in 2016, 91.5% of post-secondary education programmes (ISCED level 4) have a vocational orientation in Germany and in the European Union as well. In Germany, there is almost an equal distribution between senior vocational schools (school-based) and specialised upper secondary schools (work- and school-based). The number of students enrolled in

such programmes has been declining in Germany in the past years: in 2013, 828 667 students were enrolled and in 2016, only 736 771. However, overall the students enrolled in these programmes (ISCED 4) in Germany represent more than 45% of enrolments in the whole EU 28.

Table 10. **Students enrolled in post-secondary non-tertiary education by programme orientation (values and share of total), 2016**

	ISCED 4 TOTAL (gen + voc)	ISCED 44 gen (num)	ISCED 44 gen (%)	ISCED 45 voc (num)	ISCED 45 voc (%)	out of VOC	
						wbl/school (num)	wbl/scho ol (% voc)
EU 28	1 622 043	137 229	8.54	1 484 815	91.46	-	-
DE	736 771	62 944	8.46	673 828	91.54	344 130	51.07

Source: Eurostat; Unesco-Eurostat-OECD (UEO) Data collection on education and training systems. Pupils at ISCED level 4 by programme orientation. Date of extraction: 06.09.2018. Description: GEN = general; VOC = vocational; VOC WBL/SCHOOL = school and work-based vocational programmes
http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrs07

2.1.2.1. General education programmes with vocational orientation

General education programmes with vocational orientation (ISCED 444) are offered at full time vocational schools (*Berufsoberschulen*; BOS) ⁽²²⁾, which do exist in several states ⁽²³⁾ and are generally regulated by state legislation. After two years of full-time education, they lead to the subject-specific higher education entrance qualification (*fachgebundene Hochschulreife*) and, with a second foreign language, to the general higher education entrance qualification (*Allgemeine Hochschulreife*). Programmes may also be offered in part-time form, with a correspondingly longer duration. Admission to these vocational programmes requires the leaving certificate from intermediate secondary school (after grade 10: *mittlerer Schulabschluss*) and at least two years' successful vocational training or at least five years' relevant practical experience. Programmes include education in technical skills, business, agronomy, nutrition and home economics, social affairs and design. Students are allocated to a programme based on the initial vocational training already completed or previous employment.

⁽²²⁾ http://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/1976/1976_11_25-RV-Berufsoberschule.pdf

⁽²³⁾ Berlin, Brandenburg, Schleswig-Holstein, Hamburg, Lower Saxony, Bremen, North Rhine-Westphalia (specialised upper secondary school, *Fachoberschule*, FOS, years 11 and 12 are the equivalent of the BOS), Rhineland-Palatinate, Baden-Württemberg and Bavaria.

2.1.2.2. School-based VET programmes with WBL

School- and work-based VET programmes (ISCED 444) are offered at specialised upper secondary schools (*Fachoberschulen*; FOS) ⁽²⁴⁾ which are generally regulated by state legislation. They cover grades 11 and 12 and build on the leaving certificate from intermediate secondary school (*mittlerer Schulabschluss*) or a qualification recognised as equivalent. Federal states may also include grade 13. Completion of grade 12 (or in some state, grade 13) leads to a subject-specific or general higher education entrance qualification. Programmes include education in technical skills, business, agronomy, nutrition and home economics, social affairs and design. Training includes classroom teaching and professional practice. Professional practice takes place during the first year of the course in the form of a traineeship at a company or equivalent institutions. Teaching takes place during grade 12 or may also be part-time with correspondingly longer duration. Applicants who hold an intermediate secondary school leaving certificate, who have completed relevant VET or who are able to demonstrate appropriate occupational experience are admitted into grade 12 of the FOS. In these cases, the duration is one year (or two years, if the school has grade 13).

2.1.2.3. Health VET programmes

Admission requirement to study at a school of healthcare is the leaving certificate from intermediate secondary school (or equivalent qualification). Large numbers of students also attend programmes offered at schools for nurses, midwives, etc. (*Schulen des Gesundheitswesens*), which include training for non-academic occupations in the healthcare sector, such as nursing and paediatric nursing, midwifery, therapeutic massage and occupational therapy. These schools are regulated by Federal law and many of them are attached to hospitals providing both theoretical and practical training. These programmes last two or three years.

2.1.2.4. Additional qualifications

Additional qualifications (*Zusatzqualifizierung*) were introduced to ensure that learning in formal, non-formal or informal ⁽²⁵⁾ context is complementary to state-recognised qualifications. Thus, any of the standard national qualifications can be

⁽²⁴⁾ http://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2004/2004_12_16-Rahmenvereinbarung-Fachoberschule.pdf

⁽²⁵⁾ Definitions by Cedefop:

- non-formal learning: embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support); non-formal learning is intentional from the learner's point of view.
- informal learning: resulting from daily activities related to work, family or leisure (not organised or structured in terms of objectives, time or learning support); informal learning is in most cases unintentional from the learner's perspective.

brought up-to-date and tailored more closely to requirements. Additional qualifications can round off an initial vocational training programme, substantially extend an initial training profile or even anticipate elements of a formal advanced training occupation.

Since the amendment of the Vocational Training Act in 2005, there is the possibility of providing so-called codified additional qualifications in the context of apprenticeship. This includes 'additional vocational skills, knowledge and qualifications (...) to supplement or broaden vocational competence' (BBiG 2005 Section 5 (2) No. 5), which are anchored in the training regulations and go beyond the training occupation profile. The training regulations are supplemented by these additional qualifications. In addition to these codified additional qualifications, which are linked to a training regulation, there are numerous additional qualifications. For the mechatronics engineers alone, there are almost 400 optional additional qualifications ⁽²⁶⁾.

However, these additional qualifications are not so much aimed at broadening a qualification profile as part of an occupation profile, but rather at subject-related additions or specialisations. In this, they differ from the codified additional qualifications, which serve explicitly the extension of the training occupation profile. One of the focuses of these non-codified additional qualifications lies in international qualifications; these include foreign language courses, stays abroad and international management. About one third of apprentices in additional qualifications receive additional training in this area.

Additional qualifications allow for a flexible shaping of in-company training with regard to the qualification requirements in the company. This enables companies to respond promptly to changing skills needs, which is becoming increasingly important due to developments in digitalisation. At the same time, it is an attractive opportunity for young people to upgrade their vocational qualifications. In terms of duration, additional qualifications listed in the AusbildungsPlus database ⁽²⁷⁾ vary significantly: the span ranges from under 40 to over 1 000 hours for obtaining an additional qualification. Most additional qualifications are distributed relatively evenly on offers lasting 40 to 500 hours. Training companies and vocational schools provide primarily additional qualifications. Furthermore, the Chambers of Commerce and Industry as well as the Chambers of Crafts and their training centers are among the major providers of additional qualifications.

⁽²⁶⁾ See AusbildungsPlus database at:

<http://www.ausbildungplus.de/webapp/suche?typ=zq&neuesuche=true>

⁽²⁷⁾ <http://www.ausbildungplus.de/webapp/suche?typ=zq&neuesuche=true>

2.1.3. VET at tertiary level

The tertiary education sector comprises various types of VET programmes and institutions, which are presented in the following table.

Table 11. **VET programmes at tertiary level**

Type of educational programme	Main economic sectors	Corresponding ISCED / EQF levels	Balance between school-based and work-based training	Average duration of studies	Transfer to other pathways	Admission requirement
Advanced vocational qualification: master craftsman, technician, specialist (assessment/certification by the Chambers)	Crafts, commerce, industry	554-655 EQF 5-7	Work-based	1 to 5 years	Bachelor programmes	IVET qualification, work experience; for level 7 qualifications: IVET qualification + advanced vocational qualification (see above) + work experience
Certified IT operative and strategic professionals (assessment/certification by Chambers) ⁽²⁸⁾	IT management (systems, business, marketing, consultant) and IT engineering (technical and business)	EQF 6-7	Work-based	Not indicated (own preparation for exam)		IVET qualification + advanced vocational qualification (as IT specialist) + work experience
Advanced vocational programmes (trade and technical schools)	Agriculture, design, technology, business, social care	655 / 6	School-based	1 to 3 years	Bachelor programmes	IVET qualification, work experience
Dual study programmes (universities, universities of applied sciences, dual university, universities of cooperative education)	In particular: engineering sciences, economic sciences/ commercial law, social affairs, administration and administration of justice, computer	645-748 6-7	Partly school and practice based	3 or up to 5 years bachelor and master programmes		Training contract and a certificate confirming higher education entrance qualification (subject-specific or general)

⁽²⁸⁾ This programme was launched more than 10 years ago. It has not been as successful as expected. More information can be found in this brochure dated 2007: <https://akademie.muenchen.ihk.de/seminare-lehrgaenge/digitalisierung-technik-it/Dokumente/Informationsbroschüre-IT-Aufstiegsfortbildung.pdf>

	science, design, mathematics, information and communicatio n technology, healthcare/ nursing.					
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NB: ISCED-P 2011

Source: compiled by the authors.

In 2016, almost one in three among 20- to 24-year-olds is enrolled in tertiary education (ISCED levels 5 to 8), which is slightly more than in 2014. Most learners are doing a bachelor programme (ISCED level 6), followed by the master's programmes (ISCED level 7). In contrast, the number of students enrolled in programmes qualifying at ISCED level 5 is very low. Some programmes of advanced vocational education are allocated to this level. So far, none of the academic two-year study programmes is leading to a formal qualification.

Table 12. **Students in tertiary education**

ISCED-2011	2015		2016	
	Number of students enrolled	Share in age group 20-24 years (%)	Number of students enrolled	Share in age group 20-24 years (%)
Level 5	394	0.0	357	0.0
Level 6	1 792 434	20.9	1 832 459	20.8
Level 7	988 753	8.3	1 013 268	8.3
Level 8	19 200	0.1	197 000	0.1
Levels 5-8	2 977 781	29.3	3 043 084	29.2

Source: Eurostat; Unesco-Eurostat-OECD (UEO) Data collection on education and training systems. Date of extraction: 10.09.2018 (educ_uoe_enrt02 + educ_uoe_enrt08) <http://ec.europa.eu/eurostat/web/education-and-training/data/database>

2.1.3.1. Advanced vocational qualifications

VET in Germany comprises three levels of advanced vocational qualifications (EQF levels 5 to 7). They differ regarding competence requirements and the related operational deployment in the companies. Admission to level 7 qualifications requires level 6 qualifications (Section 2.1.3.2), level 6 qualifications

do not require level 5 qualification, but can be acquired directly after IVET in the dual system and mostly work experience is necessary (i.e. master craftsperson, technician or specialist qualifications).

Unlike the training regulations for IVET in the dual system, these federally regulated advanced training regulations do not contain a curriculum; however, they do define and describe examinations. Other features, which must be specified in the advanced training regulations, include (§ 53 para. 2 BBiG, § 42 para. 2 HwO):

- (a) designation of the advanced qualification,
- (b) the aim, contents and requirements of the examination,
- (c) admission requirements and
- (d) examination procedure.

Admission to an examination generally requires a completed course of vocational training and/or appropriate vocational experience. These regulations are laid down by the BMBF by agreement with the competent ministries and following consultation with the primary board (*Hauptausschuss*) of the BIBB. Advanced vocational training as a master craftsperson (*Meister*) entitles the holder to practise a craft trade independently, to employ and train apprentices and opens up access to courses at craft academies, universities of applied sciences (UASs, *Fachhochschulen*) as well as universities.

Data about this programme are not fully recorded in the ISCED-97 statistics for two reasons. First, the examinations do not generally require a participation in a preparatory course. Second, even if a huge number of examinees were to participate in preparatory classes, these courses offered by the chambers are not seen as part of the education system. There is political pressure to remedy this lack of transparency in international statistics and to include all programmes that meet the ISCED-2011 level definition in the near future.

2.1.3.2 Certified IT operative and strategic professional qualifications

Similar to the above described advanced vocational qualifications, these federally regulated certified IT manager and engineer qualifications ⁽²⁹⁾ do not contain a curriculum; however, they do define and describe examinations. The assessment and the certification are under the responsibility of the Chambers. The candidates prepare themselves in a work-based environment. The qualifications are offered in the occupational sectors of IT management (systems, business, marketing, and

⁽²⁹⁾ This programme was launched more than 10 years ago. It has not been as successful as expected. More information can be found in this brochure dated 2007: <https://akademie.muenchen.ihk.de/seminare-lehrgaenge/digitalisierung-technik-it/Dokumente/Informationsbroschüre-IT-Aufstiegsfortbildung.pdf>

consultant) and IT engineering (technical and business). The admission requirements to the examination are threefold: an IVET qualification, an advanced vocational qualification (Level 1 / EQF 5: IT specialist; Level 2 / EQF 6: IT operative professional; Level 3 / EQF 7: IT strategic professional), as well as work experience.

2.1.3.3 Advanced vocational programmes

Advanced vocational programmes (ISCED 655; EQF 6) are offered at trade and technical schools ⁽³⁰⁾, which are regulated according to the state law. Entrance requirements vary by subject area: an applicant normally needs a qualification in a recognised training occupation relevant to the chosen subject and relevant work experience of at least one year, or a qualification from a full-time vocational school and relevant work experience of at least five years. Advanced vocational programmes can be followed as part-time or full-time programmes (the latter programme last between one and three years) and they lead to a state vocational qualification (e.g. educator; technician). Students adopt extensive responsibility and management functions at the workplace. Some trade and technical schools also provide programmes that lead to a formal entrance qualification for the universities of applied sciences ⁽³¹⁾. They exist for the following occupational fields: agriculture, design, technology, business and social care. They end with a final state examination under state law.

2.1.3.4. Dual study programmes

Dual study programmes (EQF levels 6, 7) are offered by universities of applied sciences (UASs, *Fachhochschulen*), the dual university (*Duale Hochschulen*), universities of cooperative education (*Berufsakademien*) as well as some universities. Around a quarter of all UAS programmes are dual study programmes. They combine two learning venues (i.e., the workplace and the education institution) and are provided in three different forms of programmes: two are regarded as initial studies and one as continuing education. The features of the two initial study programmes are:

- (a) dual study programmes with an integrated training component combine a course of study with practical training in a recognised occupation in a company. In addition to the degree, students obtain a formal IVET qualification. As a rule, enrolling in a dual study programme with a training component requires a higher education entrance qualification (*Allgemeine*

⁽³⁰⁾ http://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2002/2002_11_07-RV-Fachschulen.pdf

⁽³¹⁾ KMK resolution of 05.06.1998 in the version currently in force.

- Hochschulreife* or *Fachhochschulreife*) and an employment contract;
- (b) dual study programmes with a work experience component combine a course of study with extended practical placements with an employer (about 40-50% in-company training). Students obtain a university degree but not a recognised vocational qualification. The practical components go far beyond the practice-based semester and work placements of conventional degree programmes. As a rule, enrolling in a dual study programme with a work experience component requires a higher education entrance qualification (*Allgemeine Hochschulreife* or *Fachhochschulreife*).

The CVET dual study programmes with an employment component are primarily aimed at people who have already completed vocational or professional training and/or have a number of years of professional experience. They are designed to offer further professional development and combine a course of study with professional experience that is directly relevant to the course. No higher education entrance qualification is required. The amount of time the student spends in the classroom and at the work place is agreed in a contract between the institution, the student and the employer.

In recent years, there has been a steady increase in the provision of dual study programmes. Enterprises obtain highly qualified and motivated young workers and institutions of higher education benefit from the extensive contact with the world of work, creating a distinctive image for themselves by offering demand-based courses of study. Students obtain high-quality training that improves their labour market and career prospects, which benefits them both financially and in terms of time.

The initial dual study programmes have the following characteristics:

- (a) alternation between theory phases in the institution of higher education or academy and practical phases in the training enterprise;
- (b) a regulation about the practical training;
- (c) students have the status as a student-employee (a) or an mostly unpaid-trainee (b), based on a contract with the company;
- (d) closely interwoven learning activity in the company and acquisition of theoretical knowledge in the higher education institution / academy;
- (e) close coordination and cooperation between the higher education institution and company.

The most common combination is a business management programme plus commercial training, as well as an engineering or computer science programme combined with technical training. There is a wide range of possible subject areas, such as insurance, mechatronics, commercial law, health economy, mathematics

and media informatics. The three most common types of providers of dual study programmes are described below.

Universities of applied sciences (UAS)

The course structure and organisation of teaching and study in UAS (*Fachhochschulen*) emphasise application and focus on the requirements of occupational practice. Out of 395 institutions of higher education in 2016/17, there were 222 UAS (56%), both private and public ⁽³²⁾. They offer bachelor and master study programmes.

Studying in a UAS requires a higher education entrance qualification (*Abitur* / *Hochschulreife*), a subject-specific secondary school leaving certificate confirming such a standard, or a secondary school leaving certificate, depending on the specific programme. Bachelor degree courses usually run for six semesters, dual study programmes mostly eight semesters, with an additional four semesters for a master's degree. UASs specialise in courses of study in the following fields: engineering sciences, economic sciences/commercial law, social affairs, administration and administration of justice, computer science, design, mathematics, information and communication technology and healthcare/nursing.

In 2016, UAS provided two-thirds (69%) of all initial dual study programmes ⁽³³⁾. The numbers of students and the programmes of study offered vary widely, leading to particular subject and regional profiles for individual UASs.

The Baden-Wuerttemberg Cooperative State University (dual university)

The Baden-Wuerttemberg Cooperative State University (*Duale Hochschule Baden-Württemberg*, DHBW) is the first university in Germany to integrate academic studies and work experience and provided 13% of all initial dual study programmes ⁽³⁴⁾. It developed from a university with cooperative education status. The DHBW combines the structure of a university of cooperative education – particularly, the participation of training companies and institutions – with the dual learning principle on academic level. The conversion to dual university status means the new institution can award doctorates. One of the main innovations is the mandate to establish cooperative research projects. Collaboration with partner

⁽³²⁾ Bildungsbericht 2018; [accessed: 10.09.2018]

<https://www.bildungsbericht.de/de/bildungsberichte-seit-2006/bildungsbericht-2018>

⁽³³⁾ AusbildungPlus 2016 [accessed: 10.09.2018]

https://www.bibb.de/dokumente/pdf/duales_studium_in_zahlen_2016.pdf

⁽³⁴⁾ AusbildungPlus 2016;

https://www.bibb.de/dokumente/pdf/duales_studium_in_zahlen_2016.pdf

[accessed on 10.09.2018]

enterprises and institutions can thus be intensified, and steps can be taken to make academic studies more up-to-date.

