



Developments in vocational education and training policy in 2015–17

GERMANY



Cedefop monitoring and analysis of VET policies

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policy in 2015-17**

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Aspects of vocational education and training context in 2015

Over the recent past, Germany has faced some disaffection with vocational education and training (VET). Information from the Federal Ministry for Education and Research in 2016 indicated a record high of 40 893 unfilled training places (European Commission, 2016, p. 8). In some regions and sectors, small businesses faced increasing difficulties in recruiting apprentices for dual training. The proportion of upper secondary students enrolled in VET programmes was in line with the EU average at 47% in 2015 ⁽¹⁾, but slightly lower over the preceding years: 47.8% in 2014 compared to 48% in the EU (Cedefop, 2017a, p. 45), and 47.5% in 2013 (European Commission, 2015, p. 8) against 48.9% in the EU. The number of students unsuccessfully looking for an apprenticeship place was in decline (European Commission, 2016, p. 8). However, the proportion of upper secondary initial vocational education and training (IVET) students on work-based programmes was still well above the EU average: 86.4% in 2014 against 34% in the EU (Cedefop, 2017a, p. 45). Adult participation in lifelong learning was below the EU average: 8.1% in 2015, against 10.7% in the EU (Cedefop, 2017a, p. 45) (Table 1).

A major campaign *Vocational training – practically unbeatable* promoting VET through various media had been carried out from 2011 to 2015 to attract more young people to VET. A pact on *Alliance for initial and continuing vocational training 2015-18 (Allianz für Aus- und Weiterbildung)* was signed in December 2014 between the federal government, the federal employment agency, industry, trade unions and regional governments. The alliance aimed to encourage young people to take up in-company training and promote the attractiveness of VET. On the adult side, a national strategy for adult literacy had been initiated in 2011 for 2012-16.

⁽¹⁾ Eurostat, data for 2015.

Table 1. Framework data: score on VET indicators in Germany and in the EU: 2010, last available year and recent trend

Indicator label	2010		Last available year		Recent trend (per year)			
	DE ^f	EU ^f	Yr	DE ^f	EU ^f	Range	DE	EU
Access, attractiveness and flexibility								
IVET students as % of all upper secondary students	A	A	'14	47.8 ^b	48.0 ^b _{E1}	'13-'14	▪ 0.3	▪ -0.9
IVET work-based students as % of all upper secondary IVET	A	A	'14	86.4 ^b	34.0 ^b _{E2}	'13-'14	▪ 0.2	▪ 0.1
IVET students with direct access to tertiary education as % of all upper secondary IVET			'14	91.5	69.2 ^{E3}	'13-'14	▪ -0.1	▪ -1.4
Employees participating in CVT courses (%)	39.0	38.0 ^e	'10	39.0	38.0 ^e			
Employees participating in on-the-job training (%)	28.0	20.0 ^e	'10	28.0	20.0 ^e			
Adults in lifelong learning (%)	7.8		'15	8.1	10.7 ^b	'13-'15	↗ 0.1	→ 0.0
Enterprises providing training (%)	73.0	66.0 ^e	'10	73.0	66.0 ^e			
Female IVET students as % of all female upper secondary students	A	A	'14	39.5 ^b	42.7 ^b _{E1}	'13-'14	▪ 0.4	▪ -1.0
Employees of small firms participating in CVT courses (%)	28.0	25.0 ^e	'10	28.0	25.0 ^e			
Young VET graduates in further education and training (%)			'15	25.2 ^b	33.0 ^b	'14-'15	▪ 0.9	▪ -0.3
Older adults in lifelong learning (%)	3.7	5.3	'15	3.8	6.9	'10-'15	→ 0.0	↗ 0.4
Low-educated adults in lifelong learning (%)	2.9		'15	3.4 ^C	4.3 ^b _C	'13-'15	↗ 0.2	↘ -0.1
Unemployed adults in lifelong learning (%)			'15	6.2 ^b	9.5 ^b	'13-'15	↗ 0.1	↘ -0.4
Individuals who wanted to participate in training but did not (%)	5.6 ^B	9.5 ^e _B	'11	5.6	9.5 ^e			
Job-related non-formal education and training (%)	82.9 ^B	80.2 ^e _B	'11	82.9	80.2 ^e			
Skill development and labour market relevance								
IVET public expenditure (% of GDP)			'13	30.58 ^b	0.56 ^b _{E4}	'12-'13	▪ -0.02	▪ -0.03
IVET public expenditure per student (1 000 PPS units)			'13	7.4 ^b	6.4 ^b _{E5}	'12-'13	▪ 0.1	▪ 0.0
Enterprise expenditure on CVT courses as % of total labour cost	0.8	0.8 ^e	'10	0.8	0.8 ^e			
Average number of foreign languages learned in IVET			'14	0.4 ^b	1.0 ^b _{E6}	'13-'14	▪ 0.0	▪ 0.0
STEM graduates from upper secondary IVET (% of total)	A	A	'14	32.6 ^b	30.0 ^b _{E7}	'13-'14	▪ 0.2	▪ -0.4
Short-cycle VET graduates as % of first-time tertiary education graduates			'14	0.1	9.3 ^{E8}	'13-'14	▪ 0.0	▪ 0.4
Innovative enterprises with supportive training practices (%)		41.5 ^{E9}	'12		41.6 ^{E9}			
Employment rate for IVET graduates (20- to 34-year-olds)			'15	88.0 ^b	77.2 ^b	'14-'15	▪ 0.4	▪ 0.3
Employment premium for IVET graduates			'15	21.4 ^b	5.3 ^b	'14-'15	▪ 0.4	▪ -1.0