Universities of cooperative education

Universities of cooperative education (*Berufsakademien*) are higher education institutions providing academic-focused VET that is simultaneously geared towards practice through a form of dual training. They exist in Baden-Württemberg, Bavaria, Saxony, Thuringia and Berlin. Enterprises bear the costs of in-company training and pay the trainee remuneration for training, including for theoretical training in the vocational academy. Depending on the law of the relevant state, enrolling in a vocational academy requires both a training contract and a higher education entrance qualification (*Hochschulreife*), subject-specific secondary school leaving certificate confirming such a standard or secondary school leaving certificate qualifying for UASs (*Fachhochschulreife*). In certain states, applicants without one of these certificates but with a vocational qualification may be granted admission. After concluding a training contract, applicants are registered with the University of Cooperative Education by their training enterprise. The programme leads to bachelor qualifications. The most common study courses are in economics, engineering and social affairs. State law normally lays down a period of study of three years.

Training in universities of cooperative education takes place partly in accordance with study or training plans drawn up by agreement between the education institution, enterprises and social partners, and also partly through vocational-academic training and examination directives in accordance with framework criteria from the relevant ministries. In 2016, the universities of cooperative education provided 12% of all dual and initial study programmes ⁽³⁵⁾.

2.2. Other VET forms: continuing vocational training

Beside advanced vocational qualifications (Section 2.1.3.1) which are regulated, there is a wide range of continuing VET provision, which is less regulated but monitored, allowing to present data on training providers, target groups and participation. In the last decade, mechanisms have been developed to increase transparency and quality in CVET provision.

⁽³⁵⁾ AusbildungPlus 2016. [accessed on 10.09.2018]
https://www.bibb.de/dokumente/pdf/duales_studium_in_zahlen_2016.pdf

Publicly promoted CVET is targeted at various groups, from unemployed people with no school-leaving or vocational qualifications to executives. The aims, content and duration of courses vary accordingly.

Continuing in-company training, i.e. CVET related to company or job related needs organised by the enterprise, may take place inside or outside a company, but the company usually pays for provision and it usually takes place during regular working hours. There are a large number of collective agreements containing various regulations on the provision of continuing education and training in different forms, models and features. Approx. 25% of all working contracts in Germany are covered by collective agreements that include regulations for CVET ⁽³⁶⁾.

2.2.1 Training providers, target groups and participation

The most important providers are private-sector educational/training establishments. Others include public-sector establishments, chambers, establishments of trade and professional associations, social welfare/church establishments and universities/colleges. The figures from 2017 show that private institutions made up the largest proportion of active continuing training providers, accounting for 40% of the total. Of these, 26% were commercial enterprises and 14% operated on a non-profit making basis. Institutions run by major societal groups (churches, political parties, trade unions, foundations, associations, clubs and similar) represent 18% of the provider spectrum. These are followed by adult education centres (16%), institutions with close links to trade and industry (9%) and vocational schools (8%). Taken together, the remaining types of providers account for a tenth of all providers (these are: company-based training institutes: 4%; institutes of higher education/universities of applied sciences, academies: 3% and others: 2%) (BIBB 2018, p. 364).

In 2016, 53% of companies offered continuing education (based on the results of the *IAB-Betriebspanel* - BIBB 2018, p. 349). Accordingly, the majority of CVET takes place within companies or with their support. The participation rates of companies rise with their size: 98% of companies with 500 and more employees offer CVET followed closely by companies with 50 to 499 employees (90% in 2016). Further, 68% of companies with 10 to 49 employees provide CVET against only 44% of companies with less than 10 employees.

According to the results of the Adult Education Survey (AES), 38% of 25- to 64-year-olds participated in continuing education in 2016 (compared to 39% in

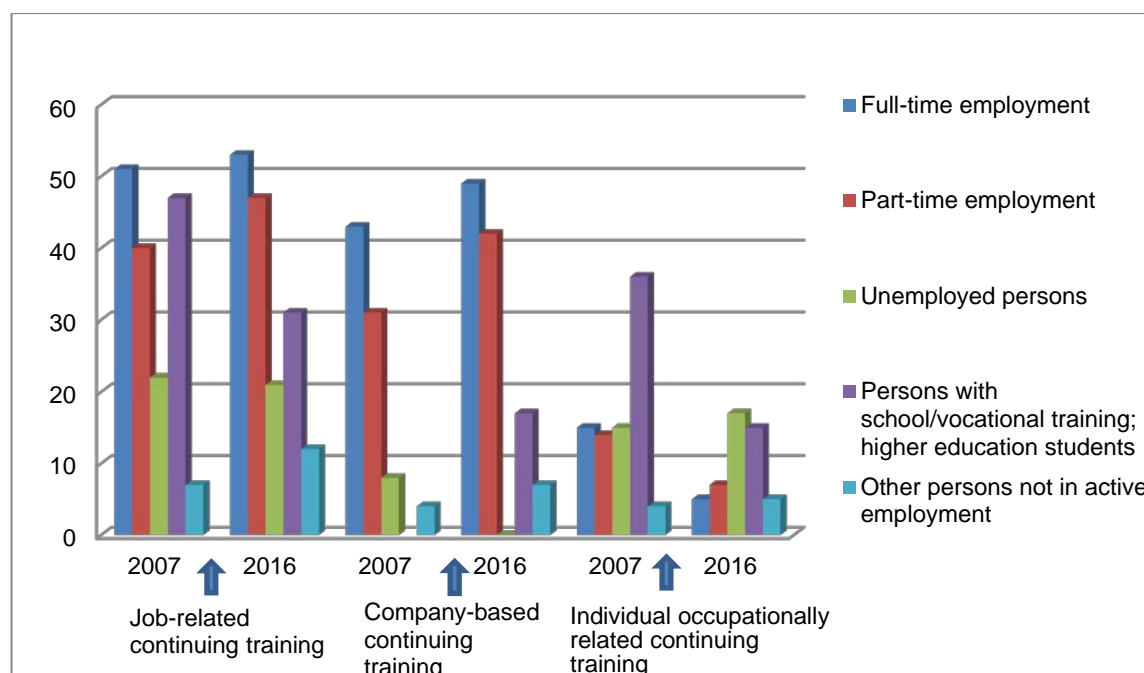
⁽³⁶⁾https://www.bibb.de/dokumente/pdf/stst_foko_120309_arbeitskraeftebedarf_im_demografischen_wandel_bahnmueeller.pdf

2014) (BIBB 2018, p. 341). As shown below, participation rates in job-related continuing training differ by employment status: full-time employees have the highest rate (53% in 2016), followed by part-time employees (47% in 2016). 31% of apprentices and students took part in occupational continuing education compared to 21% of registered unemployed persons and 12% of other unemployed persons (e.g. retirees, housewives). Compared to 2007, the participation rates in job-related CVET has increased in 2016 among the labour force but decreased among persons still in education (general or VET) (BIBB 2018, p. 345 and BIBB 2016, p. 299).

In 2016, the participation rate in job-related continuing training was highest (49%) in the age group 35-49 years. The youngest age group (25-34 years) followed at 42%, with a significant drop compared to 2014 (49%). The participation rate among the oldest age group (50-64 years) was the lowest at 38% (BIBB 2018, p. 345). Participation rates rise with the level of school leaving certificate and with the level of vocational qualification. The migration background also influences the participation rates in job-related CVET: 46% among Germans without migration background, 35% among Germans with migration background and only 27% among foreigners (BIBB 2018, p. 345).

Information on quality assurance mechanisms in CVET are provided in Section 3.4.3.

Figure 2. Participation rates in occupationally related continuing training by employment status 2007 and 2016 (%)



Source: author's illustration based on the Adult Education Survey (AES); BIBB 2018, p. 345

2.3. VET governance

The Vocational Training Act (BBiG) ⁽³⁷⁾ defines in detail, which institutions are in charge of organising, developing and monitoring VET in Germany.

2.3.1. Role of federal government

VET is based on nationally recognised occupations and vocational training regulations, which guarantee a national standard. The federal government is responsible for designing the dual system training content for the occupations it has recognised. The nationally binding recognition of the training occupations ensures that the basic principles agreed with industry and the states are taken into account, and that training for a recognised occupation adheres to the regulations adopted by the federal government. The federal government's responsibilities are not limited to implementing joint agreements; it also takes independent measures to promote dual training.

These measures include permanent support programmes (Chapter 4) as well as special funding programmes, which, for example, aim to create additional training positions in less popular regions. The federal government provides funding for special research projects to ensure VET is constantly updated. The Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung*, BMBF) is responsible for general VET policy issues. These include, for example, the Vocational Training Act (*Berufsbildungsgesetz*, BBiG), the annual VET report, the implementation of programmes to improve VET and the legal supervision and funding of the Federal Institute for Vocational Education and Training (BIBB).

Nationally, the Federal Institute for Vocational Education and Training (*Bundesinstitut für Berufsbildung*, BIBB) is the core institution for consensus building between all parties involved in VET. It conducts research on in-company training and provides services and advice to the federal government and VET providers. Its four-party main board advises the government on fundamental issues of in-company vocational training and is involved in setting standards and designing training regulations.

It is the task of the federal ministries responsible for each occupational field to recognise individual occupations requiring formal training. In the vast majority of cases, this is the Federal Ministry of Economic Affairs and Energy (*Bundesministerium für Wirtschaft und Energie*, BMWi). BMBF approval is always

⁽³⁷⁾ https://www.bibb.de/dokumente/pdf/bmbf_berufsbildungsreformgesetz_en.pdf

required. The BMBF thus provides coordination and guidance for VET policy for all training occupations.

2.3.2. Role of state government

According to the Constitution, responsibility for school education lies with the state ministries of education and cultural affairs. Their ministers participate in a standing committee (*Kultusministerkonferenz*, KMK) to ensure a certain degree of uniformity and comparability, especially in school and higher education policies. KMK decisions are only recommendations, and only become legally binding when passed by the individual state parliaments. The states have vocational training committees, with equal representation of employers, employees and the highest state authorities. They advise the state governments on vocational training issues in schools and also contribute to designing schemes that support disadvantaged youths and provide opportunities for additional qualifications that require school-based training.

2.3.3. Role of social partners

The dual system is based on a close cooperation between employers, trade unions and the government. Social dialogue and codetermination are important for reforms to be accepted. The social partners – employers and trade unions – have considerable influence on the content and form of VET to ensure their requirements and interests are taken into account. Responsible action by all participants – beyond each group's particular interests – is a precondition for the efficiency of the dual system. Their representatives are members of the BIBB's main board together with the federal and state governments and participate in their vocational training committees and those of the competent bodies.

Organising apprenticeship/dual training requires a complex but clear division of responsibilities. Employers and unions play a central role in initiatives for change, because the structure of vocational training must meet the demands of industry. If there is a need for change – e.g., in qualification requirements – representatives of the federal government, state governments, employers and trade unions agree on the basic principles. Such work on the training regulations and framework curricula is ongoing and continuously coordinated among the partners (Chapter 3).

2.3.4 Role of competent bodies

Besides the actors from the state and social partners in Germany the so called 'competent' bodies' (*zuständige Stellen*) play a crucial role. They include

professional chambers as well as various federal and state authorities. Their tasks are ensuring the suitability of training centres; monitoring training in enterprises; advising enterprises, trainers and apprentices; establishing and maintaining lists of training contracts; organising the exam system and holding final exams. Each competent body has a tripartite vocational training committee whose members represent employers, trade unions and teachers. These committees must be informed and consulted on all important VET issues and decide on regulations for implementing VET.

As self-governing bodies, the chambers of industry and commerce, the chambers of crafts and the appropriate professional boards for the liberal professions have all been assigned public tasks as 'competent bodies' in dual training (see above). Training advisers from the chambers verify the capacity of companies and ability of trainers to train and advise both companies and apprentices. They receive training contracts, check, register, and monitor them and provide counselling services. The chambers also oversee the overall organisation of exams by fixing dates and establishing exam boards.

2.4. VET funding

In Germany, initial and continuing VET is based on mixed financing by various public and private bodies. These include the BMBF, BMWi, the Federal Ministry of Labour and Social Affairs (BMAS), the Federal Employment Agency (BA), the states and their ministries of employment, economic, education or cultural affairs, the European Union, local authorities, companies, unions, chambers, associations, private institutions and, lastly, individuals themselves. In this respect, financing for IVET and continuing general and vocational education differs quite substantially from the schools and universities sector, which benefits from relatively comprehensive public funding.

2.4.1. Funding of IVET

In the dual system, in-company training is usually financed by the individual enterprise, i.e., an enterprise decides whether or not it will offer training and in which occupations. It decides how many apprentices it will take on, and how much it wants to spend on training in general. Enterprises enter into a contract with apprentices and pay them remuneration. This is regulated by collective agreement and increases with every year of training, averaging about a third of the starting pay for a trained skilled worker. Average apprentice remuneration across Germany

for 2017 was EUR 876 gross per month (Section 4.1.1.1; BIBB Datenreport 2018, p. 273).

According to the most recent BIBB calculations, based on a representative study for the apprenticeship year 2012-13, the gross costs (i.e., apprenticeship costs without returns) were around EUR 25.6 billion. Companies' net costs for apprenticeship were around EUR 7.7 billion, meaning gross and net costs have somewhat increased (by approx. EUR 2 billion each) since the last study based on 2007 data. A new representative study is under way for the apprenticeship year 2017/18 with first results to be expected end of 2019 (BIBB 2018, p. 280). Employers invest on average EUR 18 000 per apprentice per year (62% for remuneration and social benefits for apprentices; 23% for salaries of trainers; 10% other costs and 5% equipment). Companies also have benefits in providing apprenticeship, and estimate that 70% of investment is refinanced by the productive contribution of apprentices during the training (Section 4.2.1).

SMEs, in particular skilled crafts companies, are important training suppliers. It might happen that they are unable, or not fully able, to provide all the facets of training required by regulations. This is primarily due to the increasing division of labour in working processes, increasing specialisation or accelerated technological change. The limited suitability of such enterprises as training providers is compensated by supplementary external training measures in inter-company vocational training centres (*überbetriebliche Berufsbildungsstätten*, ÜBSs, and in the skilled trade sector, ÜLUs) or through training structures (*Ausbildungsverbünde*) (Section 2.1.1.1). ÜBSs are operated mainly by public law bodies (municipalities, chambers and guilds) or non-profit private law bodies (trade associations). There is a mixed financing, with subsidies from the federal employment agency (BA), the federal government (capital grants from the BMBF) and the states added to the resources of the responsible body. Guidelines for funding ÜBSs and their development into competence centres entered into force in 2009. These guidelines ensure greater legal security and transparency for applicants as well as greater flexibility in funding and they extend ÜBSs' scope of action. Funding is offered for the modernising and restructuring of inter-company training centres to adapt them to changing education and training policy and economic conditions, as well as the challenge of digitalisation.

The school-based element of dual vocational training is financed by state and local authority public funds: EUR 3 billion in 2017 for 1 550 public vocational schools providing part-time VET for apprentices ⁽³⁸⁾ and EUR 1.85 billion for steering, monitoring and other support measures. The states bear the costs of

⁽³⁸⁾ BIBB Datenreport 2018, p. 277.

internal school affairs (e.g. supervision of schools, laying down of curricula, teacher training, teachers' pay), and the local authorities are responsible for financing external school affairs (e.g. construction, maintenance and renovation of school buildings, ongoing management, procurement of teaching and learning resources). The total public expenditures for dual VET amount to approx. EUR 4.85 billion compared to EUR 7.7 billion net costs of dual VET for companies.

Training in full-time vocational schools outside the dual system (public funding in 2017: EUR 5.4 billion ⁽³⁹⁾ and special measures to promote VET, such as support programmes (often co-financed by ESF funds) to create additional training places for specific target groups or in less popular regions, are financed out of the Federal or state budgets ⁽⁴⁰⁾ (Chapter 4). The federal government also provides funding for special research projects to ensure that VET is constantly updated (for more details on public IVET expenditures ⁽⁴¹⁾ and on the funding structures of IVET in the dual system ⁽⁴²⁾, please refer to Annex 1). The VET-related expenditure of the federal employment agency applies to both pre-VET and IVET (i.e. grants for young people). The data do not include the amounts spent on promoting the transition from IVET into the labour market, since these are classified as employment policy measures.

2.4.2. Funding of CVET

Enterprises, the state, the federal employment agency (BA) and private individuals themselves are involved in financing continuing VET. Federal, state and local authorities make funding available from their budgets primarily for CVET of public sector employees.

Most expenditure is related to continuing company- or job-related training. However, some spending on general, political, cultural and academic research education and training is also included, since such areas cannot always be clearly separated. The federal government contributes to financing continuing training via funding programmes from various ministries (Chapter 4). The federal states participate in financing continuing training in a similar fashion. Acting together with local government, and in some case municipal associations, the federal states continue to finance adult education centres (*Volkshochschulen* – VHSs), teacher training institutes and other continuing training institutes ⁽⁴³⁾.

⁽³⁹⁾ BIBB Datenreport 2018, p. 277.

⁽⁴⁰⁾ Specific information on all public funding activities is available on <http://www.foerderdatenbank.de/> [accessed 11.10.2018].

⁽⁴¹⁾ See Table concerning public expenditure on IVET (BIBB 2018, p. 278).

⁽⁴²⁾ See Annex 1, Figures 5 and 6.

⁽⁴³⁾ See Table concerning public expenditure on CVET (BIBB 2018, p. 404).

The Continuing Vocational Training Surveys (CVTS) provide data concerning the enterprises' expenditure on CVT courses for their employees. Initial results from CVTS5 (2015) are available on the costs of continuing education courses in Germany (Statistisches Bundesamt, 2017a). The direct course costs (payments to external training providers, personnel costs for internal training staff, travel expenses, costs for rooms and equipment) and personnel absence costs for participants in training courses were determined. In 2015, companies in Germany invested EUR 683 per employee in continuing education courses. Of this, EUR 361 was for direct costs and EUR 322 for personnel absence costs of CVET participants. Compared to 2010, this is an increase of EUR 66 for the total costs, EUR 44 for the direct costs and EUR 22 for personnel absence costs. On a percentage basis, this represents between 7% and 14%. The total cost per participant was EUR 1 793 (direct costs: EUR 947, personnel absence costs: EUR 846). Here too, between 2010 and 2015, there was an increase in course costs of 11 to 18% (BIBB 2018, p. 355).

2.5. VET teachers and trainers

The focus of this chapter is on teachers and trainers in the dual system, since it is the core element of IVET in Germany, but it also provides a brief description of teachers in full-time vocational schools and on CVET teachers and trainer (further information here) ⁽⁴⁴⁾.

2.5.1. Teachers and trainers in IVET

In the dual system, there are VET school teachers and in-company trainers, with different responsibilities and duties. VET school teachers are teaching theoretical knowledge (general and occupation-related). There are two categories of teachers: vocational school teachers and practical work teachers (*Werklehrer*). General subjects teachers must have a university degree at the master level (EQF level 7), and for occupation-related subjects, there are special teachers for vocational practice. Vocational school teachers are trained under the jurisdiction of the federal states. Their training has a two-phase structure: first a course of studies at a university, then the preparatory practical service, also called the probationary period (*Referendariat*). The process is regulated by a framework

⁽⁴⁴⁾ Hensen, K.A.; Hippach-Schneider, U. (2016). *Supporting teachers and trainers for successful reforms and quality of vocational education and training: mapping their professional development in the EU – Germany*. Cedefop ReferNet thematic perspectives series.
http://libserver.cedefop.europa.eu/vetelib/2016/ReferNet_DE_TT.pdf

agreement adopted by the Conference of Ministers of Education and Cultural Affairs (*Kultusministerkonferenz*, KMK) in 1995 and amended in 2013, the Framework Agreement on the training and examination for teaching at the Secondary Level II (vocational subjects) or for vocational schools.

In-company trainers are in charge of training the apprentice at the workplace according to the training regulation for the specific occupation and the individual training plan. According to the Vocational Training Act (*Berufsbildungsgesetz BBiG*, 2005), only in-company trainers who possess pedagogical and professional aptitude are eligible to train, meaning that they have special competences. The aptitude of the training staff is guaranteed by the competent chamber that registers them (e.g. chambers of industry and commerce, chambers of skilled crafts). These competent bodies are responsible for adopting examination regulations and setting up examination boards to conduct aptitude examinations for trainers, according to the Trainer Aptitude Regulation (*Ausbilder-Eignungsverordnung*, AEVO, last amended in 2009). To support in-company trainers in the acquisition of pedagogical and technical/professional competence, the chambers and other educational providers offer different types of courses. The BIBB recommends taking a 115-hour course to prepare for the AEVO examination.

Table 13. **Types of teachers and trainers in IVET**

Type of training	Type of staff
Dual system of training	Trainers (instructors) or master craftspersons within companies (certified educators/trainers in professional education, certified educators/trainers in initial and continuing vocational education, including the responsible VET managers in large companies). VET teachers in vocational schools, two categories: 1. University-trained teachers for job-related theory and general education subjects; 2. <i>Werklehrer</i> (master craftspersons or technicians with additional further training) imparting practical skills. Instructors and trainers within inter-company VET centres (ÜBS).
Special VET for disabled persons leading to dual system diplomas	VET teachers/trainers within private institutions
Full-time vocational schools	VET teachers in vocational schools (see above)
Learning facilitators	Youth workers in training schemes for the disadvantaged, training counsellors in the chambers, vocational guidance counsellors employed by the federal employment agencies, etc.

Source: compiled by the authors.

The large majority of IVET trainers are skilled workers, journeymen or foreperson. They engage in training part-time directly at the workplace. However, any company carrying out apprenticeship training has at least one employee who is the designated responsible (full-time) trainer and has proven his aptitude to take over this task by successfully passing the examination according to the AEVO. Most full-time trainers also hold an advanced qualification certificate as master craftsperson. In-company trainers have an important role by helping the apprentices to develop a professional identity and occupational profile together with a strong identification with their company. Furthermore, in small enterprises, the trainer is a crucial role model for the following generation of employees.

The portal 'www.foraus.de' ⁽⁴⁵⁾ is the biggest trainer forum, offering information on the organisation of company-based training through online learning modules and exchange forums for VET experts. It contributes thereby towards ongoing quality development and improvement of in-company training. As part of the 'Digital Media in VET' programme ⁽⁴⁶⁾ of the initiative VET 4.0, the first 'Digital Learning' transfer networks in VET (DigiNet) were launched in October 2017. The federal states, who are responsible for the continuing professional development of VET school teachers, have also taken up the challenge of digitalisation with the initiative "Vocational schools 4.0" ⁽⁴⁷⁾ and the "Digital Pact for Schools" ⁽⁴⁸⁾ in cooperation with the Federal government.

2.5.2. Teachers and trainers in CVET

There is a wide variety of professionals acting as teachers or trainers in non-formal CVET. No common standard exists for what constitutes a CVET teacher or trainer. Their formal qualifications vary widely as does their occupational status, from retired or unemployed to qualified employees in training institutions. If formal advanced vocational training takes place in public sector establishments (e.g. trade, and technical schools, colleges), the training, employment and activities of the teaching staff are based on the criteria laid down in the relevant state legislation for teaching staff.

⁽⁴⁵⁾ <https://www.foraus.de/html/>

⁽⁴⁶⁾ <https://www.qualifizierungdigital.de/index.php>

⁽⁵⁰⁾ <https://www.qualifizierungdigital.de/de/berufsschule-4-0-kmk-benennt-zentrale-handlungsfelder-in-der-beruflichen-bildung-3016.php>
<https://www.qualifizierungdigital.de/de/digitalisierung-der-berufsschulen-bvlb-fordert-gesamtstrategie-und-qualifizierungsoffensive-3915.php>
https://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2017/2017_12_07-Berufliche-Schulen-4_0.pdf

⁽⁴⁸⁾ <https://www.bildung-forschung.digital/de/der-digitalpakt-schule-kommt-2330.html>
<https://www.bmbf.de/de/wissenswertes-zum-digitalpakt-schule-6496.html>

Chapter 3. Shaping VET qualifications

This chapter describes the methods used to anticipate future skills needs on the labour market before explaining how and by whom qualifications are designed and updated. Further, it describes the assessment and validation processes of prior learning, either formal or non-formal, and acquired either in Germany or abroad. The various aspects of quality assurance in shaping VET are highlighted as well.

3.1 Anticipation of future skills needs

Systematic recording and research of future skills needs was initiated in the 1999 resolutions by the Alliance for Jobs, Training and Competitiveness (*Bündnis für Arbeit, Ausbildung und Wettbewerbsfähigkeit*) and implemented within the subsequent initiative for early identification of skills needs launched by the BMBF. Its most important resource is the research network FreQueNz ⁽⁴⁹⁾. The network includes several research institutions, an education organisation, the BIBB, the Trade Union Confederation (DGB) and the Employers' Organisation for Vocational Training (KWB).

The BIBB monitors new skills requirements using different and complementary approaches:

- (a) qualification and occupational fields projections (QuBe): the BIBB and the Institute for Employment Research (IAB) are working together to develop forecasting model calculations on labour market developments by 2025. This study breaks new methodological ground by tracing the routes between occupations learned and those actually adopted (occupational flexibility). Longer-term developments in occupational fields and qualifications can now be displayed in a more differentiated manner. This makes it possible to take necessary action at an early stage to improve the match between supply and demand in the labour market ⁽⁵⁰⁾. The projections show, for instance, areas where a considerable shortage of skilled workers may occur and which skills levels are at risk of being affected by unemployment ⁽⁵¹⁾;
- (b) company surveys help build a comprehensive picture of technological and organisational developments and the associated skills requirements. Such

⁽⁴⁹⁾ <http://www.frequenz.net/> [accessed 19.09.2018]

⁽⁵⁰⁾ <https://kooperationen.zew.de/dfgflex/links/datensaetze-deutschland/bibbiab-erhebungen.html> [accessed 19.09.2018]

⁽⁵¹⁾ https://www.bibb.de/en/qube_datenportal.php [accessed 19.09.2018]

surveys are conducted regularly among the companies represented on the BIBB panel. Known as the reference company system (*Referenz-Betriebs-System*, RBS), these are more than 2 000 training and non-training firms which vary in size, sector (e.g. industry, services, crafts), legal form, length of time in operation and main occupations (of their employees). There are also surveys in selected sectors geared towards particular fields of work. These yield sufficiently differentiated and empirically verified information on the requirements in individual occupations ⁽⁵²⁾;

- (c) the VET 4.0 initiative 'Effects of digital innovation on vocational training' ⁽⁵³⁾ was launched in 2016 by BMBF and BIBB. It includes various projects, such as the research initiative *Skills, qualifications and competences for the digitized work of tomorrow*, the preliminary examination of the potential restructuring of IT occupations, and the programme *Digital transformation in inter-company vocational training centres (Überbetriebliche Bildungsstätten – ÜBS) and competence centres*. The outcomes will determine the changes needed for appropriate qualification profiles, training regulations and curricula ⁽⁵⁴⁾;
- (d) job advertisement analyses yield empirically verified information on the demand for skilled workers in the job market and the (ideal) qualification profiles desired by companies ⁽⁵⁵⁾;
- (e) advertiser surveys determine whether vacancies have been filled and, if not, why not ⁽⁵⁶⁾;
- (f) surveys of guidance staff generate expertise on in-company strategies for change and skills development ⁽⁵⁷⁾;
- (g) representative surveys of people in employment ascertain their perceptions of expertise requirements, job profiles, working conditions and continuing education and training needs ⁽⁵⁸⁾;

⁽⁵²⁾ <https://www.bibb.de/de/12471.php> [accessed 19.09.2018]

⁽⁵³⁾ <https://www.bibb.de/en/49603.php>

⁽⁵⁴⁾ https://www2.bibb.de/bibbtools/tools/dapro/data/documents/pdf/at_78154.pdf
<https://www.bibb.de/en/49603.php>

⁽⁵⁵⁾ <https://www.bibb.de/arbeit-im-wandel> [accessed 19.09.2018]

⁽⁵⁶⁾ <https://www.bibb.de/arbeit-im-wandel> [accessed 19.09.2018]

⁽⁵⁷⁾ <https://www.destatis.de/DE/Startseite.html> [accessed 19.09.2018]

<https://expertenmonitor.bibb.de/index.php> [accessed 19.09.2018]

⁽⁵⁸⁾ <https://www.destatis.de/DE/Startseite.html> [accessed 19.09.2018]

<https://www.bibb.de/arbeit-im-wandel> [accessed 19.09.2018]

<https://www.bibb.de/de/11148.php> [accessed 19.09.2018]

<https://de.statista.com/> [accessed 19.09.2018]

- (h) regular surveys of continuing education providers gather data on the implementation, reception and modifications to courses, along with experience and assessments of trends in training establishments;
- (i) structural and longitudinal studies of CVET courses listed in the KURS database yield information on changes and trends in provision.

These BIBB research activities focus on changes in existing fields of work or the emergence of new fields, and the accompanying development in qualification requirements, including the factors which influence these. In addition to quantitative assessment, the BIBB's qualification development also identifies qualitative trends. The BMBF also supports the development of a 'labour market barometer' (*Arbeitsmarktbarometer*), a future-oriented labour market monitoring system⁽⁵⁹⁾. The states and several regions pursue individual early identification activities (e.g. regional monitoring of qualification developments, skill needs surveys). Social partners are also involved in early identification, mainly in the context of modernising initial and further training regulations (Section 3.2). All these activities help ensure that VET adapts to and meets qualification needs. Investigations into skill needs and qualification development are also carried out by:

- (a) sector-specific associations, such as the Association of Engineers and the German Association of Information Technology, Telecommunications and New Media (BitKom);
- (b) the Institute for Employment Research⁽⁶⁰⁾;
- (c) several foundations, such as the Hans-Böckler Foundation⁽⁶¹⁾, Friedrich-Ebert Foundation⁽⁶²⁾, Konrad-Adenauer Foundation⁽⁶³⁾ and the Bertelsmann Foundation⁽⁶⁴⁾;
- (d) other stakeholders.

Below is an example of data on qualification needs forecasting extracted from the QuBe Data Portal⁽⁶⁵⁾, an interactive database application. Its purpose is to illustrate the results of the BIBB/IAB qualification and occupational fields

⁽⁵⁹⁾ <https://www.iab.de/de/daten/arbeitsmarktbarometer> [accessed 19.09.2018]

⁽⁶⁰⁾ <https://www.iab.de/de/befragungen.aspx> [accessed 19.09.2018]

<https://www.vdi.de/presse/publikationen/> [accessed 19.09.2018]

https://www.bitkom.org/de/markt_statistik/806.aspx [accessed 19.09.2018]

⁽⁶¹⁾ <https://www.boeckler.de/index.htm> [accessed 19.09.2018]

⁽⁶²⁾ <https://www.fes.de/> [accessed 19.09.2018]

⁽⁶³⁾ <https://www.kas.de/> [accessed 19.09.2018]

⁽⁶⁴⁾ <https://www.bertelsmann-stiftung.de/cps/rde/xchg/bst> [accessed 19.09.2018].

⁽⁶⁵⁾ https://www.bibb.de/en/qube_datenportal.php Accessed on 20.09.2018

projections (QuBe Project; mentioned above) and show possible development pathways for labour supply and demand.

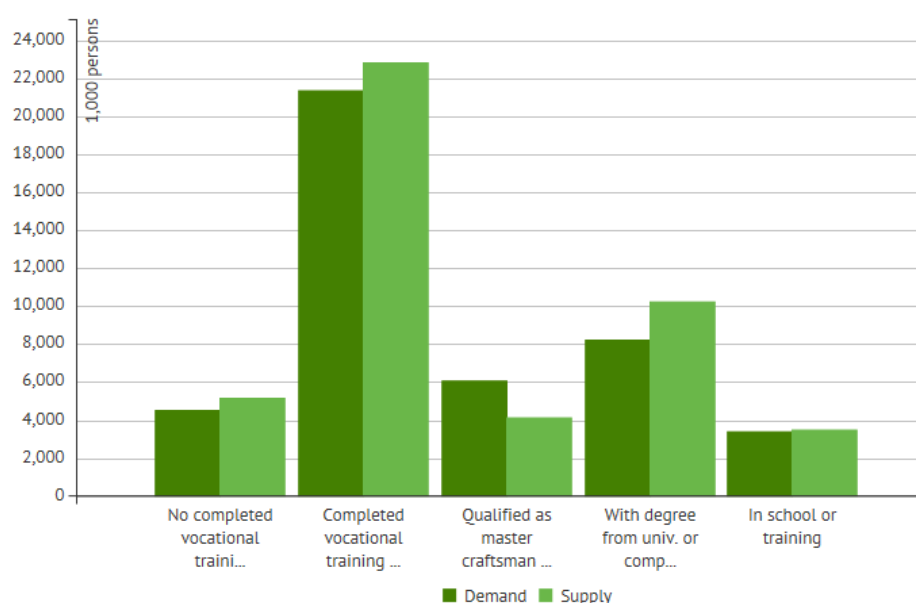
The following chart and table show the projection of demand and supply for different qualification levels on the labour market in 2025 (projection possible until 2034). According to this projection for 2025, the need for skilled workers with a completed IVET qualification will remain the most needed level of qualification on the labour market with a share of about 50% (Figure and Table below). Supply and demand are almost balanced at this level. The need for tertiary level qualification for highly complex tasks will have increased but will remain under 20%. In this case, the supply will tend to be too high in comparison to the demand. The next more needed level of qualification (about one in six persons) for complex tasks (qualified master craftsman or technician) is the only category where the supply is significantly lower than the demand. This is why advanced vocational training should be supported (Chapters 2 and 4).

Figure 3. BIBB-IAB qualification and occupational field projections



BIBB-IAB Qualification and Occupational fields projections

Basis Projection - persons - 2025



Table

QUALIFICATIONS, REQUIREMENTS	LABOUR SUPPLY, DEMAND	
	Labour demand	Labour supply
	persons (proportion of %)	persons (proportion of %)
No completed vocational training or vocational school or unskilled/semiskilled tasks	10.36	11.24
Completed vocational training or vocational school or skilled tasks	49.07	49.86
Qualified as master craftsman or technician or complex tasks	13.92	8.98
With degree from univ. or univ. of appl. science and doctorate or highly complex tasks	18.88	22.34
In school or training	7.77	7.57

Source: BIBB_IAB Qualification and Occupational fields projections (<https://www.bibb.de/en/11727.php>): 4th Wave (Basis projections). Database enquiry from QuBe Data Portal (Federal Institute for Vocational Education and Training). Database enquiry at 20.9.2018 14:54:59
The content is licensed under Creative Commons-License 4.0 International (see <https://www.bibb.de/cc-lizenz>).
The presented values of 2015 or later are values of projections.

3.2 Designing qualifications

This section describes the shaping of qualifications in the dual VET system (apprenticeship), which is the predominant form of IVET in Germany (70% of participation in dual VET programmes vs 30% of participation in full-time school-based VET programmes). A key element of dual VET is training occupations (*Ausbildungsberufe*) and the corresponding regulations. These form the basis for in-company training and are complemented by the respective framework curricula from the school-based part of apprenticeships. They comprise VET standards, occupational characteristics, a two- or three-year training plan and examination regulations. In-company training for young people under 18 is only permitted in recognised training occupations. The Vocational Training Act defines the requirements that these training occupations must meet, thus ensuring binding quality standards and the protection of minors (BIBB, 2017a). Since it is a federal government responsibility to decide on these training occupations, they are called 'state-recognised training occupations'.

Another central feature of the VET system is the close partnership between employers, trade unions and the government. The employers and the unions assume responsibility through their codetermination in shaping VET. Without this codetermination, social partners would be unwilling to take responsibility. This connection forms the basis of a working 'public-private partnership' (PPP).

3.2.1 Developing standards

Training regulations are issued for recognised training occupations by the relevant ministry, usually the Federal Ministry for Economic Affairs and Energy (BMWi), in agreement with the Federal Ministry of Education and Research (BMBF). These form the legal framework and contain minimum standards for the in-company part of initial training for the individual occupations (BIBB, 2017a).

The development of new training regulations and framework curricula (or the adaptation of existing ones to meet changing vocational practices) follows a standardised procedure, involving the federal government, state governments, employers, trade unions and vocational education researchers (BIBB 2017a).

The Vocational Training Act (BBiG) stipulates that training regulations shall specify:

- (a) the name of the training occupation;
- (b) the duration of training – which shall not be less than two and not more than three years;
- (c) the training occupation profile, i.e., what a learner is expected to know, understand and be in a position to do;
- (d) the framework training curriculum – a guide to structuring the learning process in terms of time and content;
- (e) the exam requirements.

These key points, also referred to as 'benchmarks', form the basis for a proposed revision or development of a new occupation. Once a proposal has been submitted to the relevant ministry, training regulations are drawn up in three steps:

1) Defining the 'benchmarks':

These are set in a meeting ('an application interview') at the relevant ministry (in most cases the BMWi) in which the social partners and the federal and state governments participate;

2) Elaboration and coordination:

Training regulations for the enterprises and framework curricula for vocational schools are prepared and coordinated. Social partner umbrella associations are asked to designate experts to design the training occupation together with

the BIBB. The work on the training regulation framework curricula is coordinated with the work on the corresponding framework curricula for vocational schools drawn up by state representatives to ensure they complement each other (BIBB 2017a);

3) Adoption of the regulation:

The relevant federal/state coordinating committee (KoA) approves the new training regulation and the school framework curriculum. The committee comprises representatives from the state ministries responsible for VET, the BMBF and the ministries responsible for the respective training regulations, usually the BMWi (BIBB 2017a). In general, the training regulations offer enough flexibility to adapt to new technologies and to meet changing demands on training companies, because they are formulated in a broad sense, also with regard to digitalisation.