Indicator label	2010		Last available year		Recent trend (per year)			
	DE ^f	EU ^f	Yr	DE ^f	EU ^f	Range	DE	EU
(over general stream)								
Employment premium for IVET graduates (over low-educated)			'15	34.8 ^b	23.7 ^b	'14-'15	▪ -0.7	▪ -0.1
Workers helped to improve their work by training (%)			'15	85.1	83.7			
Workers with skills matched to their duties (%)	50.7	55.2	'15	54.0	57.3	'10-'15	▪ 0.7	▪ 0.4
Overall transitions and labour market trends								
Early leavers from education and training (%)	11.8	13.9	'15	10.1 ^c	11.0 ^c	'10-'15	↘ -0.4	↘ -0.6
30- to 34-year-olds with tertiary attainment (%)	29.7	33.8	'15	32.3 ^c	38.7 ^c	'10-'15	↗ 0.5	↗ 1.0
NEET rate for 18- to 24-year-olds (%)		16.6	'15	8.7 ^b	15.8	'11-'15	↘ -0.4	↘ -0.3
Unemployment rate for 20- to 34-year-olds (%)		13.1	'15	5.9 ^b	12.9	'11-'15	↘ -0.2	↘ -0.1
Employment rate of recent graduates (%)		77.4	'15	90.4 ^{b,c}	76.9 ^c	'11-'15	↗ 0.5	→ 0.0
Adults with lower level of educational attainment (%)	13.9	27.3	'15	13.2 ^c	23.5 ^c	'10-'15	↘ -0.1	↘ -0.8
Employment rate for 20- to 64-year-olds (%)		68.6	'15	78.0 ^b	70.0	'11-'15	↗ 0.4	↗ 0.4
Employment rate for 20- to 64-year-olds with lower level of educational attainment (%)		53.4	'15	58.5 ^{b,c}	52.6 ^c	'11-'15	↗ 0.2	↘ -0.1
Medium/high-qualified employment in 2020 (% of total)			'16	87.8 ^d	82.8 ^d			

(^f) UOE (UNESCO OECD Eurostat) back reconstruction of 2010 values based on ISCED (international standard classification of education) 2011 not yet available.

(^b) AES (adult education survey) 2011, used as proxy for 2010 baseline.

(^c) 2014 b flags in Eurostat online tables ignored on the basis of other relevant Eurostat metadata.

(^d) Forecast made in 2016.

(^{E1}) Based on 28 countries; partial information for NL.

(^{E2}) Based on 25 countries (missing: ES, PL, RO); partial information for NL.

(^{E3}) Based on 27 countries (missing: NL); partial information for EL, IT.

(^{E4}) Based on 19 countries (missing: BE, DK, IE, EL, FR, HR, IT, PT, SK).

(^{E5}) Based on 21 countries (missing: DK, IE, EL, FR, HR, IT, PT).

(^{E6}) Partial information for NL.

(^{E7}) Based on 25 countries (missing: HR, IT, UK).

(^{E8}) Based on 23 countries (missing: BE, IE, FR, UK).

(^{E9}) Based on 22 countries (missing: DE, IE, EL, NL, SI, UK).

(^b) Break after 2010, therefore baseline data not included.

(^u) Eurostat: 'low reliability'.

(^z) Eurostat: 'not applicable'.

(^e) Eurostat: 'estimated'.

NB: EU refers to EU-28, unless otherwise specified. Arrows ↗ or ↘ signal a positive or negative trend based on more than two data points and of magnitude 0.1 per year or more. Trends based on more than two data points but of smaller magnitude are indicated by →; trends based on two points only are marked ▪. Trends are estimated by means of regression models.

Source: Cedefop, 2017a, p. 45.

CHAPTER 1.

MTD 1 – All forms of work-based learning with special attention to apprenticeships

In parallel to the development of the *Alliance for initial and continuing vocational training 2015-18*, the Federal Institute on VET (BIBB) in 2015 started 12 pilot projects aiming to ensure the sustainability of VET. With a EUR 6 million budget, the projects intend to develop vocational competences. Up until 2019, they will experiment and evaluate relevant curriculum concepts, digital teaching, learning materials and examination questions for IVET and continuing vocational education and training (CVET). These projects will lead – among others – to recommendations for organising VET along with related didactic guidance. Emphasis is put on a strong partnership between businesses, scientific accompaniment and the responsible authorities.

At the same time, Germany was impacted in 2015 by the inflow of 1 million refugees ⁽²⁾. To ensure integration in the labour market and in the general and vocational education and training system, the Social code was amended to make it easier for asylum seekers and individuals with tolerated residence status to undertake internships and in-company training.

1.1. Policy priorities for 2016-20

For 2016-20, the country's priorities in this area, as set by the Director General for vocational education and training, are two-fold:

- (a) for apprenticeships:
 - (i) improve the attractiveness of VET and disseminate the message of equivalence between vocational and academic education through the implementation of various policy actions, awareness raising campaigns and programmes. The aim of this policy is to maintain the share of apprentices and counteract the current trend towards academic education;
 - (ii) respond to the impact of digitisation or industry 4.0 on qualification profiles both in VET and higher education and training regulations.

⁽²⁾ <https://www.bamf.de/SharedDocs/Meldungen/DE/2016/201610106-asylgeschaefststatistik-dezember.html>

Digital innovation requires an update of the appropriate qualification profiles, training regulations and curricula. To this end, the Education Ministry and the Federal Institute for VET conduct the pilot project *VET 4.0* including the study *Vocational training 4.0*;

- (b) for work-based learning in school-based VET:
 - (i) enable general education pupils to become acquainted with work-based learning by allowing them to do work placements during their school year, possibly for several weeks;
 - (ii) upgrade work-based learning in school-based VET programmes.

1.2. Main actions taken in 2015-17

1.2.1. Updating training regulations in IT occupations

Preliminary investigations on information technology (IT) occupations took place from February 2015 to April 2016; they were followed by an online survey until June 2016 and a final recommendation report in December 2016. The Federal Institute for VET investigated whether the current dual training programmes for four IT occupations should be modernised. The target audience comprised company managers, human resources and training staff, skilled IT workers, trainees, workers' councils, bodies representing young people and trainees, and vocational school teachers. The results of the online survey were used to inform the final report published in December 2016⁽³⁾. Based on this report and recommendations, stakeholders (particularly employer and employee organisations) are currently being asked to check the need to modernise training regulations.

1.2.2. Launch of *VET 4.0* project: effects of digital innovation on vocational training

Digital innovation affects manufacturing processes, work organisation and qualification profiles. Aiming to design relevant training regulations, the Federal Ministry of Education, in cooperation with the Federal Institute on VET, started the pilot project *VET 4.0* for the period from February 2016 to April 2018. Various projects have been brought together under this umbrella, such as a study on *Vocational Training 4.0*, the preliminary examination of the potential restructuring of IT occupations, and the new programme *Digital transformation in inter-*

⁽³⁾ www.bibb.de/voruntersuchung_itberufe

company vocational training centres (ÜBS) and competence centres. VET 4.0 aims to contribute to the implementation of the digital agenda through continuous exchange of information between academia, policy-making and practice. The outcomes will determine the changes needed for appropriate qualification profiles, training regulations and curricula ⁽⁴⁾.