Between 2008 and 2017, new regulations were drafted for 126 training occupations, 114 of these were updates, 12 were newly introduced (BIBB 2018, p. 76).

3.2.2 Shared responsibilities

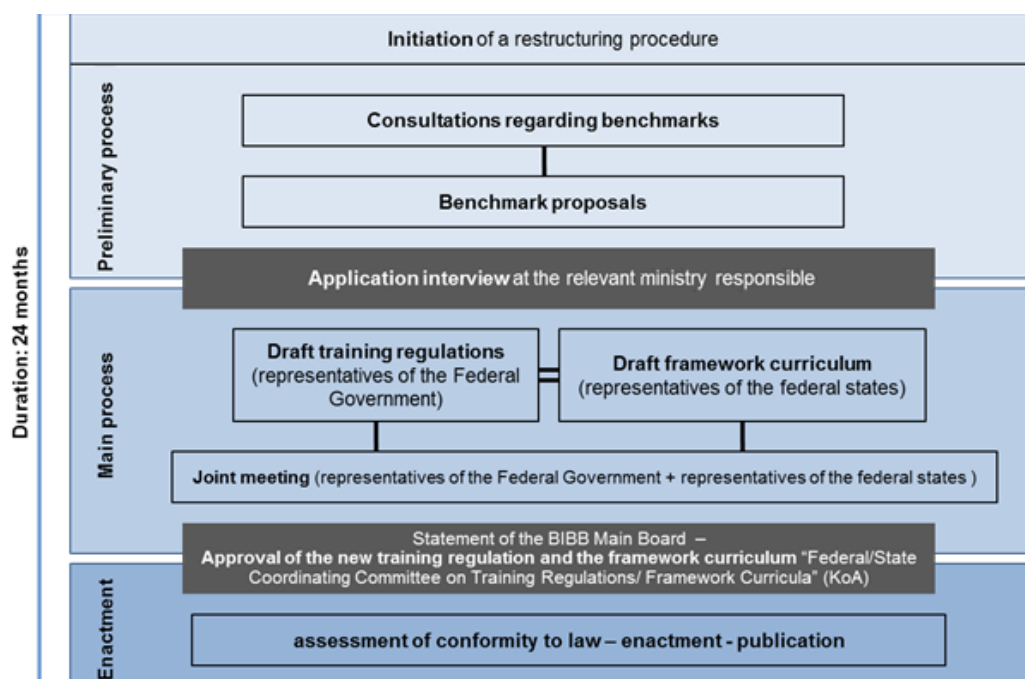
Cooperation based on mutual trust is essential between government and social partners. Employers and trade unions jointly formulate the requirements for the occupational standards. All co-operation related to VET is based on consensus; no regulations concerning initial or further VET may be issued against the declared will of either of the social partners. As a rule, the initiative to update the content or structure of a training occupation or to develop an entirely new occupation comes from industry associations, from the top-level employer organisations, from trade unions or the BIBB. After hearing the views of all parties involved, the responsible federal ministry decides whether to proceed in consultation with the state governments, since they are responsible for the school regulations and curricula (school-based part of apprenticeships). In many cases, BIBB issues an opinion or, particularly when larger scale revisions are being considered, conducts research before the ministry takes its decision. The BIBB provides the platform for this process and also coordinates and moderates it.

The competent federal ministry ⁽⁶⁶⁾ commissions the BIBB to draw up the new training regulation involving the social partners and the state governments. The federal and state governments have agreed to limit the duration of the development process to around a year. The date when the new regulation is

⁽⁶⁶⁾ Usually the Federal Ministry of Economic Affairs (BMWi).

supposed to enter into force is normally set in the meeting that starts the process ('application interview'). Development of the training regulation content and the design of the corresponding framework curriculum for the school-based part of the programme occur in parallel. The latter is the task of the states, with one of them taking the lead. The content development phase is followed by a joint meeting between the federal and state governments. This meeting ensures correlation between the two curricula. The agreed draft training regulation is subsequently submitted to the BIBB board, which then formally recommends the federal government to enact the training regulation.

Figure 4. **Procedure for updating of training regulations**



Source: author's illustration following Barbara Lorig *et al.* in: bwp, No. 20, June 2011 http://www.bwpat.de/ausgabe20/lorig_et_al_bwpat20.pdf [accessed: 19.09.2018].

3.3 Recognition of prior learning

This section describes the assessment and validation processes of prior learning, either formal or non-formal (e.g. through the regulated final exams organised by the chambers), and acquired either in Germany or abroad (through the so-called recognition process).

3.3.1 Assessment within formal learning: final exams

Dual VET is provided in 327 recognised training occupations ⁽⁶⁷⁾. A final exam, which is performed by the chambers completes the apprenticeship. For this task, the chambers are authorised by the state and are officially acting as a public institution. Upon passing the final examination, apprentices receive a chamber certificate to document that training has been successfully completed. This certification of qualification is fully recognised and highly trusted among employers.

Final exams are geared to the work requirements and processes of the relevant occupation. As a rule, a final exam covers four or five fields relevant to the occupation. Performance in general subjects, such as languages and mathematics, is evaluated within the framework of school reports. Depending on the occupation, these exams take various forms. Duration may vary, especially in assignments that take the form of a work sample and/or work task, but should not be less than one and not exceed seven hours overall (excluding preparation and post-processing) . For written assignments, a period of two hours is usually allocated. Oral exams usually last 30 minutes.

Enterprises and vocational schools conduct training, but the chambers ('competent bodies', see Vocational Training Law BBiG) are responsible for the exams. For this purpose, they must establish exam committees for each occupation with at least three members (one representative each for employers and employees and a vocational school teacher). The certificate is issued by the chamber. The exam structure is laid down by the related training regulations which apply nationwide and specify a uniform standard.

In 2016, 431 667 apprentices took the final exams ⁽⁶⁸⁾. The success rate was 92.6%, and after retaking the exam by those who first missed, even 99.4% in total. The repartition of exam participants according to the economic sector of occupation was as follows: 63.3% in trade and industry, 23% in craft sector, 8% in liberal professions, 2.7% in public sector, 2.6% in agriculture and 0.4% in housekeeping.

⁽⁶⁷⁾

https://www.bibb.de/dokumente/pdf/verzeichnis_anerkannter_ausbildungsberufe_2018.pdf

⁽⁶⁸⁾ BIBB Datenreport 2018, p. 162.

3.3.2 Validation of non-formal learning

External candidates to final exams

The most important tool for assessing non-formal learning outcomes is admission to final examinations under Section 45 (2) of the Vocational Training Act (*BBiG*), known as the '*Externen-Prüfung*' (examination for external candidates, i.e., those not involved in a formal vocational training programme). Under this provision, people can be admitted to a final examination for a recognised occupation requiring formal training (training occupation) if they furnish evidence that they have been employed in the relevant occupation for a period at least one and a half times as long as prescribed for the period of initial training.

Credit can be obtained for a higher level of general educational attainment, such as the entrance qualification for specialised upper secondary school (*Fachoberschulreife*), which shortens the period of employment for which evidence must be produced. A previous relevant IVET programme in a different training occupation can also be credited towards the required periods of employment.

In 2016, 5.9% of all final examinations for a recognised occupation were external examinations, almost identical with the previous year's figure. There is, however, considerable variation in the proportions of external examinations between individual fields. By some distance, housekeeping is the area where external examinations are most significant for acquiring a vocational qualification, with just below 45.1% of candidates in the reporting year taking external examinations. In contrast, external examinations are virtually irrelevant for craft trades and liberal occupations, at 1.2% and 1.3%. Between these two extremes, other figures include 4% in the public sector, 7.4% in trade and industry and 11.9% in agriculture (BIBB 2018, p 164).

Project to set up a validation system

The 'ValiKom' project ⁽⁶⁹⁾, agreed between the Federal Ministry for Education and Research (BMBF) and the national organisations of German chambers (DIHK and ZDH), runs since 2015 onwards. ValiKom is considered as the reference project to set up a validation system in Germany. It addresses adults who acquired skills and competences through work but lack a formal qualification, including those who wish to access further training. The approach refers to the prevailing training regulations and occupational profiles, and leads to certificates (*Gleichwertigkeitsfeststellung*) expressing the extent to which the skills demonstrated are equivalent to those normally gained under the Vocational

⁽⁶⁹⁾ <http://www.bildungsspiegel.de/news/weiterbildung-bildungspolitik/17-valikom-chancen-fuer-menschen-ohne-berufsabschluss>; www.validierungsverfahren.de;

Training Act. The participating chambers of industry, commerce and trade started piloting in April 2017. Interim results were presented to a broad public at a conference in Berlin in December 2017 ⁽⁷⁰⁾. The result of this reference project in developing a validation system will be a handbook with process description, admission criteria, instruments, certificate of validation and recommendations.

3.3.3 Assessment and recognition of foreign vocational qualifications

The Vocational Qualifications Recognition Act (BQFG), introduced in April 2012, provides individuals with the right to have their foreign-acquired qualifications matched to a German qualification by an appropriate authority. Depending on the sector, assessment and recognition of foreign occupational qualifications is carried out by IHK Fosa ⁽⁷¹⁾ or lead chambers (*Leitkammern*). The implementation of the Recognition Act is monitored and documented in a yearly report ⁽⁷²⁾. In June 2017, the report evaluated the first five years of implementing the Act.

Information and guidance are essential to success in the recognition process. The federal government has established a range of comprehensive services, such as the 'Recognition in Germany' website ⁽⁷³⁾, the counselling network of the 'Integration through Qualification (IQ)' programme and the 'Working and Living in Germany' telephone hotline, a project run jointly by the Federal Employment Agency and the Federal Office for Migration and Refugees (BAMF). In case of missing or incomplete documentation of the acquired qualification, a skills analysis ⁽⁷⁴⁾ can help to demonstrate professional competences in a practical way (e.g. via work sample, work test at a company or interview). A BMBF project with the association of German chambers of commerce and industry to have recognition consultants provide personal consultancy for people interested in having their qualifications recognised while still in their countries of origin (ProRecognition) started at the end of 2015. In addition, the funding and residency options available for upskilling training where a foreign qualification has not been judged fully equivalent to a German qualification were substantially expanded in 2015.

The federal government's law on assessing professional qualifications has proven an effective instrument in helping people with qualifications acquired outside Germany to integrate into the labour market and in securing a supply of skilled workers. Between 2012 and 2017, 111 500 applications for recognition

⁽⁷⁰⁾ <https://www.valikom.de/fachtagung/content/impressionen/>

⁽⁷¹⁾ www.ihk-fosa.de

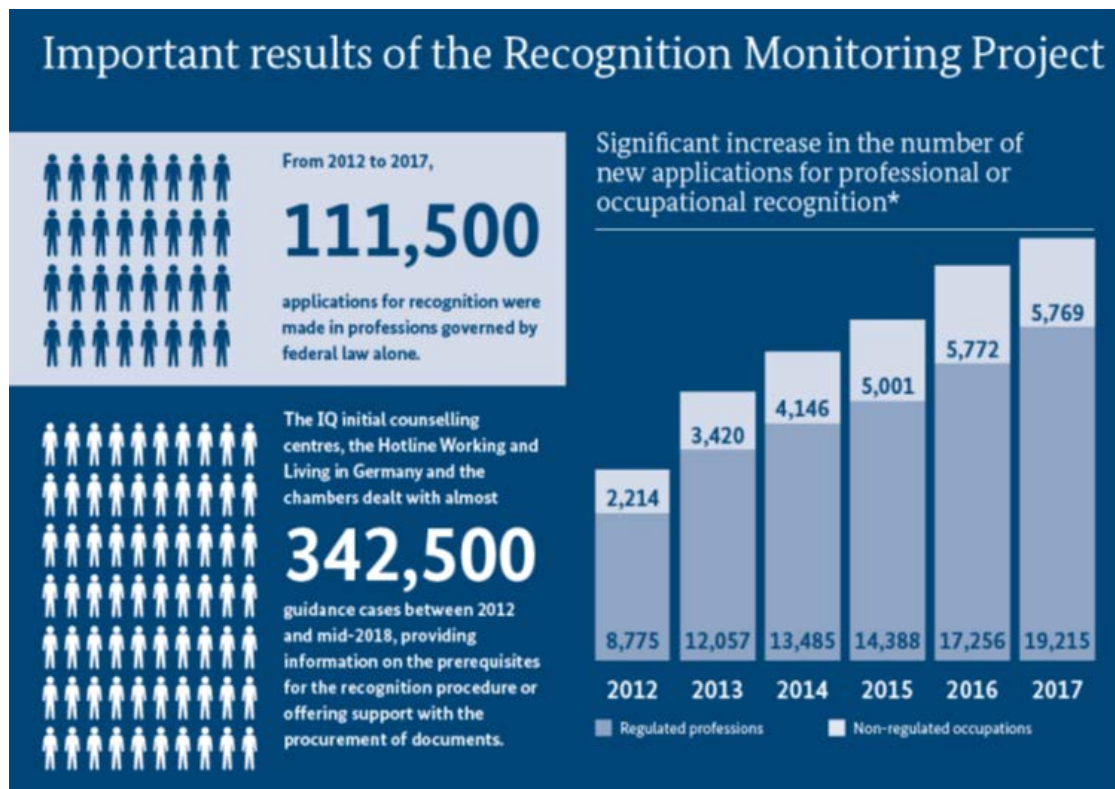
⁽⁷²⁾ <https://www.bibb.de/en/68882.php>

⁽⁷³⁾ <https://www.anerkennung-in-deutschland.de/html/de/> [accessed: 11.09.2018]

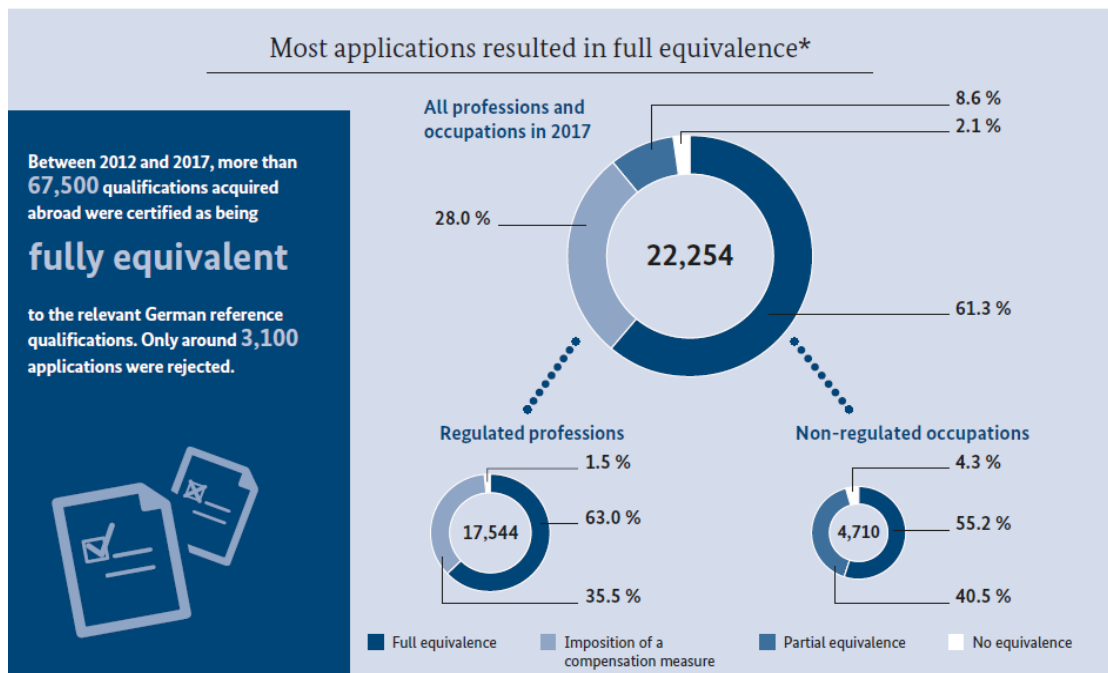
⁽⁷⁴⁾ <https://www.anerkennung-in-deutschland.de/html/en/skillsanalysis.php> [accessed: 12.09.2018]

were made in professions governed by federal law alone. About three fifth of these qualifications acquired abroad (67 500) were certified as being fully equivalent to the relevant German reference qualifications. Most of the qualifications recognised were in the regulated professions, especially in healthcare (nurse, doctor).

Figure 5. **Results of the recognition monitoring project**



* For data protection reasons, all figures (absolute values) from the official statistics are rounded to a multiple of 3 in each case.



Percentage figures were calculated on the basis of the non-rounded values. No data is available for Bremen for the year 2015. For this reason, information from 2014 has been used for this particular federal state. For Hamburg and Schleswig-Holstein there is a light underreporting for healthcare professions in 2016. For more information check: www.anerkennung-in-deutschland.de/daten-und-berichte

Source: BIBB; BMBF (2018). *Fact sheet – Anerkennung in Zahlen 2018* [Recognition in numbers 2018]: <https://www.anerkennung-in-deutschland.de/images/content/Medien/2018-factsheet-anerkennungsgesetz-en.pdf>

3.4 Quality assurance

Three overarching principles are significant in terms of gaining an understanding of quality assurance in VET. These are the dual principle, the occupation principle (*Berufsprinzip*), and the principle of consensus:

- (a) the dual principle combines learning in the work process with learning at a vocational school and at the same time facilitates the acquisition of occupational experience;
- (b) the occupation principle (*Berufsprinzip*) is based on certification, which is binding and recognised across the country. It affords the opportunity to exercise a multitude of occupational activities;
- (c) the principle of consensus guarantees proximity to the labour market as well as transparency and acceptance of training occupations via the involvement of the social partners, the Federal Government and the federal states in the development of national training standards.

Laws, ordinances and recommendations stipulate nationally-binding minimum standards for company-based training (in: BIBB 2017, Quality assurance of company-based training in the dual system in Germany, p. 7).

Important instruments of quality assurance in VET are highlighted below: national standards based on the VET law, monitoring of initial and continuing VET learning, and finally the referencing of the German qualification framework (DQR) to the EQF, allowing more transparency and comparability of qualifications within the EU.

3.4.1 VET law as basis for quality assurance

The Vocational Training Act (*Berufsbildungsgesetz, BBiG*) and the Crafts Code (*Handwerksordnung, HWO*) describe the required standards for training facilities and trainers, training regulations and examinations. Training regulations are revised every few years to keep pace with rapid technological and organisational change ⁽⁷⁵⁾. In addition, the framework curriculum required for the school section of dual education and training is regularly revised by the standing conference of the Länder Ministers of Education and Cultural Affairs (KMK). Compliance with quality assurance requirements by initial VET providers is monitored by the local school authorities. Quality assurance approaches are based on quality frameworks, educational standards, centralised exams, monitoring and benchmarking exercises and school inspection. In some cases, for example *Baden-Württemberg Landesinstitut für Schulentwicklung*, specialised agencies for quality development are in charge of supervising the vocational schools.

As company-based VET is a core part of the German dual system, employers are important stakeholders in quality assurance in initial VET ⁽⁷⁶⁾. The Federal Association of German Employer Associations (BDA) has a key role in VET policy, including developing training regulations and setting minimum standards for company-based initial VET. The local chambers of industry and commerce and chambers of crafts and trades usually monitor regulations on training facilities and trainers.

3.4.2 Monitoring and data for evidence-based VET policy

The BMBF publishes an annual report on VET, providing a wealth of information and analysis on various aspects of the development of VET. It is accompanied by the BIBB data report which brings together data from different sources (own data,

⁽⁷⁵⁾ In the period from 2007 to 2017, 135 occupations (more than a third of all 327 recognized occupations) were modernized, while 16 occupations have been created.

⁽⁷⁶⁾ Quality assurance of company-based training in the dual system in Germany, BIBB 2017.

data from federal statistical office, statistical offices of the states, federal labour agency, Institute for Employment Research) on training entrants and on the outcomes of training (such as share of employed learners, occupation obtained after training). The report sets the basis for policy decisions on VET, including programme funding. Several other projects also inform VET provision:

- (a) the federal employment office (BA) and BIBB conduct surveys with school leavers and job applicants on a regular basis, in order to research transitions to VET;
- (b) the BIBB carries out a Transition Study ⁽⁷⁷⁾;
- (c) every two years, the national education report analyses developments of the education system, including VET;
- (d) the German educational panel study (NEPS) investigates educational returns, competence development during lifelong learning and transitions from VET to the labour market.

3.4.3 Quality assurance in CVET

In CVET, quality assurance is mandatory for providers receiving public funding. Accreditation of CVET providers and programmes is done by private certification bodies according to criteria set out in the ordinance regulating accreditation and certification in continuing training. This ordinance (*Anerkennungs- und Zulassungsverordnung - Weiterbildung – AZWV*) was introduced in 2004 to improve competition and transparency in vocational continuing education as promoted by the federal employment agency (*Bundesagentur für Arbeit*). The employment agencies entrusted external certification bodies with the inspection of continuing education providers. The 2004 ordinance was revised in 2012 (AZAV): the education and placement vouchers issued by the employment agencies may only be redeemed by certified providers, for certified measures, in accordance with the social security code (*Sozialgesetzbuch SGB III*). Amongst other things, providers must prove that they apply a recognised quality assurance system (Annex 2, p 92).

Since 2008, the Federal Ministry of Education and Research (BMBF) has been funding regular checks of CVET providers through an independent foundation ⁽⁷⁸⁾. The aim is to develop comparative training tests that can complement existing quality assurance systems. Test results are published to enhance awareness among providers that accept vouchers of credit for

⁽⁷⁷⁾ Last BIBB Transition Study in 2011: <https://www.bibb.de/de/9039.php>

⁽⁷⁸⁾ <https://www.test.de/thema/weiterbildungsberatung/>

education/training of the importance of quality in the measures they provide. BIBB has prepared a quality checklist ⁽⁷⁹⁾ to help find a CVET offer and provider of good quality. BIBB, together with the German Institute for Adult Education (DIE), operates the online platform *wbmonitor* ⁽⁸⁰⁾ which is dedicated to supporting CVET in Germany. Since 2001, it has conducted a yearly survey of public and private CVET providers to gather information on practitioners' views on current topics and problems in CVET as well as to monitor developments in the labour market ⁽⁸¹⁾.

3.4.4 German Qualifications Framework – DQR

The national qualifications framework for lifelong learning in Germany (*Deutscher Qualifikationsrahmen für lebenslanges Lernen, DQR*) ⁽⁸²⁾ has eight levels and is based on learning outcomes. It is developed as a transparency instrument without providing any legal duties or rights, neither for individuals nor for education providers or enterprises. The DQR was referenced to the European qualifications framework (EQF) in 2012 and was given official status in May 2013. All levels are open for VET qualifications, with three-year apprenticeships leading to level 4.

Participants in the DQR/EQF referencing process included the KMK, representatives from the BMBF and the Federal Ministry of Economic Affairs, the Confederation of Skilled Crafts, the Federal Association of Employer Associations, the Trade Union Confederation and the BIBB. To coordinate the development of the DQR, the BMBF and the KMK established a specific coordination group, which became a coordinating agency (with representatives of both the national and state governments: B-L-KS DQR) ⁽⁸³⁾ when the DQR came into force. At working level, a task force including all relevant stakeholders and experts in the fields of general, higher and vocational education take steps to develop and implement the DQR.

Since 2013, the DQR has been updated yearly - last in August 2018 ⁽⁸⁴⁾ - with newly allocated qualifications (either new or modernised) from regulated IVET or AVT. In 2016, general education qualifications were assigned to Level 2 (lower secondary school leaving certificate), Level 3 (intermediate secondary school leaving certificate), and Level 4 (higher education entrance qualification). Thus, in addition to the equivalence of vocational and higher education, the equivalence of vocational and general education was made visible. Furthermore, criteria and procedures to include non-formal learning in the DQR are being discussed.

⁽⁷⁹⁾ <https://www.bibb.de/veroeffentlichungen/en/publication/show/8596>

⁽⁸⁰⁾ <https://wbmonitor.bibb.de>

⁽⁸¹⁾ <https://www.bibb.de/de/79521.php>

⁽⁸²⁾ <https://www.dqr.de/>

⁽⁸³⁾ See also <https://www.dqr.de/content/2322.php> [accessed 26.09.2018]

⁽⁸⁴⁾ <https://www.dqr.de/content/2866.php> [accessed on 26.09.2018]

The comparability of general education and VET is expressed, for instance, in the fact that qualifications from the academic sector and VET have been allocated to DQR levels 6 and 7 (including Bachelor, *Meister* [master craftsperson], *Fachwirt* [specialist], and *Fachschule* [full-time vocational school] degrees such as *Techniker* [technician] and IT professional) ⁽⁸⁵⁾. This nuance is particularly important to understand, since:

- (a) medium-level VET qualifications ('skilled workers') make up a large share of those held by the working population and are a strong pillar of Germany's economy;
- (b) access to many occupational fields which require higher education in other countries is achieved via vocational training;
- (c) the share of higher education graduates in the workforce is therefore lower than in other European countries;
- (d) advanced vocational training (AVT) qualifications such as master craftsperson and technician are of comparatively higher importance. Initial and advanced VET are closely linked and support each other.

In order to adequately cover the particular characteristics of the German education and training system, the DQR develops the learning outcome oriented approach of the EQF by focussing on the German concept of 'vocational action competence': a holistic and integrated approach to competence acquisition during VET rather than one based on acquiring isolated skills and competences. The DQR and EQF can help citizens make their professional competences to potential employers in other EU countries and Germany more comprehensible and clarify the equivalence between certain vocational qualifications and academic qualifications. The respective DQR and EQF levels are shown on IVET and advanced vocational certificates. Since 2014, the DQR and EQF level has also been included on master craftsperson certificates.

Table 14. **The German qualifications framework**

DQR/EQF level	Qualifications
1	<ul style="list-style-type: none"> - Vocational training preparation (<i>Berufsausbildungsvorbereitung</i>) <ul style="list-style-type: none"> • Vocational preparation schemes (<i>Berufsvorbereitende Bildungsmaßnahmen - BvB, BvB-Reha</i>) • Pre-vocational training year (<i>Berufsvorbereitungsjahr - BVJ</i>)
2	-Lower secondary general school-leaving certificate (<i>Hauptschulabschluss - HSA</i>)

⁽⁸⁵⁾ BMBF/KMK, 2013; pp. 8, 9.

	<p>-Vocational training preparation (<i>Berufsausbildungsvorbereitung</i>)</p> <ul style="list-style-type: none"> • Vocational preparation schemes (<i>Berufsvorb. Maßnahmen - BvB, BvB-Reha</i>) • Pre-vocational training year (<i>Berufsvorbereitungsjahr - BVJ</i>) • Introductory training for young people (<i>Einstiegsqualifizierung - EQ</i>) <p>-<i>Berufsfachschule</i> [full-time vocational school (Basic Vocational Training (<i>Berufliche Grundbildung</i>))]</p>
3	<p>-Intermediate secondary general school-leaving certificate (<i>Mittlerer Schulabschluss – MSA</i>), obtained on completion of grade 10 at <i>Realschule</i> or at other lower secondary school types</p> <p>-Dual VET (2-year apprenticeships)</p> <p>-<i>Berufsfachschule</i> [full-time vocational school] (<i>Mittlerer Schulabschluss</i>) (Intermediate secondary general school-leaving certificate)</p>
4	<p>-General higher education entrance qualification (<i>Allgemeine Hochschulreife - AHR</i>)</p> <p>-Subject-related higher education entrance qualification (<i>Fachgebundene Hochschulreife - FgbHR</i>)</p> <p>-Technical higher education entrance qualification (<i>Fachhochschulreife - FHR</i>), for universities of applied sciences</p> <p>-Dual VET (3-year and 3.5-year apprenticeship)</p> <p>-<i>Berufsfachschule</i> [full-time vocational school] (<i>Landesrechtlich geregelte Berufsausbildungen</i>) (VET regulated by states)</p> <p>-<i>Berufsfachschule</i> [full-time vocational school] (VET regulated by Federal State for professions in health and elderly care)</p> <p>-<i>Berufsfachschule</i> [full-time vocational school] (full vocational qualification BBiG/HwO), for ex: skilled worker for airport ground handling services (<i>Geprüfte Fachkraft Bodenverkehrsdiens im Luftverkehr – Umschulung VET retraining BBiG Level 4</i>)</p>
5	<p>-<i>IT-Spezialist (Zertifizierer)</i> [Information Technology Specialist (Certified)]</p> <p>-<i>Servicetechniker (Geprüfter)</i> [Service Technician (Certified)]</p> <p>-Other recognised further VET qualifications at level 5 (<i>Sonstige berufliche Fortbildungsqualifikationen nach BBiG/HwO Niveau 5</i>)</p>
6	<p>-Bachelor</p> <p>-<i>Fachkaufmann (Geprüfter)</i> [Commercial Specialist (Certified)]</p> <p>-<i>Fachwirt (Geprüfter)</i> [Business Management Specialist (Certified)]</p> <p>-<i>Meister (Geprüfter)</i> [Master Craftsman (Certified)]</p> <p>-<i>Operative IT-Professional (Geprüfter)</i> [Operative IT Professional</p>

	(Certified)] - <i>Fachschule (Landesrechtlich geregelte Weiterbildungen)</i> (further VET regulated by states) -Certified initial and further VET teacher (<i>Geprüfter Aus- und Weiterbildungspädagoge</i>) -Other recognised further VET qualifications at level 6 (<i>Sonstige berufliche Fortbildungsqualifikationen nach BBiG/HwO Niveau 6</i>) -Further VET qualifications at level 6 according to S. 54 BBiG (<i>Berufliche Fortbildungsqualifikationen nach § 54 BBiG Niveau 6</i>)
7	-Master - <i>Strategischer IT-Professional (Geprüfter)</i> [Strategic IT Professional (Certified)]* - <i>Betriebswirt nach dem Berufsbildungsgesetz (Geprüfter)</i> - Business manager (BBiG) - <i>Betriebswirt nach der Handwerksordnung (Geprüfter)</i> - Business manager (HwO) - <i>Technischer Betriebswirt (Geprüfter)</i> - Technical business manager (Certified) - <i>Berufspädagoge (Geprüfter)</i> – Vocational teacher (Certified)
8	-Doctoral Studies

* The German Qualifications Framework Working Group agrees that additional further vocational training qualifications should be allocated in accordance with the procedure described in the DQR Manual.
 Source: KMK; BMBF (2018).

Chapter 4. Promoting participation in VET

This chapter describes permanent instruments and structures to promote participation in VET. They include financial, regulatory and motivational incentives. Target groups vary considerably, and include young people and adults, low-skilled and highly skilled people, within and outside the labour market. In a first step, main incentives for IVET and CVET learners are described. In a second part, incentives for enterprises are detailed. The final part of this chapter explains the approach of guidance and counselling structures and services supporting young people and adults, informing them at orientation and transition stages on learning and career opportunities.

4.1 Incentives for learners

4.1.1 Incentives and support for IVET learners

The general image of IVET in Germany is clearly positive. Especially the German dual VET system of apprenticeship, which is the prevailing model, has evolved over many decades and is embedded in the culture of the companies and of society as a whole. Society's appreciation and the career objectives that can be achieved through VET are unique selling points. The Cedefop public opinion survey carried out in 2016 ⁽⁸⁶⁾ and the analysis of the German results ⁽⁸⁷⁾ looked among others into the perceived labour market outcomes associated with IVET. The findings clearly confirm the positive image of apprenticeship in Germany, particularly in terms of gaining relevant employment skills (close interlocking of learning processes based on real and increasingly self-sufficient work tasks), of leading to well-paid jobs, on allowing to find a job quickly after obtaining a qualification, and on leading to jobs that are highly regarded. Most of these positive perceptions are confirmed by the facts, e.g.: 94% of apprentices find a job immediately or within three months after obtaining their qualification. However, demographic changes and an increasing attractiveness of the general and higher education sector represent major challenges for VET. Furthermore, support and incentives are also needed by special target groups, for example disadvantaged young people, to be able to complete an IVET qualification.

⁽⁸⁶⁾ <http://www.cedefop.europa.eu/en/events-and-projects/projects/opinion-survey-vocational-education-and-training-europe/publications>

⁽⁸⁷⁾ <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/cedefop-public-opinion-survey-vocational-education-and-training-europe-germany-0>

4.1.1.1 Remuneration, grants and support measures for IVET learners

Apprentices in the dual system (more than two-thirds of IVET learners) receive a remuneration from their employer and can apply for a grant. The remuneration is one major factor of attractiveness for dual VET since it gives the apprentice a certain financial independence. For learners in school-based IVET (30% of IVET), the financial support available are the student grant ⁽⁸⁸⁾ (as in general education) and student loans ⁽⁸⁹⁾. In addition to remuneration, grant and loan, there is a range of state support measures for IVET learners, mostly regulated under the German Social Code (SGB II/III).

Apprentice's remuneration

According to the Vocational Training Act, the training company shall pay apprentices an appropriate allowance. The amount and payment procedure are specified in the training contract. The training allowances are based on collective wage agreements.

Average apprentice remuneration across Germany for 2017 was EUR 876 gross per month (increasing from 1st year of training: EUR 794 to 4th year: EUR 995). There are significant differences in the level of remuneration between the training sectors and occupations. In 2017, the highest monthly allowances were for the skilled craft occupation of brick layer (EUR 1095) followed by the mechatronics technician (EUR 1043 per month). On the other end, the lowest monthly remuneration was for the apprentices as chimney sweeper (EUR 518) followed by florist and baker (EUR 617 and EUR 637).

Basic vocational training grant ⁽⁹⁰⁾

Financial support is offered during IVET and prevocational training organised by the federal employment agency to help apprentices overcome the economic difficulties that can stand in the way of appropriate vocational qualification. The overall monthly needs of the apprentice not living with his or her parents are estimated and the amount which cannot be covered by own/parents' income are

⁽⁸⁸⁾ www.bafoeg.bmbf.de

⁽⁸⁹⁾ Bildungskredit; <https://www.bmbf.de/de/bildungskredit-2118.html> and www.bildungskredit.de

⁽⁹⁰⁾ Berufsausbildungsbeihilfe BAB: Standard funding support under S. 56 ff. of the German Social Code (SGB III and BAföG); Actual expenditures 2017: € 304.7 million
https://dejure.org/gesetze/SGB_III/58.html
www.bafoeg.bmbf.de
<https://www3.arbeitsagentur.de/web/content/EN/Benefits/VocationalTrainin...>
<https://www.arbeitsagentur.de/web/content/DE/BuergerinnenUndBuerger/Ausb...>
<http://www.bafoeg-aktuell.de/karriere/berufsausbildungsbeihilfe.html>

subsidised. In 2017, 88 000 persons undergoing vocational training and 23 000 participating in pre-vocational training measures received funding and support through such a grant (from 1 August 2016, max. EUR 622 per month) (BMBF 2018, p 119). There are also vocational training grants specifically adapted to the needs of learners with disabilities ⁽⁹¹⁾.

Support during training ⁽⁹²⁾

This support is targeted at all young people who need support to start and successfully complete vocational training. The enrolment is voluntary. The support is offered in form of special classes and accompanying socio-educational mentors helping apprentices overcome language and educational deficits and acquire specialist theoretical knowledge for at least three hours per week. The law establishing this measure came into force in May 2015. In 2017, 36 000 young people were beneficiaries ⁽⁹³⁾ which represents a share of 2.7% of all apprentices in 2017. It helps apprentices not to drop out of training, stabilise relationships with the training enterprise and successfully complete vocational training. The support can continue up to six months after having found a work placement. Six months after completing a measure, 81% of participants were in jobs subject to social insurance contributions.

Pre-VET measures ⁽⁹⁴⁾

The federal employment agency provides prevocational training to young people and young adults who have not participated in IVET but have completed their compulsory general education as stipulated in the social code, and also subsidises VET for disadvantaged young people. The measures include:

- (a) additional financial and socio-pedagogic assistance during in-company training;
- (b) vocational training in non-company establishments in a recognised training occupation leading to a qualification upon completion;
- (c) transitional support (continuation of training support following completion or discontinuation of training);
- (d) support for integration into employment in the form of additional financial and socio-pedagogic assistance.

⁽⁹¹⁾ <https://www3.arbeitsagentur.de/web/content/EN/Benefits/PersonswithDisabi...>

⁽⁹²⁾ Ausbildungsbegleitende Hilfen abH: Standard funding support as defined in the German Social Code (SGB III, 74 to 80).

<https://www.arbeitsagentur.de/web/content/DE/BuergerinnenUndBuerger/Ausb...>

⁽⁹³⁾ Actual expenditures 2017: € 97.1 million (BMBF, 2018 p 121).

⁽⁹⁴⁾ berufsvorbereitende Bildungsmaßnahmen – BvB (SGB III, 51) www.arbeitsagentur.de

Around 63 000 young people in need of extra support participated in a prevocational training measure in 2017 ⁽⁹⁵⁾.

Introductory training for young people ⁽⁹⁶⁾

The primary goal of introductory training is to give young people (but basically, there is no age limit) with limited prospects of being placed in training an opportunity to acquire or enhance modular qualifications towards a recognised occupation. Introductory training also offers companies providing training an opportunity to get to know young people, not just in a brief job application interview, but to observe their skills and abilities over a period of six to twelve months in daily work processes.