1.2.3. New 2016-18 campaign to promote dual VET

Given the increasing trend towards academic education, the Federal Education and Economic Affairs Ministries have set up a new joint campaign to present dual VET (apprenticeship) as an attractive option. In line with the Director General for vocational education and training (DGVT) priority, this new campaign *Vocational training – practically unbeatable* addresses more specific target groups. Its allocated budget is EUR 6 million per year. A motivational message was broadcast over 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 education pathway.

⁽⁴⁾ https://www2.bibb.de/bibbtools/tools/dapro/data/documents/pdf/at_78154.pdf
<https://www.bibb.de/en/49603.php>

CHAPTER 2.

MTD 2 – Quality assurance mechanisms in line with EQAVET and continuous information and feedback loops to IVET and CVET

Set up in 2008 as the quality assurance national reference point (QANRP), the German reference point for quality assurance in vocational education and training (DEQA-VET), is hosted by the Federal Institute for Vocational Education and Training. It covers IVET, CVET/adult education, and non-formal learning.

To ensure quality in VET, the vocational education and training Act (*Berufsbildungsgesetz, BBiG*) and the Crafts Act (*Handwerksordnung, HWO*) describe the required standards for training facilities and trainers, training curricula and examinations. Training regulations are revised every few years to keep pace with rapid technological and organisational change. At national level, the main board of the Federal Institute (*BIBB Hauptausschuss*) is the principal advisory body of the Federal Government on VET, including standard setting and designing training regulations. At regional state level, Länder boards (*Landesausschuss*) advise the Länder governments on VET policy, including issues related to ensuring quality. 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. 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. Regulations on training facilities and trainers are usually monitored by the local chambers of industry and commerce and chambers of crafts and trades.

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 further training. The Federal Ministry of Education and Research (BMBF) funds regular checks of CVET providers through an independent foundation. BIBB, together with the German Institute for Adult Education (DIE), operates the online platform *wbmonitor* ⁽⁵⁾ which is dedicated to supporting CVET in Germany. It conducts a yearly survey of public and private CVET providers and monitors developments in the labour market.

The BMBF publishes an annual report on VET, providing a wealth of information and analysis on various aspects of the development of vocational education and training. It is accompanied by the BIBB data report which brings together data from different sources (federal statistical office, statistical offices of the Länder, 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.

There are several other projects informing VET provision:

- (a) the qualifications and occupational field projections (*QuBe-Projekt.de*) run by BIBB show how the supply of and demand for qualifications and occupations may develop in the long term;
- (b) the national education report analyses transitions, training histories and the labour market results of vocational education and training;
- (c) the German educational panel study (NEPS) investigates educational returns, competence development during lifelong learning and transitions from VET to the labour market.

Information related to CVET is collected at system and provider level by different institutions and stakeholders:

- (a) the Institute for Employment Research (*Institut für Arbeitsmarkt und Berufsforschung*, IAB) establishment panel survey has been providing information about continuing training in German companies since 1995;
- (b) the European continuing vocational training survey (CVTS), in which 3 047 German companies participated in 2010;
- (c) the continuing training monitor (*wbmonitor*), the biggest annual survey of CVET providers in Germany to help monitor developments in the labour market and identify training needs.

In addition, the framework curriculum required for the school section of dual education and training is revised by the standing conference of the Länder Ministers of Education and Cultural Affairs (KMK). The initiative for updates or

⁽⁵⁾ <https://wbmonitor.bibb.de>

new occupational profiles usually comes from trade associations, employers' umbrella organisations, trade unions or the federal VET institute.

2.1. Quality assurance mechanisms in line with EQAVET

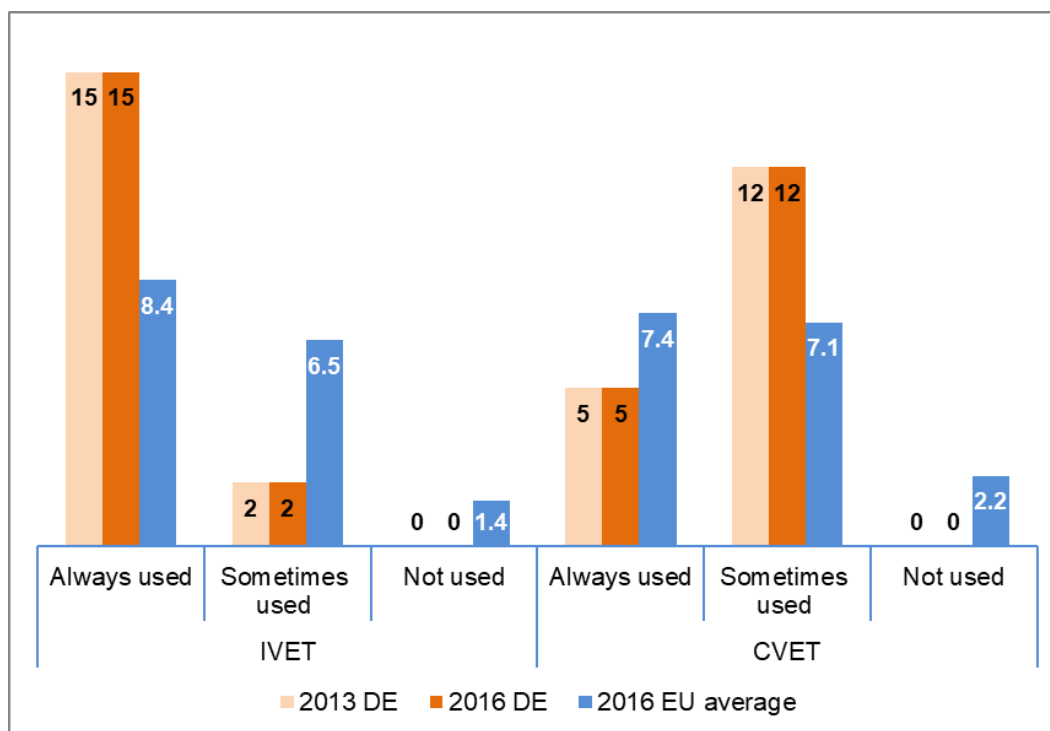
The country's priorities in this matter for 2016-20, as set by the Director General for vocational education and training, are two-fold:

- (a) all regional states have quality assurance programmes for their schools. Schools have external and internal quality assurance programmes. External quality assurance is guaranteed through school inspection and/or special agencies or departments. Internal school inspection mostly follows a system of quality assurance through evaluation and improvement which is more specific than European quality assurance in vocational education and training (EQAVET) and addresses employability, customer satisfaction, pedagogy and development of the teaching staff;
- (b) quality assurance in apprenticeship programmes is guaranteed through the chambers, more specifically their assessment boards, where enterprises, unions and teachers are equally represented. Chambers focus on competences gained in the programmes.