Companies which offer introductory training enter into a contract with the young people concerned. Employers receive a subsidy of up to EUR 231 per month to remunerate apprentices, plus a flat-rate contribution towards the average total social security amount payable. On completion of the work placement, participants receive a certificate issued by the competent body (e.g. chamber of industry and commerce, chamber of skilled crafts). In certain circumstances, up to six months' credit for the work placement can be offset against the qualifying period of a subsequent apprenticeship. 69 % of those completing introductory training transfer into training six months after completing the introductory training measure. In 2017, around 24 000 young people began introductory training ⁽⁹⁷⁾.

Training placement

Training placement pursuant to the German Social Code is a standard benefit for promoting employment and basic social security benefits for jobseekers. It is a comprehensive service offered by employment agencies and Jobcenters to all young people. The agencies also offer employers specific consultancy services and approach them to enquire about training places. In the 2016/17 reporting year, 549 785 training places and 547 824 training place applicants were registered with the federal employment agency (BMBF 2018, p. 118).

Special measures for integrating refugees into IVET

Integrating young people with migration background and refugees in the labour market and in the educational and VET system is a priority. Keys to integration are

⁽⁹⁵⁾ Actual spending for 2017: € 215.3 million (BMBF 2018, p. 117).

⁽⁹⁶⁾ Einstiegsqualifizierung – EQ (SGB III, 54a) <https://www.arbeitsagentur.de> [accessed: 02.10.2018].

⁽⁹⁷⁾ Actual spending 2017: € 50 million (BMBF 2018, p 118).

the learning of the host language, validation of formal as well as non-formal and informally acquired skills, provision of vocational orientation and access to pre-VET and VET programmes, apprenticeships, upskilling measures and employment. Following the arrival of about one million refugees at the end of 2015, existing programmes aiming to integrate disadvantaged groups in the labour market and in the VET system opened up with an additional focus on refugees. New programmes were established in 2016, specifically addressing refugees. A synopsis of integration measures for refugees was published by the federal government in December 2016 ⁽⁹⁸⁾. Since 2015, a specific ESF-supported programme *German for professional purposes* ⁽⁹⁹⁾ was carried out to help people with migration background learn the German language and integrate into society and the world of work. 80 000 people participated in the programme in 2017. A new information hub for German language courses, *Handbook Germany* ⁽¹⁰⁰⁾, was also set up, funded by the federal office for migration and refugees (BAMF) ⁽¹⁰¹⁾.

Since a 2016 amendment to the Social Code, young refugees with tolerated residence status who participate in dual VET are entitled to financial support after 15 months stay in Germany instead of the previously required four years. Support is in the form of training loans, pre-vocational training measures, and the so-called assisted training scheme (see above). The Integration Act ⁽¹⁰²⁾ was adopted in July 2016 and intends to facilitate refugee integration into society through a 'support and challenge' approach. Refugees with prospects to stay permanently will get integration courses at an early stage, and a legal certainty while undergoing vocational training: up to three-year right of residence for those in apprenticeship until successful completion of training, followed by two-year right to reside, if the person works in the profession s/he was trained in. Asylum seekers will be granted temporary residence permits once they have submitted their application for asylum, so they have a legal certainty and early access to the integration courses and labour market.

⁽⁹⁸⁾ https://www.bundesregierung.de/Content/DE/_Anlagen/2017/04/2017-04-25-integrationsmassnahmen.html

⁽⁹⁹⁾ www.bamf.de

⁽¹⁰⁰⁾ <https://handbookgermany.de/en.html>

⁽¹⁰¹⁾ BMBF 2018, p. 57-60 and from p. 88

⁽¹⁰²⁾ <http://www.cedefop.europa.eu/en/news-and-press/news/germany-new-act-aid-refugee-integration> and
https://www.bundesregierung.de/Content/EN/Artikel/2016/07_en/2016-05-25-integrationsgesetz-beschlossen_en.html;jsessionid=9EF13197E8E4E1732BFC105F9A814042.s1t1

4.1.1.2 Campaigns and important initiatives to promote IVET

In addition to a new campaign on apprenticeship, two overarching initiatives (the Educational Chains initiative and the Alliance for Initial and Further Training) have promoted participation in IVET, using and developing sustainable instruments and structures already described above.

New campaign to promote dual VET

Given the increasing trend towards academic education, the Federal ministries of education and economic affairs have set up a new joint campaign to present dual VET (apprenticeship) as an attractive option. This information campaign aims to persuade more young people of the advantages of dual training and the wide range of career prospects and opportunities for development that advanced vocational training offers. This new campaign *You + Your Apprenticeship – Practically Unbeatable!* ⁽¹⁰³⁾ addresses more specific target groups. A motivational message is broadcasted over a range of various media channels such as cinema, press, social media tools and various events, positioning dual vocational training as a realistic and attractive option for a successful educational pathway.

Educational chains leading to vocational qualifications initiative (*Abschluss und Anschluss - Bildungsketten bis zum Ausbildungsabschluss*) ⁽¹⁰⁴⁾

This initiative aims to secure young people's success in education and training and to develop a structured and consistent funding and support policy by the Federal government (BMBF, BMAS), the federal employment agency (BA) and federal states for a vocational orientation and transition system. It focuses on analysing the potential of young people at an early stage (from grade 7), action-oriented career orientation options such as the vocational guidance programme 'Discover your talent' (BOP), vocational orientation measures as defined in the German Social Code (SGB), individual career start coaching, mentoring through training by volunteers, introductory training, support for apprentices during training and assisted training. To extend the range of the Educational Chains initiative, the BMBF started the process of agreements between the BA and Federal and state governments in 2014. This close and binding cooperation clarifies funding structures for vocational guidance and the transition from school into work (BMBF 2018, p 90).

⁽¹⁰³⁾ <https://www.praktisch-unschlagbar.de/> [accessed 09.10.2018]

⁽¹⁰⁴⁾ <https://www.bildungsketten.de/> [accessed: 04.10.2018]
<https://www.berufsorientierungsprogramm.de/> [accessed: 04.10.2018]

Alliance for Initial and Further Training (*Allianz für Aus- und Weiterbildung*)⁽¹⁰⁵⁾

In order to strengthen VET, the Federal government established this new alliance at the end of 2014, together with employer associations, trade unions, federal states and the Federal ministry of economic affairs (BMWi). The federal employment agency provides funding. The comprehensive strategy offers various instruments, for example training placement services, and particularly supports SMEs in training young people with special needs. Within the Alliance, sectors have for example committed to providing 20 000 places annually for introductory training.

The main objectives are:

- (a) to reduce the number of young people without school certificate;
- (b) to give each person a path (in the context of a *training guarantee*) that can lead to a VET qualification;
- (c) to reduce the mismatch between applicants seeking training places and companies offering them;
- (d) to reduce the number of young people in the transition sphere;
- (e) to strengthen further training, particularly for upgrading;
- (f) to increase the number of training places and companies willing to provide them.

Mobility programme for young people interested in vocational training from other European countries⁽¹⁰⁶⁾

The special programme offering 'Funding to promote the professional mobility of young people with an interest in training and unemployed young skilled workers from Europe' (MobiPro-EU) develops measures and instruments to promote international mobility for apprentices in the EU. German language tuition, social and vocational training mentoring, and financial support to enable mobility and to secure living costs help young people interested in apprenticeship and young adults from the EU to successfully complete vocational training in a company in Germany.

⁽¹⁰⁵⁾ <https://www.aus-und-weiterbildungsallianz.de/AAW/Navigation/DE/Home/home.html> [accessed: 04.10.2018]

⁽¹⁰⁶⁾ MobiPro-EU: Förderung der beruflichen Mobilität von ausbildungsinteressierten Jugendlichen aus Europa) <http://www.thejobofmylife.de/en/home.html> [accessed 04.10.2018]

4.1.2 Incentives for CVET learners

The state promotes participation in CVET with various support and funding instruments (e.g., grants, subsidies and loans to cover CVET and living costs), addressing various target groups. Some of them are regulated by law and others are in the form of programmes.

Upgrading Training Assistance Act (*Aufstiegsfortbildungsförderungsgesetz*, AFBG, known as ‘Meister-BaföG’) ⁽¹⁰⁷⁾

This law gives craftspeople and other skilled workers a statutory entitlement to financial assistance to cover costs for further training and living expenses. This financial support, jointly covered by the federal and state governments, comprises subsidies (or, from a certain amount, bank loans at favourable rates) for master craftsperson course and exam fees or other programmes leading to a comparable qualification. The AFBG, the equivalent to university student grants (BAföG), was amended in 2016 to improve the funding and support, expand available funding options to new target groups and ultimately, to make a substantial contribution to increasing the attractiveness of the careers that vocational training offers.

In 2016, the number of funding recipients was approx. 162 000, similar to 2015. In 2017, EUR 619 million funding was available for this programme: EUR 323 million in form of subsidies and EUR 296 million in form of loans. Since the *Meister-BAföG* was introduced in 1996, it has made it possible for around 2 million people to upgrade their vocational skills and achieve occupational promotion by providing approx. EUR 8 billion in funding (BMBF 2018, p. 125). AFBG is the most comprehensive CVET funding instrument. It is a major pillar and driver of skills upgrading and occupational advancement.

Continuing training grant (*Weiterbildungsstipendium*) ⁽¹⁰⁸⁾

Since 1991, the BMBF has offered particularly gifted young workers a specific CVET grant (a similar programme exists in academic education). Grants are awarded to approx. 6 000 new recipients every year and more than 133 000 grants have been provided since the programme started. One of its aims is to underline the importance of continuing training throughout working life. Admission onto the continuing training scholarship programme requires above average vocational ability and motivation.

⁽¹⁰⁷⁾ <https://www.bmbf.de/de/aus-meister-bafoeg-wird-modernes-aufstiegs-bafoeg-3170.html> [accessed 08.10.2018]

⁽¹⁰⁸⁾ <https://www.bmbf.de/de/das-weiterbildungsstipendium-883.html> [accessed 08.10.2018]

Funding is provided for the measure itself, for travel and accommodation costs and for costs of work materials. Scholarship recipients may apply for a total of EUR 6 000 for an unlimited amount of continuing training courses eligible for funding within the three-year funding period. They are required to bear 10% of costs themselves per course (BIBB 2018, p. 396).

Upgrading scholarship (*Aufstiegsstipendium*) ⁽¹⁰⁹⁾

The BMBF's upgrading scholarship offers incentives to study to skilled workers with professional experience, whether or not they gained a higher education entrance qualification at school. It was established for professionals with at least two years' work experience and with outstanding talents. When qualified skilled professionals are already working, financial issues often prevent them from starting a course of studies. It is the only academic programme supporting talented students who are combining work and study (over a third of the scholarship holders) or studying full-time for the duration of their course of studies (standard prescribed study period). The funding provided for full-time study is EUR 815 a month (plus a one-off childcare payment) and EUR 2 400 a year offered for those combining work and study (BIBB 2018, p. 399). Scholarships are awarded to approx. 1 000 new recipients every year and about 9 900 were provided from 2008 to 2017 ⁽¹¹⁰⁾.

Continuing education bonus (*Bildungsprämie*) ⁽¹¹¹⁾

To encourage groups of people that tend to have lower rates of participation in company-based continuing vocational training (workers on low incomes, women, employees in SMEs, people working part time and healthcare professionals), the federal government approved an additional financing scheme in 2008: premium and savings vouchers. The premium voucher reduces training costs by up to 50% of tuition fees (max EUR 500) for job-related training courses or courses that help improve people's employability. It targets employees and self-employed people who work at least 15 hours a week and have a maximum taxable annual income of EUR 20 000 (or 40 000 for couples; child allowances are taken into account) or are on parental leave. The voucher is valid for six months. People can receive vouchers every two years. This measure is supported by the ESF. The savings voucher provides a right to withdraw money from capital formation saving plans without losing the savings grant. This is open to all people who have such saving plans, regardless of their income. Since the programme's start in 2008, around

⁽¹⁰⁹⁾ <https://www.bmbf.de/de/das-aufstiegsstipendium-882.html> [accessed 08.10.2018]

⁽¹¹⁰⁾ Funding volume in 2017: €24.8 million.

⁽¹¹¹⁾ <http://www.bildungspraemie.info/> [accessed 08.10.2018]

320 000 premium vouchers have been issued and 28 000 individual continuing VET savings plans established.

4.1.3. CVET for the unemployed

One important national strategy is the prevention of unemployment through nationwide standard (under the German Social Code, SGB III) upskilling programmes specifically addressing those at risk of long-term unemployment : the low-skilled and the unemployed ⁽¹¹²⁾. Moreover, the federal government implements active labour market policy (ALMP) measures addressing long-term unemployment.

To be eligible for a CVET voucher, participation must be considered necessary to enable occupational integration, to avert pending unemployment or because the candidate does not have a vocational qualification. When identifying the need for CVET measures, the employment agency or the authority providing basic income support for jobseekers must always consider labour market conditions. They must decide, among others, whether the candidate could find employment without CVET; whether other labour market policy instruments could be more appropriate; and whether the candidate could, in all likelihood, return to the labour market as a result of the training.

Persons meeting the general eligibility criteria are granted an education and training voucher (*Bildungsgutschein*) by the employment agency or the authority providing jobseeker support. This voucher contains data on the educational objective, the time required to reach this objective and information as to where the voucher applies in the region. The holder can redeem it at any educational institution of their choice which is accredited for funding under the conditions specified in the education voucher. The CVET activity must also be approved for funding and support. The education institution then charges the employment agency for the course costs on the basis of the education voucher. Information on approved CVET measures and providers can also be found in the database of the federal employment agency ⁽¹¹³⁾.

By issuing an education and training voucher, the reimbursement of some or all of the following CVET expenses is confirmed: course costs, travel expenses, costs for external board and lodging and childcare expenses. Candidates are also entitled to receive unemployment benefit for the duration of the CVET programme

⁽¹¹²⁾ Huisman, A. (2018). Guidance and outreach for inactive and unemployed – Germany. Cedefop ReferNet thematic perspectives series. http://libserver.cedefop.europa.eu/vetelib/2018/guidance_outreach_Germany_Cedefop_ReferNet.pdf

⁽¹¹³⁾ KURSNET <http://kursnet-finden.arbeitsagentur.de/kurs/> [accessed on 02.10.2018]

if specific requirements are met. Regulations related to unemployment benefits remain unchanged for the duration of the CVET programme.

Law to reinforce CVET and unemployment insurance coverage (AWStG)

Workers with low-level qualifications, the long-term unemployed and older employees in particular must be increasingly recruited into vocational further training. Qualifying further vocational training should also strengthen participants' motivation, resilience and basic skills and reduce the rate at which people drop out of ongoing training.

To achieve these goals, the Federal Ministry of Labour and Social Affairs (BMAS) expanded support and funding for further vocational training through a new law to strengthen CVET and unemployment insurance coverage (AWStG) ⁽¹¹⁴⁾ which came into force on 1 August 2016. The law improves the access and overall conditions of CVET (for ex. allowances during training as well as financial incentives for passing exams) in order to attract more people with few or low-level qualifications, the long-term unemployed and older employees into qualifying continuing vocational training.

This new law complements and reinforces standard CVET support instruments under the German Social Code, for example:

(a) The FbW programme promoting CVET ⁽¹¹⁵⁾

It is available not only to the long-term unemployed, unemployed and employees under threat of imminent unemployment, but also to workers with low levels of qualifications and employees in SMEs. Eligibility for funding also depends on labour market conditions, as for the education and training voucher (see above). Eligible CVET courses aiming to obtain, update or upgrade a vocational (also partial) qualification are listed in the KURSNET ⁽¹¹⁶⁾ database of the federal employment agency.

(b) The IFlaS initiative for responding to structural changes ⁽¹¹⁷⁾

Based on the German Social Code, it gives people with low-level qualifications living in structurally weak areas the opportunity to acquire a recognised vocational qualification or complete modular (partial) qualifications. The target groups are the unemployed and people at risk of becoming unemployed. Since 2012 the initiative is also helping those

⁽¹¹⁴⁾ <http://www.portal-sozialpolitik.de/recht/gesetzgebung/gesetzgebung-18-wahlperiode/staerkung-berufliche-weiterbildung-und-versicherungsschutz>

⁽¹¹⁵⁾ www.arbeitsagentur.de

⁽¹¹⁶⁾ <http://kursnet-finden.arbeitsagentur.de/kurs/>

⁽¹¹⁷⁾ www.arbeitsagentur.de

returning to work who have no VET qualifications (or have not worked in the occupation they trained for over four years) to get back into jobs subject to social insurance contributions.

(c) The WeGebAU programme ⁽¹¹⁸⁾

Employment agencies can provide full or partial funding for qualification courses for employees aged over 45 working in SMEs with fewer than 250 employees. Since April 2012, employees aged under 45 working in SMEs can also receive funding for CVET, regardless of their current qualification level, on the additional provision that their employer meets at least 50 % of the course costs. Employees who have no or no useful vocational qualifications can also receive funding. Employers who release employees with low-level qualifications to take part in CVET to gain qualifications can receive a subsidy to cover the employee's pay for the period they spend in training. The changed prerequisites for funding resulted in a significant increase in participation rates. 'WeGebAU' has also been increasingly used to help employed geriatric nursing assistants upgrade their qualifications.

4.2 Incentives for enterprises

For many German companies, it is a tradition and a matter of course to provide and to carry most of the costs for apprenticeship: in 2016, 20% (426 375) of 2.15 million companies offered training to 1.3 million apprentices ⁽¹¹⁹⁾ – this share even reaches 36%, if considering only the companies authorized to provide training ⁽¹²⁰⁾. Employers are motivated to train young people, because in their view, investing in apprenticeship pays off in the long term. Here are some benefits seen by employers: custom-fit training with company-specific know-how, training period as best recruitment selection, productive and innovative contributions of apprentices (allowing 70% of costs to be refinanced), avoiding future shortage of skilled staff, better employee loyalty, participation in defining company-based training content and development of standards, and finally, improving their image (CSR) ⁽¹²¹⁾.

⁽¹¹⁸⁾ CVET for low-qualified and older employees in SMEs.

<https://www.arbeitsagentur.de/unternehmen/foerderung-weiterbildung>

⁽¹¹⁹⁾ BIBB Datenreport 2018, p. 205.

⁽¹²⁰⁾ It must be noted that not every company is authorised to offer training. According to IAB Establishment Panel data for 2016, more than half (55 %) of companies were permitted by a chamber (according to the conditions in the Vocational Training Act, BBiG, Section 1) to provide training.

⁽¹²¹⁾ <https://www.bibb.de/govet/en/54879.php> Presentations on the German VET system by GOVET.

However, the readiness to provide apprenticeship has been declining in the last decade (in 2007, 24.1% of companies vs 19.8% in 2016), especially among the smallest companies (1 to 9 employees). This development is in keeping with the increasing difficulties that the smaller and smallest companies have in filling the apprenticeship places they offer. The proportion of vacant apprenticeship places tends to be inversely proportionate to the number of employees in the company. One possible explanation for this is that larger companies may be more attractive to young people as training providers and have more funds available for recruiting measures. Companies that are repeatedly unable to fill the apprenticeship places they offer may eventually stop participating in vocational training entirely. This shows that companies, especially SMEs (Section 4.2.2), need support, which is provided in various forms, as described below.

4.2.1 Inter-company vocational training centres and training structures

SMEs, in particular crafts companies, are important training suppliers, but are unable, or not fully able, to provide all the facets of training required by regulations. This is primarily due to the increasing division of labour in production processes, increasing specialisation and in some cases financial problems or accelerated technological change. The limited suitability of such enterprises as training providers is compensated for by supplementary external training measures in inter-company vocational training centres (*überbetriebliche Berufsbildungsstätten*, ÜBSs) or through training structures (*Ausbildungsverbünde*) (Section 2.1.1.1). Inter-company training centres also have an essential position in further and continuing training in SMEs, especially in the commercial and technical sectors. Such training centres also exist in the skilled trade sector (ÜLU) ⁽¹²²⁾. Funding is offered for the modernising and restructuring of inter-company training centres to adapt them to changing education and training policy and economic conditions, as well as the challenge of digitalisation.

4.2.2 Support for SMEs

- Training placement

The employment agencies (BA) offer employers specific consultancy services and approach them to enquire about training places. Employers are free to register any training places they are offering. In the 2016/17 reporting year, 549 785 training places and 547 824 training place applicants were registered with the BA (BMBF 2018, p. 118).

⁽¹²²⁾ www.bmwi.de/Redaktion/DE/Text-sammlungen/Mittelstand/handwerk.html?cms_artId=243216

- **Alliance Training Guarantee**

As of 2016, a process to help find training places / apprentices has been put in place: every young person who is still looking for an apprenticeship on 30 September of a given year will receive three offers for company-based training.

- **Jobstarter Plus**

The BMBF funds and supports projects in the national JOBSTARTER plus programme (BMBF 2018, p. 93) with co-financing from the ESF to improve regional training structures and trial innovative training policy approaches to solve training market problems. The programme is designed to flexibly and actively respond to current training market developments with a range of variable funding priorities, for example:

- (a) advise and support SMEs in the process of (re-) starting participation in dual training and increasing their commitment to training;
- (b) counteract matching problems and the difficulties that companies have in filling training places in certain industries;
- (c) advising and supporting SMEs in the process of adapting their training to the challenges posed by the increasing automation and digitalisation of the economy.

- ***Passgenaue Besetzung* ⁽¹²³⁾** ('Perfect Match')

The '*Passgenaue Besetzung*' programme (BMBF 2018, p. 122), financed jointly by the ESF and federal ministry for economic affairs (BMWi), works to counteract matching problems in the training market. The programme provides funding for consultants who support SMEs in filling the training places they offer with suitable local and foreign young people and young refugees and migrants. Since the programme began in 2007, '*Passgenaue Besetzung*' has successfully placed around 80 000 young people in training and 9 500 in introductory training.

- **BA consultancy on qualification for employers ⁽¹²⁴⁾**

The federal employment agency (BA) supports personnel development measures in SMEs as part of its preventative approach to securing a supply of skilled workers by informing and advising employers and pointing out the possibilities for further developing the potential existing in companies through company-based qualification measures. This consultancy makes employers aware of the advantages of more frequently including groups of employees who are often not considered for participation in measures (e.g. those without formal qualifications and older employees) in further training measures. By offering consultancy on qualification and support for personnel development to employers, the BA is

⁽¹²³⁾ www.bmwi.de/passgenaue-besetzung

⁽¹²⁴⁾ www.arbeitsagentur.de/personalentwicklung

helping companies to fill training and employment vacancies from within their own ranks (BMBF 2018, p 124).

4.2.3 Support measures to help integrate refugees in dual VET and work

The following support measures helping to integrate refugees in apprenticeship address especially SMEs and skilled trade companies:

- (a) the network Companies Integrate Refugees funded by the federal ministry for economic affairs (BMWi) and the umbrella organisation of the chambers of industry and commerce (DIHK) is aimed at companies that are involved or want to get involved with refugees. The aim is to bring refugees to training and employment. The network offers its more than 1 650 member companies (three quarters of which are SMEs) the opportunity to exchange experiences and practical information on the employment of refugees;
- (b) the chambers' Welcome Guides (Willkommenslotsen) are available to companies on all issues relating to the operational integration of refugees. Since the start of the programme in March 2016, the Welcome Guides have achieved around 11 500 placements of refugees in employment, training or internship (BMBF 2018, p. 94);
- (c) by means of a matching process, the online internship platform JOIN (125) offers opportunities for companies and refugees to find and get to know each other through internship placements. The aim is to speed up integration into the labour market and to remove obstacles to employment. The aim of this joint initiative of the federal ministry of the interior (BMI) and business is to provide refugees with the possibility of employment in a timely manner and to provide a first proof of their qualifications, even before they receive a residence permit and a work permit.

4.3 Guidance and counselling services

Guidance and counselling provision is embedded in Germany's overall employment strategy as well as in its educational sector and lifelong learning strategy. Labour market policy has a long tradition of guidance and counselling; however, lifelong learning and lifelong and life-wide guidance and counselling have only recently become high level topics on the political agenda. Due to the country's constitution and its federal structure with split responsibilities between the federal government, sixteen state governments and local municipalities, and

(¹²⁵) <http://www.join-now.org/>

between education, labour and youth ministries, guidance policy and provision is also split between these sectors. Although there are several institutional links and cooperation agreements between labour market and education policy, there is so far no coherent cross-sectoral national lifelong guidance strategy.

Since the 1920s, vocational guidance and counselling for youth and adults has been a legal obligation of the federal employment agency (BA) and its local employment agencies. Until 1998, the BA had a state monopoly on vocational guidance and counselling for young people moving from school to work. The BA also offers guidance and counselling services for adults, although there are multiple providers in this area, in particular further training institutions, some municipalities, non-profit organisations and private career counselling practitioners. Since the abolishment of the state monopoly, the private and semi-private market has grown considerably. This is partly due to limited regulations, for instance, concerning finances and providers' facilities (SGB III, § 289), with no stipulated qualification requirements for staff or quality standards. Nevertheless, the BA is still the largest and most important guidance and counselling service provider. This includes services for long-term unemployed from *Jobcenters* under the social code (SGB II) (¹²⁶).

Guidance and counselling in the education sector mainly focuses on vocational education, advice on educational career paths or individual learning difficulties. Services vary between states and between schools. Following a formal agreement between the standing conference of ministers for education and cultural affairs of the states (KMK) and the BA, school career education and the local employment agencies' vocational guidance services cooperate closely (KMK/BA 2004/17) (¹²⁷):

- (a) vocational education is an established element in general education curricula. It is embedded in different school subjects such as work studies (*Arbeitslehre*), economics and social studies, home economics, engineering, polytechnic education, etc. Vocational education in class is normally supported by a career counsellor from the local employment agency and supplemented in years 8, 9 or 10 by visits to the vocational information centre, to enterprises and by compulsory one- to three-week work placements in enterprises;

(¹²⁶) Huismann, A. (2018). Guidance and outreach for inactive and unemployed – Germany. Cedefop ReferNet thematic perspectives series. p 13-16.
http://libserver.cedefop.europa.eu/vetelib/2018/guidance_outreach_Germany_Cedefop_ReferNet.pdf

(¹²⁷) <https://www.kmk.org/aktuelles/thema-berufliche-bildung.html> [accessed on 02.10.2018]

- (b) in addition, state governments have launched special programmes (for example, 'Kein Abschluss ohne Anschluss') ⁽¹²⁸⁾ and provide funding for additional efforts to improve learners' career development and career management skills (DJI/Inbas 2010 ⁽¹²⁹⁾). Additional funding from the federal government and/or from the BA as well as from private enterprises, foundations or employer associations enables schools to carry out multiple guidance activities;
- (c) practice-oriented, systematic vocational guidance is being provided at inter-company vocational training centres (ÜBSs, Chapter 2) and similar vocational training facilities as part of a specific career guidance programme (*Berufsorientierungsprogramm* – BOP) to make the transition from (compulsory) general education to apprenticeships (dual vocational training) easier for learners. The BMBF supports these centres financially to help them fulfil this task. The programme started in 2008 and was established on a permanent basis in 2010. These measures give young people the opportunity to spend two weeks at a vocational training facility gaining practical experience in three occupation-specific areas related to their potential. The aim is to achieve a sustainable improvement in school-to-work transition management ⁽¹³⁰⁾.

Vocational guidance, work studies and initiatives to ease transition from school to apprenticeships/work have received more attention due to the risk of dropouts, low performers and unemployment. Programmes like the Educational Chains initiative (*Bildungsketten*) and 'career start mentors' (*Berufseinstiegsbegleiter*) ⁽¹³¹⁾ provide individual coaching and support for pupils at risk. Regional transition management (*Regionales Übergangsmanagement*) ⁽¹³²⁾ focuses on placing less able school leavers into apprenticeships to match the demand of enterprises and provide suitable training opportunities for all school leavers. Young refugees are specifically addressed by such measures ⁽¹³³⁾ as well as disadvantaged young people who are not or no longer reached by regular services (new section in Social Code: 16h SGB II) ⁽¹³⁴⁾. Further, the website

⁽¹²⁸⁾ <https://www.mags.nrw/uebergang-schule-beruf-startseite> [accessed on 02.10.2018]

⁽¹²⁹⁾ https://www.dji.de/fileadmin/user_upload/bibs/9_11672_berufsorientierung.pdf

⁽¹³⁰⁾ <http://www.berufsorientierungsprogramm.de/html/de/12.php> [accessed on 02.10.2018]

⁽¹³¹⁾ https://www.bmbf.de/pub/Berufseinstiegsbegleitung_die_Moeglichmacher.pdf
[accessed on 02.10.2018]

⁽¹³²⁾ <https://www.ueberaus.de/www/dossier-uebergangsmanagement.php> [accessed on 02.10.2018]

⁽¹³³⁾ <https://www.berufsorientierungsprogramm.de/angebote-fuer-fluechtlinge/de/english-1993.html> [accessed on 02.10.2018]

⁽¹³⁴⁾ <https://www.bmas.de/DE/Themen/Arbeitsmarkt/Modellprogramme/respekt-pilotprogramm.html>
[accessed on 02.10.2018]

www.klischee-frei.de informs and supports young people with their career choice, with particular aim to disregard gender clichés.

In addition to the regular student counselling services, more and more universities have established career services to ease the transition from academic education to the labour market. Further, the BMBF started in 2014 an initiative to attract university dropouts (dropout rate of 29% in bachelor courses) into vocational training ⁽¹³⁵⁾.

Some large municipalities began to establish education guidance services in the 1980s to ensure independent and high quality service delivery for citizens aiming to take up further education (*Kommunale Bildungsberatung*). Due to financial constraints, many of them had to close down, and by the end of the 20th century there was a lack of independent guidance provision, especially for adults and employed persons. In order to implement and support the lifelong learning strategy, the BMBF launched a 'Learning Regions Network' in 2001. With ministerial funding, local and regional networks were established to initiate regional lifelong learning and employment strategies including guidance and counselling provision. Training providers, employment agencies, chambers of commerce, enterprises, local schools and municipalities, trade unions, as well as other local actors and stakeholders participated in these networks. In most cases, guidance services formed an integral part of these networks.

The follow-up programme, 'Local Learning' (*Lernen vor Ort*), was designed to support municipalities in their efforts to establish efficient education management systems. This included educational monitoring and guidance. This programme helped establish or maintain many municipal career guidance services. '*Transferinitiative Kommunales Bildungsmanagement*' ⁽¹³⁶⁾ is a structural funding programme that builds on the results of the BMBF's 'Local learning' funding programme. The programme's fundamental idea is to optimise local governments' coordination of education and training.

In addition to these comprehensive guidance services, there are numerous specific services, addressing for example women entering or re-entering the labour market, people with disabilities, people with migrant backgrounds ⁽¹³⁷⁾, disadvantaged youths and refugees, as mentioned above. Some services are provided by non-profit organisations, funded either by federal or state ministries or by public employment services. Some of them work only on a temporary financial basis and are not always well connected to other mainstream guidance services.

⁽¹³⁵⁾ <https://www.studienabbruch-und-dann.de/> [accessed on 02.10.2018]

⁽¹³⁶⁾ <https://www.transferinitiative.de/> [accessed: 02.10.2018]

⁽¹³⁷⁾ <https://www.jobstarter.de/de/kausa-21.php> [accessed: 02.10.2018]

Finally, here are some examples of online information and guidance tools: Arbeitsagentur.de and BERUFENET, studienwahl.de, Bildungsserver, KURSNET, InfoWebWeiterbildung iwwb.de, Berufsorientierungsprogramm.de, Studienabbruch-und-dann.de, Klischee-frei.de. The BMBF offers a telephone information and guidance service supporting individuals who are considering their further education options ⁽¹³⁸⁾ (BMBF 2018, p 126).

⁽¹³⁸⁾ <https://www.der-weiterbildungsratgeber.de/> [accessed: 02.10.2018]

List of abbreviations

AES	Adult Education Survey
AEVO	Ausbildereignungsverordnung [Ordinance on Trainer Aptitude]
AFBG	Aufstiegsfortbildungsförderungsgesetz [Upgrading Training Assistance Act]
AWStG	Arbeitslosenversicherungsschutz- und Weiterbildungsstärkungsgesetz [Law to reinforce CVET and unemployment insurance coverage]
AZAV (former AZWV)	Akkreditierungs- und Zulassungsverordnung Arbeitsförderung [Accreditation and Certification in Employment Promotion Ordinance]
BA	Bundesagentur für Arbeit [Federal Employment Agency]
BAföG	Bundesausbildungsförderungsgesetz [Federal Education and Training Assistance Act]
BAVBVO	Rechtsverordnung über die Bescheinigung von Grundlagen beruflicher Handlungsfähigkeit im Rahmen der Berufsausbildungsvorbereitung [Ordinance on the certification of the fundamentals of vocational proficiency in the context of preparation for vocational education and training]
BBiG	Berufsbildungsgesetz [Vocational Education and Training Act]
BIBB	Bundesinstitut für Berufsbildung [Federal Institute for Vocational Education and Training]
BMAS	Bundesministerium für Arbeit und Sozialordnung [Federal Ministry of Labour and Social Affairs]
BMBF	Bundesministerium für Bildung und Forschung [Federal Ministry of Education and Research]
BMWi	Bundesministerium für Wirtschaft und Energie [Federal Ministry of Economic Affairs and Energy]
BSW	Berichtssystem Weiterbildung [Continuing Education Reporting System]
DGB	Deutscher Gewerkschaftsbund [Federation of German Trade Unions]
DIE	Deutsches Institut für Erwachsenenbildung e.V. [German Institute for Adult Education]
DIHK	Deutscher Industrie- und Handelskammertag [Association of German Chambers of Industry and Commerce]
DJI	Deutsche Jugend Institut [German Youth Institute]
DQR	Deutscher Qualifikationsrahmen [German Qualifications Framework]

ECTS	European Credit Transfer System
ECVET	European Credit System for Vocational Education and Training
ENQA-VET	European Network for Quality Assurance in Vocational Education and Training
EQJ	Einstiegsqualifizierung Jugendlicher [Introductory training for young people]
EQF	European Qualifications Framework
ESF	Europäischer Sozialfonds [European Social Fund]
HEI	Higher Education Institution
HRK	Hochschulrektorenkonferenz [German Rectors' Conference]
HwO	Handwerksordnung [Crafts Code]
IAB	Institut für Arbeitsmarkt- und Berufsforschung [Institute for Labour Market and Occupation Research]
IHK	Industrie- und Handelskammer [Chamber of Industry and Commerce]
IKBB	Innovationskreis Berufliche Bildung [Vocational Education and Training Innovation Circle]
ISCED	Internationale Standardklassifikation für das Bildungswesen [International Standard Classification of Education]
IW	Institut der deutschen Wirtschaft [Institute for Business Research]
KMK	Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland [Standing Conference of Ministers for Education and Cultural Affairs of the States]
nfb	Nationales Forum Beratung in Bildung, Beruf und Beschäftigung e.V. (<i>nfb</i>) [National Forum for Guidance in Education, Professions and Employment]
SGB	Sozialgesetzbuch [Social Code]
StBa	Statistisches Bundesamt [Federal Statistical Office]
ÜBS	Überbetriebliche Berufsbildungsstätte [inter-company vocational training centre]
ÜLU	Überbetrieblichen Lehrlingsunterweisungen im Handwerk [inter-company vocational training centre in skilled trade sector]