In 2016, the Federal Ministry of Education and Research evaluated the Vocational Training Act and concluded that BBiG has proved successful without needing to introduce any fundamental systemic changes. However, the evaluation identified potential for further progress and possible legislative actions, such as generating training certificates in electronic format.

The situation on the systematic use of EQAVET indicators to monitor the VET system ('always used' item in Figure 1) has remained unchanged compared to 2013. Germany was above the EU average in IVET and below in CVET in 2016.

Figure 1. Use of EQAVET indicators



NB: Of the 17 indicators suggested by the 2009 EQAVET recommendation, 15 were 'always used' in IVET in 2013 and 2016, compared to 8.4 in the EU on average in 2016.

EU average was calculated based on available information for 31 out of 35 VET systems.

Germany did not provide information related to the use of indicators in 2016 so the assumption is that information remained unchanged.

Source: Cedefop calculations based on EQAVET Secretariat surveys for 2013 and 2016.

2.2. Continuous information and feedback loops in initial VET

For 2016-20, the country's new priority in this matter, as set by the Director General for vocational education and training, is extending the *ASCOT* initiative, funded with the aim of developing scientifically reliable computer-based procedures for measuring vocational skills.

In 2015-16, BIBB examined whether dual training for four IT occupations would need modernising (Section 1.2.1) ⁽⁶⁾. An online survey was carried out, primarily among companies which have provided training in these occupations or were planning to do so. BIBB has also been carrying out research to understand the impact of digitisation on qualification profiles, training regulations and curricula (Section 1.2.2). This includes the study *Vocational training 4.0* more

⁽⁶⁾ www.bibb.de/voruntersuchung_itberufe

specifically targeted at informing the design of training regulations for dual VET programmes (apprenticeships).

The *ASCOT* initiative, focusing on the assessment of vocational skills and competences using technology-based processes, was extended to 2016-19 with the aim of implementing the computer-based procedures developed in 2015 as part of the first phase of the initiative.

CHAPTER 3.

MTD 3 – Access to VET and qualifications for all through more flexible/permeable systems, guidance and validation of non-formal and informal learning

3.1. Policy priorities for 2016-20

The country's priorities in this area for 2016-20, as set by the Director General for vocational education and training, are two-fold/three-fold:

- (a) for young people:
 - (i) set up programmes for young people who left education early or failed school degrees and are not yet ready to enter full VET qualification programmes;
 - (ii) expand the *Educational chains* initiative (*Abschluss und Anschluss - Bildungsketten bis zum Ausbildungsabschluss*);
 - (iii) make the *Alliance for initial and further training 2015–18* a success story;
 - (iv) enable quick and easy access to VET qualifications (or the labour market) for recently arrived young refugees;
- (b) for adults, test the pilot project *ValiKom* with a view to establishing a framework to validate occupational skills and competences.

3.2. Main actions taken in 2015-17

3.2.1. Guidance

3.2.1.1. *Expanding career orientation/coaching/counselling: the Educational chains initiative*

Measures within the initiative *Educational chains* leading to vocational qualifications (*Bildungsketten*) were expanded, mostly to strengthen counselling and coaching. *Bildungsketten* is jointly funded by the Federal Education and Labour Ministries, the federal employment agency and the European Social Fund (ESF). For the 2015-18 period, up to 500 000 analyses and career coaching for 115 000 school learners are anticipated. In 2016, the initiative was extended to grade 11 of grammar schools (European Commission, 2016, p. 8).

3.2.1.2. *Telephone guidance service*

The Federal Ministry of Education and Research offers a telephone information and counselling service supporting individuals who are considering their further education options. This started as a project in 2015-16 to analyse demand for, and the potential of, such a service and explore potential success factors in light of contextual situations in the different Länder. It became a permanent offer in 2017 ⁽⁷⁾.

3.2.2. **Permeability and flexibility**

3.2.2.1. *Training guarantee*

The 2015-18 *Alliance for initial and further training* ⁽⁸⁾ was concluded by the Federal Government and Länder, business and industry, the unions and the federal employment agency (BA) at the end of 2014. 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 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.

Within the alliance, the industry has committed to providing 20 000 places annually; 17 500 young people took up this type of training in 2015. Evaluations had proved that around 70% of young people moved into regular apprenticeships within six months after completing this programme.

The partners also agreed to offer training places for assisted VET for disadvantaged learners; this includes mentoring adapted to trainee needs. Trainees are eligible to receive a basic training allowance during the prevocational phase. They can also receive continued support throughout prevocational training and apprenticeship from the same provider.

⁽⁷⁾

<https://translate.google.gr/translate?hl=en&sl=de&tl=en&u=https%3A%2F%2Fwww.bmbf.de%2Fde%2Fservicetelefon-zur-weiterbildung-1369.html>

⁽⁸⁾ <http://www.aus-und-weiterbildungsallianz.de>

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

3.2.2.2. *Access to VET for university drop-outs*

The Federal Education Ministry has been supporting country-wide pilots to ease access to VET for university dropouts ⁽⁹⁾ (28% in bachelor programmes) to address predicted shortages of skilled workers. Small and medium-sized enterprises (SMEs) are supported in hiring more young people of this target group. The initiative focused on:

- (a) bringing together university dropouts and companies that provide training places (especially SMEs). This is the objective of regional integration projects funded and supported through the *Jobstarter+* programme launched early 2015;
- (b) a central online information platform, launched in 2016 to provide information on alternative qualification paths inside and outside universities, and on opportunities to transfer acquired competences in line with the vocational training Act and crafts code (*Handwerksordnung*, HwO);
- (c) setting up counselling services at the main higher education institutions in the Länder.