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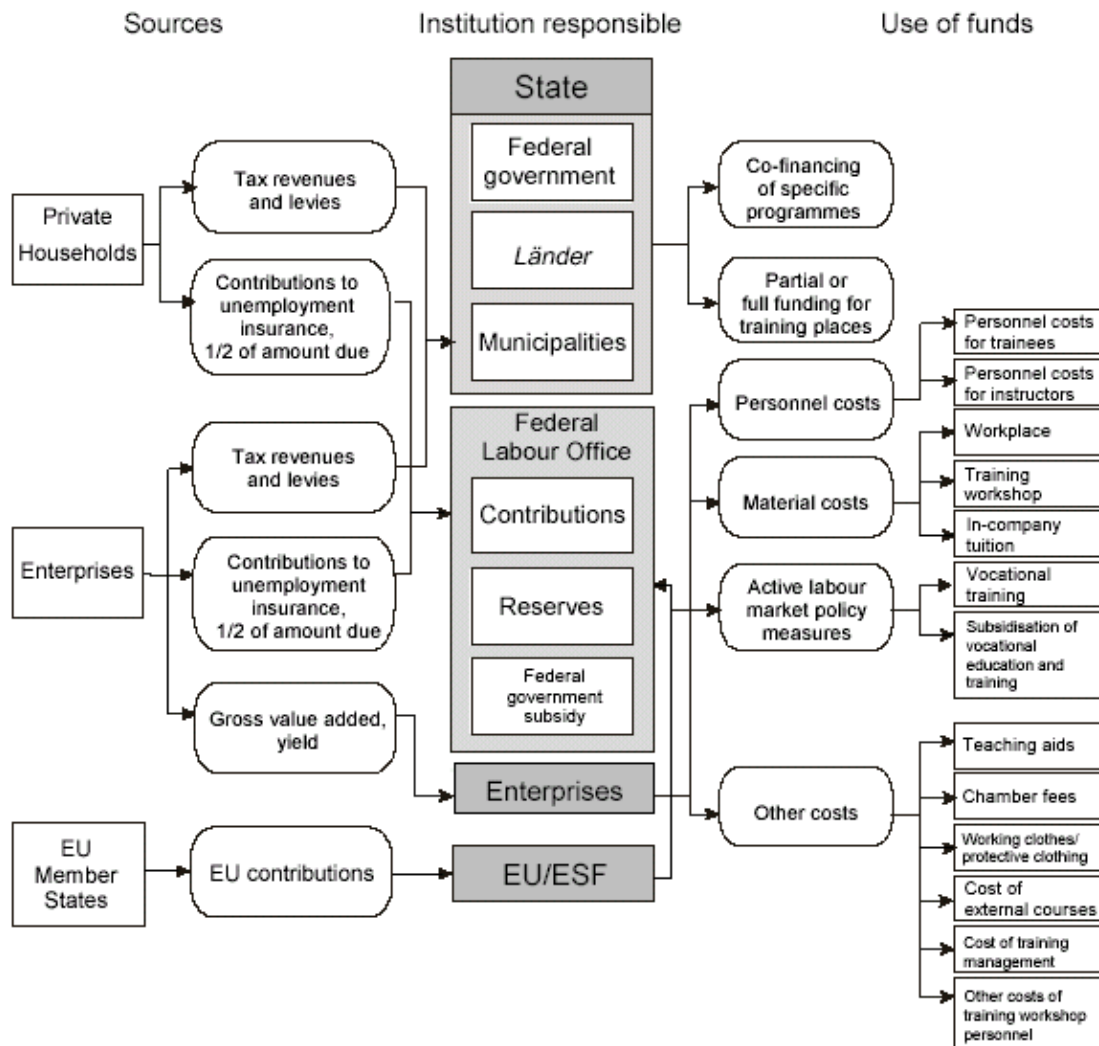
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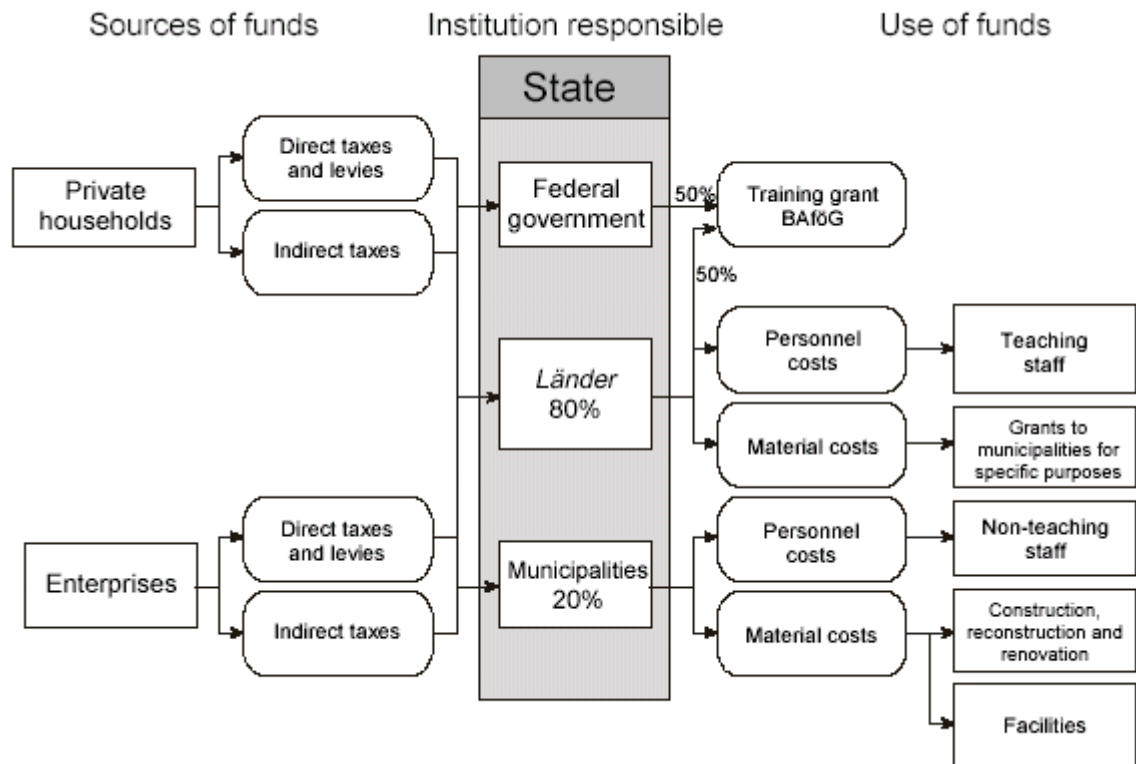
ANNEX 1. Figures

Figure 5. Funding structure of IVET in enterprises – apprenticeships



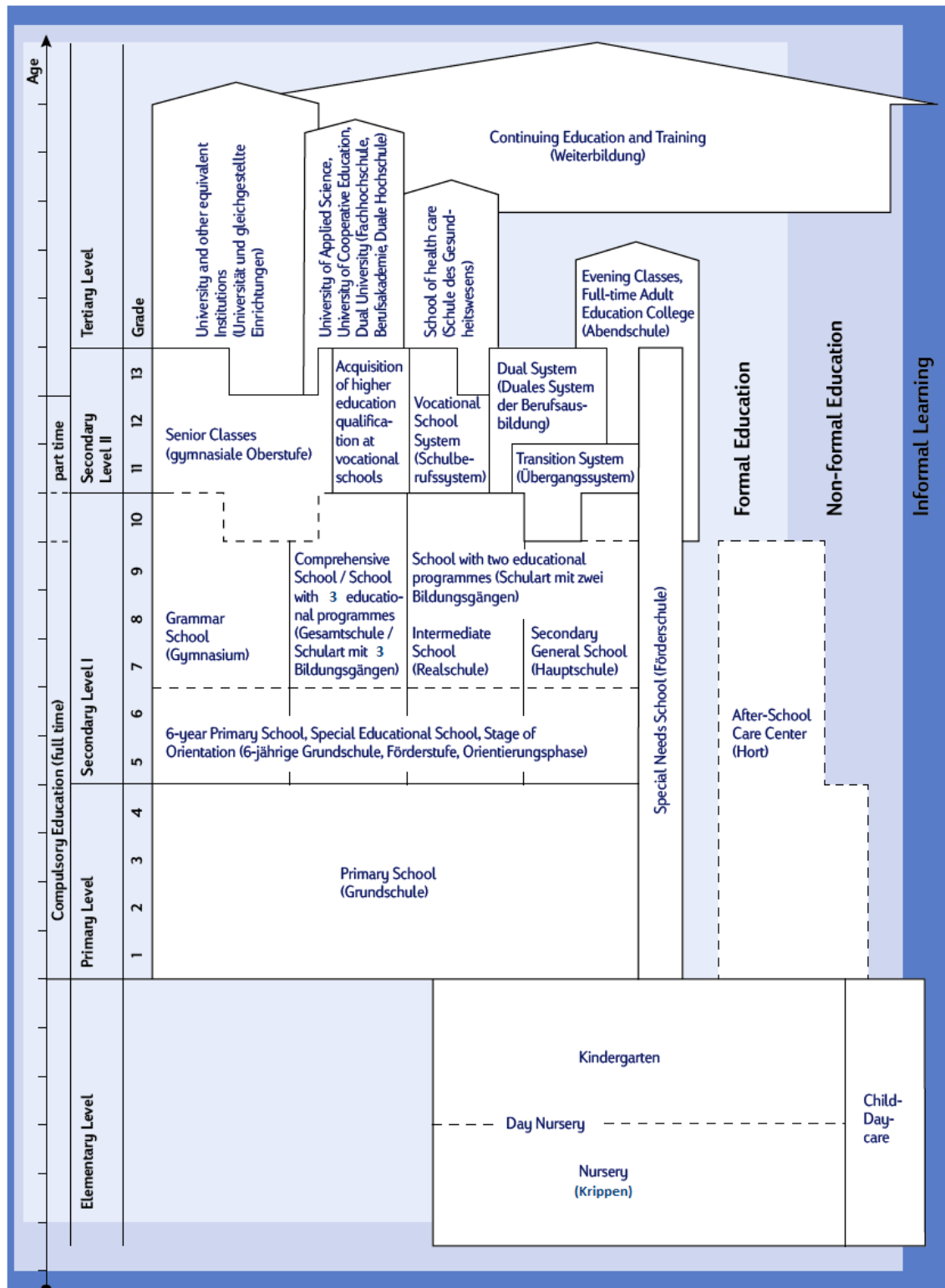
Source: Hummelsheim, S., Timmermann, D.: The financing of vocational education and training in Germany. Financial portrait. Thessaloniki 2000.

Figure 6. **Funding structure of IVET in vocational schools**



Source: Hummelsheim, S., Timmermann, D.: The financing of vocational education and training in Germany. Financial portrait. Thessaloniki 2000.

Figure 7. National education chart of the German education system



Source: Autorengruppe Bildungsberichterstattung (Hrsg.): *Bildung in Deutschland 2018*. Bielefeld 2018.

ANNEX 2. Laws and regulations

[URLs accessed 12.11.2018]

IVET

Federal law – in-company training within apprenticeships (dual system)

1. Grundgesetz (GG; Constitution) of 23.5.1949, as most recently amended by Article 1 of the Law of 13 July 2017 (BGBl. I p. 2347):

Article 12 (1) stipulates free choice and practice of occupations;

Article 72 (2) confers on the federation the right to legislate on vocational education and training;

Article 74 (1) No 11: the concurrent legislative powers of the federation extend to economic matters and to labour law.

www.gesetze-im-internet.de/gg/BJNR000010949.html

2. Berufsbildungsgesetz (BBiG; Vocational Training Act) of 23.3.2005, (Federal Law Gazette, BGBl. I p. 931), most recently amended by Article 14 of the Ordinance dated 17 July 2017 (Federal Law Gazette, BGBl. I p. 2581). It establishes the framework conditions for VET, which fall under economy and labour laws. The 2005 law comprehensively reformed VET and combined the 1969 Vocational Training Act and the 1981 Vocational Education and Training Promotion Act (*Berufsbildungsförderungsgesetz*) which regulated VET planning, reporting and statistical documentation, formed the basis for VET research and other work of the Federal VET Institute (BIBB). The aim of the reform was to safeguard and improve youth training opportunities and high-quality VET for all young people, irrespective of their social or regional origins. Major innovations were: the recognition of max. 25% training periods completed abroad (of the overall training period) in order to foster international mobility, the amendment of the enabling standard for the promulgation of training directives by the BIBB and the amendment of the crediting of prior VET to the training period.

www.gesetze-im-internet.de/bbig_2005/BJNR093110005.html

3. Betriebsverfassungsgesetz (BetrVG; Works Constitution Act) of 15.1.1972, as amended by the Proclamation of 26.9.2001 (BGBl. I p. 2518), most

recently amended by Article 6 of the Order of 17 July 2017 (BGBl. I p. 2509). It prescribes the participation rights of works councils in promoting and implementing training measures.

www.gesetze-im-internet.de/betrvg/BJNR000130972.html

4. Gesetz zur Ordnung des Handwerks (*Handwerksordnung* - HwO; Crafts Code) of 17.9.1953, as amended by the Proclamation of 24.9.1998 (BGBl. I p. 3074; 2006 I p. 2095), most recently amended by Article 6 of the Order of 30 June 2017 (BGBl. I p. 2143). It regulates vocational training in the crafts sector together with the Vocational Training Act.

www.gesetze-im-internet.de/hwo/BJNR014110953.html

5. Gesetz zum Schutz der arbeitenden Jugend (*Jugendarbeitsschutzgesetz* - JArbSchG; Protection of Young People in Employment Act) of 12.4.1976, (BGBl. I p. 965), as most recently amended by Article 13 of the Order of 10 March 2017 (BGBl. I p. 420). It contains particular protective regulations for trainees and young employees.

www.gesetze-im-internet.de/jarbschg/BJNR009650976.html

6. Ausbilder-Eignungsverordnung (AEVO; Ordinance on Trainer Aptitude) of 16.2.1999 (BGBl. I p. 157, 700), as revised by the Order of 21.01.2009 (BGBl. I p. 88). It prescribes standards for the occupational and work-related teaching abilities of instructors.

www.gesetze-im-internet.de/ausbeignv_2009/BJNR008800009.html

7. Sozialgesetzbuch III - Arbeitsförderung (SGB III; Social Code, Volume III – Employment Promotion) of 24.3.1997 (BGBl. I p. 594), as most recently amended by Article 3 of the Law of 12.07.2018 (BGBl. I p. 1147). It regulates institutional and individual support for the unemployed and for those threatened with unemployment.

www.gesetze-im-internet.de/sgb_3/BJNR059500997.html

8. Verordnung über die Bescheinigung von Grundlagen beruflicher Handlungsfähigkeit im Rahmen der Berufsausbildungsvorbereitung (*Berufsausbildungsvorbereitungs-Bescheinigungsverordnung* - BAVBVO; Directive on Certification of Bases of Vocational Competence in the Context of Pre-Vocational Training) of 16.7.2003 (BGBl. p. 1472)

www.gesetze-im-internet.de/bavbvo/BJNR147200003.html

Länder law – vocational schools

1. Article 7 (1) of the *Grundgesetz* of 23.5.1949, under which the entire educational system is under the supervision of the state.
2. Article 30 of the *Grundgesetz* of 23.5.1949, which prescribes that the exercise of governmental powers and the discharge of governmental functions be incumbent on the states because of the federal structure.
3. Articles 70, 71, 72, 73, 74 and 75 of the *Grundgesetz* of 23.5.1949, which confer the right to legislate on educational matters on the states.

CVET

Federal law

1. *Berufsbildungsgesetz* (BBiG; Vocational Education and Training Act) of 23.3.2005, (BGBl. I p. 931), as most recently amended by Article 14 of the Ordinance dated 17 July 2017 (BGBl. I p. 2581). Under *BBiG*, vocational further training is structured and organised in further training and chamber regulations; re-training is organised in re-training regulations.

www.gesetze-im-internet.de/bbig_2005/BJNR093110005.html

2. *Betriebsverfassungsgesetz* (BetrVerfG; Works Constitution Act) of 15.1.1972, as amended by the Proclamation of 25.09.2001 (BGBl. I p. 2518), most recently amended by Article 6 of the Order of 17 July 2017 (BGBl. I p. 2509). It confers on the works councils the right of consultation, participation and co-determination in continuing training issues.

www.gesetze-im-internet.de/betrvg/BJNR000130972.html

3. *Gesetz zur Ordnung des Handwerks* (*Handwerksordnung* – HwO; Crafts Code) of 17.9.1953, as amended by the Proclamation of 24.9.1998 (BGBl. I p. 3074; 2006; 2095), most recently amended by Article 6 of the Order of 30 June 2017 (BGBl. I p. 2143). It controls continuing training in crafts trades in conjunction with the Vocational Education and Training Act.

www.gesetze-im-internet.de/hwo/BJNR014110953.html

4. *Sozialgesetzbuch III - Arbeitsförderung* (*SGB III*; Social Code, Volume III – Employment Promotion) of 24.3.1997 (BGBl. I p. 594), as most recently amended by Article 3 of the Law of 12.07.2018 (BGBl. I p. 1147). Given the priority of integrating the unemployed into the primary labour market, it prescribes prioritising placement of unemployed people over recourse to labour promotion benefits and defines individual and institutional eligibility

for support of occupational further training, occupational retraining and orientation training.

www.gesetze-im-internet.de/sgb_3/BJNR059500997.html

5. Gesetz zur Förderung der beruflichen Aufstiegsfortbildung (Aufstiegsfortbildungsförderungsgesetz - AFBG; Upgrading Training Assistance Act) of 23.04.1996, as revised by Article 4 of the Law of 12 July 2018 (BGBl. I p. 1147). The new AFBG ('Meister-/Aufstiegs-BAföG') supports participants in vocational upgrading training measures by providing financial assistance to cover training measures and living costs. The AFBG is designed to establish and expand participation in higher vocational qualification, strengthen the motivation of young skilled staff in Germany to get involved in continuing training and improve occupational promotion opportunities for every individual.

www.gesetze-im-internet.de/afbg/BJNR062300996.html

6. Gesetz zur Stärkung der beruflichen Weiterbildung und des Versicherungsschutzes in der Arbeitslosenversicherung (Arbeitslosenversicherungsschutz- und Weiterbildungsstärkungsgesetz – AWStG; Law to reinforce CVET and unemployment insurance coverage) of 18 July 2016 (BGBl. I p. 1710). The new law improves the financial conditions in which the low-qualified, the long-term unemployed and older workers can have access to CVET, for example through providing allowances during training, and financial incentives for passing exams.

<https://www.jurion.de/gesetze/awstg/>

7. Gesetz zum Schutz der Teilnehmer am Fernunterricht (Fernunterrichtsschutzgesetz - FernUSG; Distance Learning Protection Act) of 24.8.1976, as amended by the Proclamation of 4.12.2000 (BGBl. I p. 1670), most recently amended by Article 70 of the Law of 29 March 2017 (BGBl. I p. 626). It regulates the licensing and form of contract of correspondence courses.

www.gesetze-im-internet.de/fernusg/BJNR025250976.html

8. Verordnung über die Voraussetzungen und das Verfahren zur Akkreditierung von fachkundigen Stellen und zur Zulassung von Trägern und Maßnahmen der Arbeitsförderung nach dem Dritten Buch Sozialgesetzbuch (Akkreditierungs- und Zulassungsverordnung Arbeitsförderung – AZAV, previously AZWV; Accreditation and Certification in Employment Promotion Ordinance) of 16.6.2004 (BGBl. I p. 1100), as revised on 27 January 2017 (BGBl. I p. 133). Labour market instruments

under Book III of the Social Code in particular, were reformed in 2011/2012 with the Act to Improve the Chances of Integration in the Labour Market (*Gesetz zur Verbesserung der Eingliederungschancen am Arbeitsmarkt*). The education and placement vouchers issued by the employment agencies may only be redeemed by certified providers, for certified measures.

www.gesetze-im-internet.de/azav/BJNR050400012.html

State law

1. Continuing training and adult education laws, some of which control the subsidisation of general, political and vocational continuing education and training events.
2. The state education laws and framework agreements of the Standing Conference of State Ministers of Education and Cultural Affairs, which regulate continuing education and training in specialised schools.
3. Bildungsurlaubsgesetze (educational leave laws), currently in effect in 14 states (all except Bavaria and Saxony). They guarantee employees' entitlement to limited release from work to participate in continuing education and training and ensure uninterrupted wage or salary.