3.2.2.3. *Skills upgrading and occupational advancement*

The 2016 Amendment of the legislation that promotes regulated further training to upgrade qualifications (*Aufstiegsfortbildungsförderungsgesetz*) aims to expand the target groups. It encourages young skilled workers to participate in further training and also offers an incentive to start one's own business. It opened up to bachelor degree holders with relevant occupational experience. It ensures the legal entitlement to funding for training to upgrade a qualification, as in acquiring a master craftsperson's certificate or a comparable qualification. The budget allocation in 2015 was EUR 183.5 million, jointly financed by Federal and Länder governments. It is the most comprehensive CVET funding instrument and seen as a main pillar and driver of skills upgrading and occupational advancement. Data ⁽¹⁰⁾ on recipients of funding for training to upgrade their qualifications

⁽⁹⁾ <https://www.bmbf.de/de/neue-chancen-fuer-studienabbrecher-1070.html>

⁽¹⁰⁾ The annual *wbmonitor* by BIBB and the Adult Education Institute – Leibniz centre for lifelong learning, the largest annual survey of continuing education and training providers and a platform for information exchange on the heterogeneous CVT

published in July 2015 pointed to a rise of 0.2% compared to the previous year. Most attendees (83%) were 20 to 35 years old; almost 50% of the training measures were in trade and industry.

3.2.3. Transparency, recognition, validation

3.2.3.1. National qualifications framework ⁽¹¹⁾

The national qualifications framework for lifelong learning in Germany (*Deutscher Qualifikationsrahmen für lebenslanges Lernen, DQR*) has eight levels and is based on learning outcomes. The DQR was referenced to the European qualifications framework (EQF) in 2012 and was given official status in May 2013. VET qualifications are present on nearly all DQR/EQF levels except level 8, with three-year apprenticeships leading to level 4.

In 2016, 21 qualifications from regulated further training were allocated to the DQR. In 2017, criteria and procedures to include non-formal learning are being developed. In spring 2017, the DQR committees decided to allocate qualifications from general education to the framework: they are being included in the DQR database and included in the list of assigned qualifications. Also, during the reporting period, the Federal Ministry of Education and Research has launched a study, supported by EU funding, on the use of the DQR by main target groups: learners, workers, employers, education providers. First results were scheduled for 2017.

3.2.3.2. ECVET ⁽¹²⁾

A European credit system for vocational education and training national contact point (ECVET-NCP) and a team of national ECVET experts are in place. In 2015-17, different ECVET technical components (credit system, units, credit/unit transfer) have been tested for IVET and CVET through EU and national projects (*DECVET, Job-starter connect*). In 2016, in line with the national priority for improving the quality of learning abroad, tasks previously carried out by the ECVET-NCP were transferred to the *Erasmus+* national agency.

landscape, captures the economic climate in CVT (continuing training survey climate index) and structural data on providers.

⁽¹¹⁾ Cedefop, 2017b.

⁽¹²⁾ Source: the ECVET users' group members.

3.2.3.3. *Validation* ⁽¹³⁾

There is no systematic and standardised approach for validation, though elements of a national strategy are under development. Access to higher education for qualified workers has been in place since March 2009. 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 equivalent by an appropriate authority. Procedures to credit non-formal and informal learning were developed and tested in the *Transitions from VET to higher education* initiative (*Übergänge von der beruflichen in die hochschulische Bildung*, ANKOM) ⁽¹⁴⁾. Legislation for validation of non-formal and informal learning in VET is in place. Since 2014, a working group has been convened by the Federal Ministry of Education and Research on the subject of validation of non-formal and informal competences.

The *ValiKom* project ⁽¹⁵⁾, agreed between the BMBF and the umbrella organisations of the chambers, has operated since 2015. *ValiKom* is considered as the reference project to set up a validation system in Germany, addressing adults who acquired skills and competences through work but lack a formal qualification and a certificate. It addresses not only low-skilled adults working in Germany but also employees from a variety of backgrounds 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 training Act.

In 2015, the BIBB and the *Bertelsmann Stiftung* ⁽¹⁶⁾ put in place expert monitoring of opportunities and limitations of validation methods for recognising non-formal and informal learning.

3.2.4. **Integrating refugees**

Integrating refugees in the labour market and in the education and VET system has become a priority.

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 in Germany instead of the previously required four years. Support is in

⁽¹³⁾ Cedefop, 2017b; Cedefop et al., 2017.

⁽¹⁴⁾ <http://ankom.his.de/beschluesse>

⁽¹⁵⁾ <http://www.bildungsspiegel.de/news/weiterbildung-bildungspolitik/17-valikom-chancen-fuer-menschen-ohne-berufsabschluss>

⁽¹⁶⁾ <https://www.bertelsmann-stiftung.de/en/home/>

the form of training loans, vocational training support grant, and the so-called assisted training scheme.

The Integration Act ⁽¹⁷⁾ was adopted in May 2016 and aims to support refugee integration into society through a support-and-challenge approach. Refugees with prospects of staying permanently will get integration courses at an early stage, and legal certainty while undergoing vocational training (exceptional leave to remain in country while undergoing training; two-year right to residency for those in training enterprises). They will get a chance of meaningful employment while their asylum claim is being processed: serving meals in a refugee shelter is an example. The federal employment agency three-year suspension of labour market priority checks will make it easier for refugees to take up a job. However, the settlement permit will be dependent on the refugees' will to integrate. Asylum seekers will be assigned a place of residence (better means of control are foreseen) and will be granted a residency permit along with their arrival certificate, so they have legal certainty and early access to integration courses and the labour market.

Within the framework of the *Alliance for initial and continuing vocational training* ⁽¹⁸⁾, a 2015-18 programme for integration through qualification, jointly funded by the ESF, aiming to integrate migrants into the labour market focuses on guidance and counselling for the recognition of skills and competences ⁽¹⁹⁾. A 2015 initiative by the Federal Education Ministry and the Chamber of Commerce and Industry (ProRecognition) was launched to provide information and guidance on recognition in relation to eight foreign countries. Other services include a dedicated portal ⁽²⁰⁾ and a telephone hotline. Measures leading to recognition of qualifications or labour market integration in line with people's previous training were also adopted.

In 2015-17, a specific programme ⁽²¹⁾ supported by the ESF, *German for professional purposes*, was carried out to help people with migrant background integrate into society and the world of work (EUR 242 million).

⁽¹⁷⁾ <http://www.cedefop.europa.eu/en/news-and-press/news/germany-new-act-aid-refugee-integration>
https://www.bundesregierung.de/Content/EN/Artikel/2016/07_en/2016-05-25-integrationsgesetz-beschlossen_en.html;jsessionid=9EF13197E8E4E1732BFC105F9A814042.s1t1

⁽¹⁸⁾ <http://www.aus-und-weiterbildungsallianz.de>

⁽¹⁹⁾ <https://www.anerkennung-in-deutschland.de/html/en/index.php>

⁽²⁰⁾ <http://www.make-it-in-germany.com/en>

⁽²¹⁾ www.bamf.de

CHAPTER 4.

MTD 4 – Key competences in both IVET and CVET

Compared with general education graduates, those who completed VET programmes feel they have:

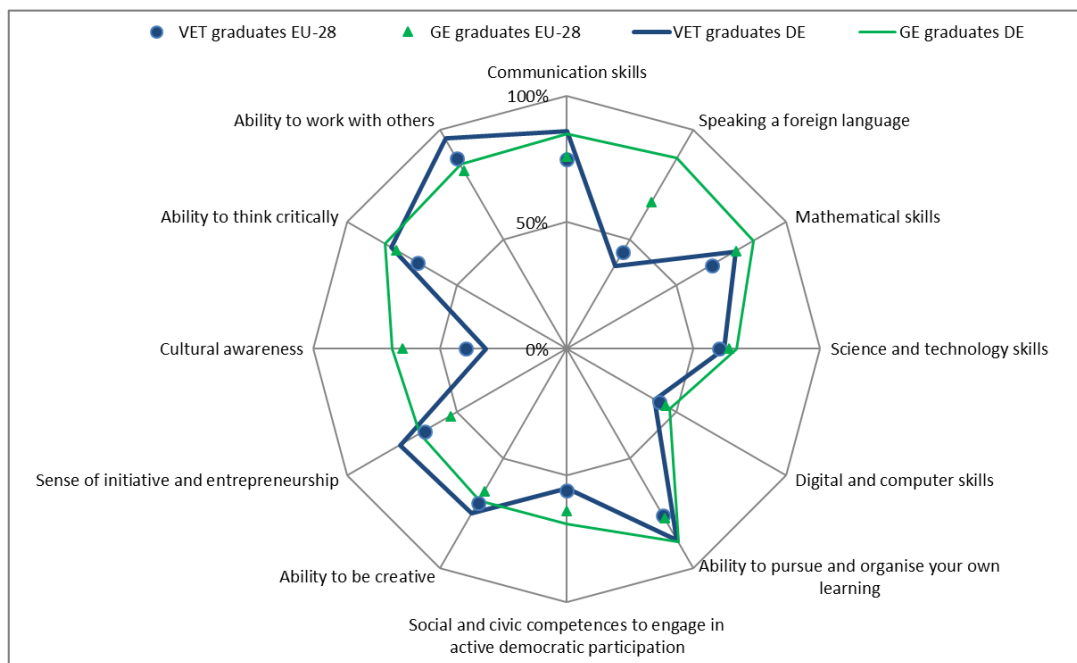
(a) stronger:

- ability to work with others;
- sense of initiative and entrepreneurship;
- ability to be creative;

(b) weaker:

- foreign language speaking;
- cultural awareness;
- social and civic competences (Figure 2).

Figure 2. **Self-evaluation of acquired skills in general education and VET**



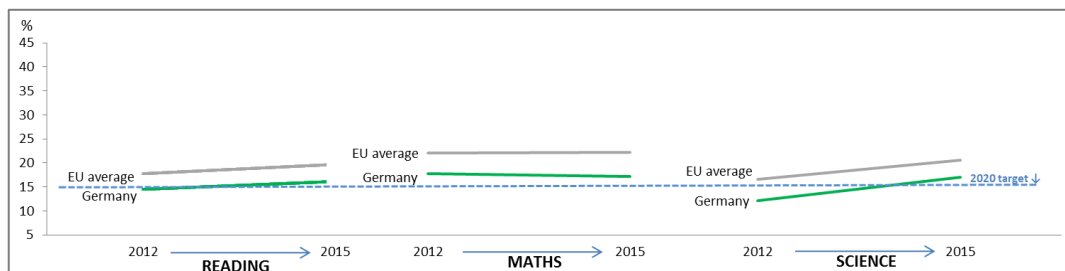
NB: GE stands for general education.

Respondents who attended upper secondary education. Interviewees were asked in summer 2016 about their overall experience in upper secondary education. Aggregated data do not take account of different types and sectors of VET and age groups of respondents.

Source: Cedefop, 2017c.

The context of key competences in 2015 was mainly characterised by an increasing share of young low achievers in reading and science and a positive trend for maths compared with 2012 (Figure 3). The share of low achievers in Germany is smaller than in the EU on average, where the trend is similar.

Figure 3. **Share of 15-year-olds with low achievement in reading, maths and science**



NB: Low achievement means failing level 2 on the PISA (programme for international student assessment) scale.

Source: OECD, 2014; OECD, 2016.

As VET enrolls 47% of all upper secondary learners in the country ⁽²²⁾, this trend is likely to be reflected in the key competences trained for in VET programmes through vocational action competence (*berufliche Handlungskompetenz*). This refers to 'empowering the individual to undertake independent and wide-ranging vocational activities in a variety of contexts' (Frank and Schreiber, 2006, pp. 6-10), and covers professional, social and personal competences, including key competences ⁽²³⁾.

4.1. Key competences in initial VET

The country's priority for 2016-20 in this area, as set by the Director General for vocational education and training, is to have all programmes based on learning aims (*Lernziele*) and learning outcomes.

The *Digital media in VET* programme covers the 2012-19 period. It funds national digital training projects that develop new learning scenarios and modern initial and continuing training courses. In 2017, the programme expanded with new digital concepts for VET, such as social augmented learning using virtual reality glasses. Within the framework of the programme, a new [web portal](#) of the

⁽²²⁾ Calculated from Eurostat; data for 2015.

⁽²³⁾ For more information on key competences in VET see Hensen and Hippach-Schneider, 2016a.

Federal Ministry of Education and Research has provided information since 2015 on the use of digital media in vocational training, with emphasis on project findings which are of particular benefit to vocational education and training. Among the projects supporting key competences are:

- (a) *Blok*, an online record of training which can be jointly and securely used by all stakeholders involved in dual training. This is an integrated development portfolio which supports relevant topics such as the transparent progress of learning objectives, strengthening of autonomy, and initiation of processes of reflection;
- (b) *competence workshop*, focused on providing conceptual and digital support to training in companies, at vocational schools and at inter-company vocational training centres. Under the title *Training in a practically-oriented way*, it has made a cross-media series of instruments available to training staff and teachers. The aim is to foster competences and work process oriented training;
- (c) *media community*, a community of practice for the media and print industry which learners, trainees, and even skilled workers can use to prepare for examinations or obtain specialist information. The system includes comprehensive lexicons, wiki's, learning groups and tools for social augmented learning using augmented reality ⁽²⁴⁾.

The investigation carried out by the Federal Institute for VET in 2015-16 (Section 1.2.1) also touches on developing key competences as it aims to understand whether existing dual training programmes for four IT occupations should be modernised.

4.2. Key competences in continuing VET

For 2016-20, the country's priority in this area, as set by the Director General for vocational education and training, is to strengthen or expand existing actions, measures and programmes.

In the reporting period, measures focused on developing pilot projects, promoting adult literacy and entrepreneurship, and supporting refugee integration.

⁽²⁴⁾ <https://www.bmbf.de/de/ausbilder-erfahren-digitale-kompetenzen-3516.html>

4.2.1. Information phone line, consultancy service, and continuing education bonus

Piloted since 2015, the national information phone line and the continuing training consultancy service portal have been transformed into permanent services since 2017. The 2014-17 programme for continuing education bonus for low-income learners is being considered for extension.

4.2.2. National strategy for literacy and basic education for adults

A growing demand of the world of work, even for so-called basic jobs, is that employees have comprehensive skills, including literacy and other key competences. To support people who lack these essential skills, the federal and Länder governments had joined forces and launched a national strategy for literacy and basic education for adults in 2011-16. It sought to anchor awareness of the issue sustainably in society and stakeholders. Measures included *Reading and writing: my key to the world*, an information campaign (EUR 10 million) and the programme *Workplace-oriented literacy and basic education for adults* (EUR 20 million). In 2016, the strategy was followed by the *Decade for literacy*.

4.2.3. Integrating refugees

The federal government invests in piloting, structural development and implementation of innovative projects and instruments supporting the integration of refugees. This includes analysing, developing and implementing culture-neutral support and career orientation. Increasingly, tailored mechanisms support refugees in exploring and developing pre-vocational competences while learning German. Dedicated initiatives in VET schools equip young and adult refugees with language skills, together with a basic pre-VET qualification. The *Lesestart* literacy programme also helps refugees to learn language with support of volunteer reading mentors.

Local continuing VET initiatives also help refugees integrate and learn German. For example, the *Training plus language* programme in Osnabrück comprises work-related language classes and orientation, and practical vocational modules. Participants undergo work experience in information and communication technology (ICT), trades, production, sales, nursing/care work and warehousing/logistics.

CHAPTER 5.

MTD 5 – Systematic initial and continuous professional development of VET teachers, trainers and mentors

Teacher training for VET schools comes under the jurisdiction of the Länder. In VET schools, there are two types of teachers (Hensen and Hippach-Schneider, 2016b):

- (a) university/higher education graduates, holding a master degree in a specific technical field besides studies in didactics/education theory and a second subject, plus a period of practical training at a vocational school and in a company. Organisation and implementation vary by Land. They teach job-related theory and general education subjects;
- (b) VET qualification holders with experience in business and industry and an EQF level 6 qualification as master craftsperson or technician, and having successfully completed training in pedagogy; or teachers of the respective subject areas (for example office management). They are in charge of VET practice in school facilities like workshops, kitchens or practice firms (*Werklehrer, Technische Lehrer* or *Fachlehrer*).

To acquire teaching credentials (*Lehramtsbefähigung*), future teachers need to pass an induction phase/probationary period of 12 or up to 24 months. A framework agreement by the standing conference of Ministers of Education and Cultural Affairs, originally adopted in 1995 and amended in 2013, regulates the process.

Trainers in the dual system/apprenticeships are:

- (a) skilled workers, journeymen or foremen who train apprentices as part of their job. Few have had preparatory training or are formally qualified for this activity;
- (b) full-time trainers who usually hold a master craftsperson qualification and must have passed the exam in line with the trainer aptitude regulation (*Ausbilder-Eignungsverordnung*).

The legal basis for the training of in-company trainers is the crafts code (*Handwerksordnung*) and the vocational training Act. Competence requirements for in-company trainers are set out in the vocational training Act:

- (a) be at least 24 years old;

- (b) have a VET qualification in a related area and sufficient professional experience;
- (c) have occupation-related knowledge and competences in pedagogy that meet the requirements of the trainer aptitude regulation.

Chambers are responsible for the aptitude exams and they also offer courses to help future in-company trainers acquire the necessary competences. Exam tasks include:

- (a) plan and reflect on teaching/learning processes;
- (b) accompany learners;
- (c) deal with heterogeneous groups and low-performing young people;
- (d) understand their own and others' training needs and develop customised training;
- (e) cooperate with the human resource development and other units.

Companies usually have at least one employee who has taken the exam. In small companies, the trainer is often the owner. Large companies may have training managers who would then be less personally involved in training.

There is no common standard for what constitutes a CVET teacher or trainer and there are no specific training models. The few university programmes that exist often relate to general adult education management. In most cases, trainers have an academic degree in their specific domain and a trainer certificate. This could be a university degree in adult education, or a certificate issued by a private institution or social partners. CVET trainers usually provide training for specific hard or soft skills to meet employee/company needs. While larger companies have their own training department and CVET trainers, SMEs tend to work with self-employed or other external trainers.

5.1. Initial training for staff in VET schools

As a result of a joint conference in 2013, the federal government and the Länder agreed to launch a long-term quality initiative ⁽²⁵⁾ for teacher training. In 2014 and 2015, universities/higher education institutions involved in teacher training were invited to submit project proposals. The initiative is planned to continue until 2023. It follows a comprehensive approach and aims to:

⁽²⁵⁾ <https://www.qualitaetsoffensive-lehrerbildung.de/>
https://www.bmbf.de/pub/Neue_Wege_in_der_Lehrerbildung.pdf

- (a) support teacher training from initial/pre-service training to continuing professional development (CPD);
- (b) make it more practice-oriented;
- (c) develop and adopt new teaching methods and include use of ICT/new media for teaching and learning;
- (d) help (future) teachers deal with heterogeneous target groups;
- (e) increase cooperation between the different actors in teacher training;
- (f) ensure that study credits and qualifications are more comparable across the country to improve job opportunities and mobility.

The Federal Government allocated EUR 500 million to support the programme. The first funding phase from 2015 to 2019 has approved 49 projects at 59 universities/higher education establishments in 16 Länder. The initiative will be accompanied by research and evaluated.

5.2. Continuing professional development for teaching/training staff in VET schools

BIBB research (Section 1.2.2) investigates the impact of digitalisation and industry 4.0 on emerging skills requirements for employees and also for teachers and trainers. More individual learning, increased use of learning platforms, social media or virtual classrooms will imply different ways of teaching and require staff to have increased IT and media competence ⁽²⁶⁾. Handbooks and relevant scenarios and work assignments have been prepared for teachers in VET schools.

In the reporting period, the Ministry of Economic Affairs launched the national initiative *Business start-up country Germany*, a strand of which aims to promote entrepreneurial spirit and includes regular CPD for VET teachers. It offers e-learning opportunities and a webportal ⁽²⁷⁾ that encourages integrating entrepreneurship in teaching. The webportal includes a wide range of activities, material and e-learning for teaching staff.

⁽²⁶⁾ https://www.bibb.de/en/pressemitteilung_54914.php
<https://www.bibb.de/de/59571.php>; <https://www.bibb.de/en/59571.php>

⁽²⁷⁾ www.unternehmergeist-macht-schule.de

5.3. Continuing professional development for trainers and mentors in enterprises

For 2016-20, the country's priority in this area, as set by the Director General for vocational education and training, is constantly to update portals addressing target groups.

In 2016, new funding guidelines also relevant for CPD of trainers were covered in the framework of the Education Ministry's initiative *Digital media in vocational training* ⁽²⁸⁾ (Section 4.1). The guidelines focus on:

- (a) promoting critical media competence in vocational qualifications;
- (b) promoting the use of open educational resources;
- (c) training of trainers that can act as multipliers;
- (d) promoting digital learning networks in VET (*DigiNet*), especially among SMEs.

In the same project, the *Competence workshop* toolbox (Section 4.1) also contributes to in-company trainer CPD.

Based on its research into the implications of digitalisation and industry 4.0 for workers' skill needs and teachers' and trainers' competence requirements (Section 1.2.2), BIBB envisages developing CPD models for trainers and online exams.

By setting up the platform uberaus.de in 2016, the BIBB pooled a range of information services on transition from school to work/apprenticeships. The platform *Qualiboxx* ⁽²⁹⁾, which has been included in this portal, aims to reinforce intercultural competence in in-company training and provides information and material for trainers working with refugees/newly arrived migrants. A series of seminars addressing in-company trainers and staff in VET schools, recently offered by the education service providers affiliated to the Bavarian industry association, also supports this aim ⁽³⁰⁾. The portal ⁽³¹⁾, managed by the education service provider of the chamber of commerce and industry, has recently been expanded to – among others – assist trainers in their work with refugees/newly arrived migrants.

⁽²⁸⁾ <https://www.qualifizierungdigital.de/de/berufsbildung-24.php>

⁽²⁹⁾ <https://www.qualiboxx.de/wws/101505.php>

⁽³⁰⁾ https://www.foraus.de/html/foraus_3738.php
<https://www.bbwbzf-seminare.de/angebote/themenschwerpunkte/details/seminar/fluechtlinge-ausbilden-kompetenzen-fuer-ausbilder>

⁽³¹⁾ <http://www.stark-fuer-ausbildung.de/>

Conclusion

Since 2015, Germany has taken actions to modernise and campaign further for dual VET. Access to VET and qualifications for all was supported through expanding guidance and further training mechanisms. Progress has been made in developing and implementing the national qualifications framework, ECVET and validation. Strong initiatives were taken to promote the integration of migrants into VET and the labour market. Key competences, and the initial and continuing training of VET teachers and trainers, were enhanced.

The actions carried out show that the main lines of the Riga conclusions and the country's policy priorities for 2016-20 are being addressed. However, information available to Cedefop at the time of reporting suggests that an issue which could deserve further consideration is that of more systematically using EQAVET indicators to monitor developments in CVET. Also, developments in information and feedback loops in CVET seem to be missing.

List of abbreviations

AES	adult education survey
BA	federal employment agency
BBiG	<i>Berufsbildungsgesetz</i> vocational education and training Act
BDA	Federal Association of German Employer Associations
BIBB	Federal Institute on VET
BMBF	Federal Ministry of Education and Research
BQFG	Vocational Qualifications Recognition Act
CPD	continuing professional development
CVET	continuing vocational education and training
CVTS	European continuing vocational training survey
DEQA-VET	German reference point for quality assurance in vocational education and training
DIE	German Institute for Adult Education
DGVT	Director General for Vocational Education and Training
DQR	<i>Deutscher Qualifikationsrahmen für lebenslanges Lernen</i> national qualifications framework for lifelong learning in Germany
ECVET	European credit system for vocational education and training
EQAVET	European quality assurance in vocational education and training
EQF	European qualifications framework
ESF	European Social Fund
GDP	gross domestic product
HwO	<i>Handwerksordnung</i> Crafts Act
IAB	<i>Institut für Arbeitsmarkt und Berufsforschung</i> Institute for Employment Research
ISCED	international standard classification of education
IT	information technology
IVET	initial vocational education and training
KMK	<i>Kultusministerkonferenz</i> standing conference of the Länder Ministers of Education and Cultural Affairs
NCP	national contact point
NEET	not in education, employment or training
NEPS	German education panel study
PISA	programme for international student assessment
PPS	purchasing power standards

QANRP	quality assurance national reference point
SMEs	small and medium-sized enterprises
STEM	science, technology, engineering and mathematics
VET	vocational education and training

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