B 2 Adapting Vocational and Continuing Education and Training to Digital Transformation

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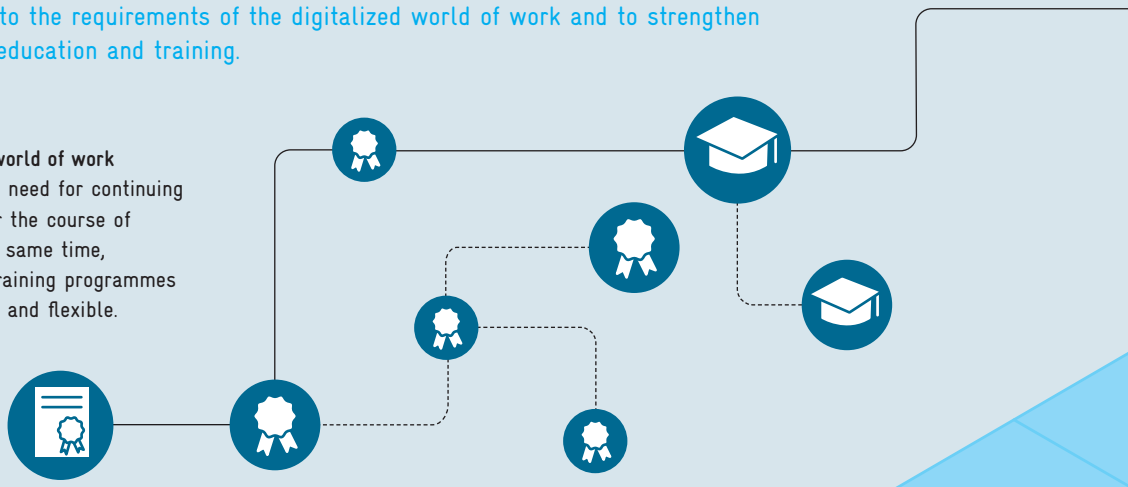
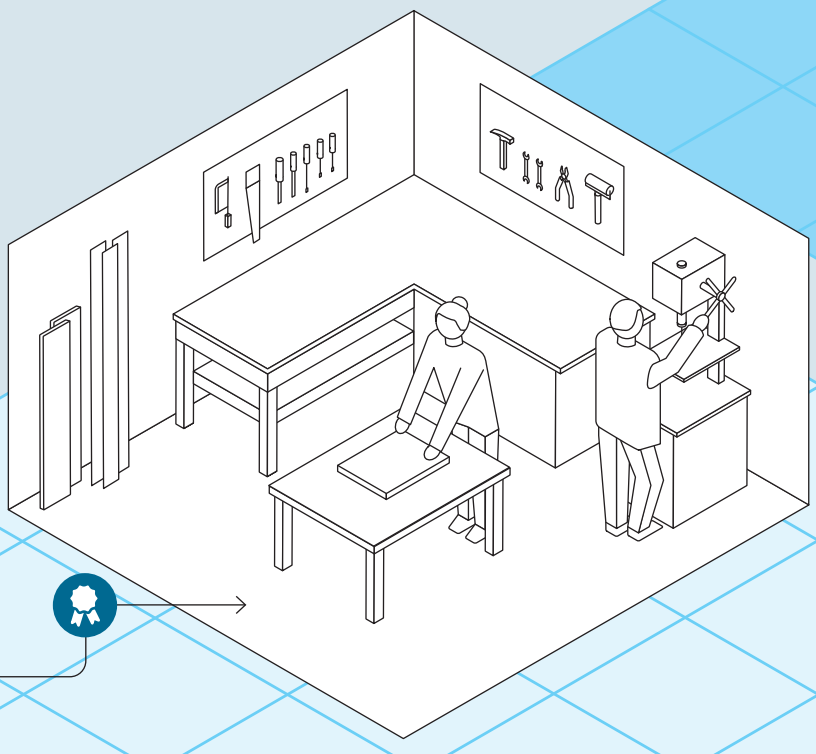
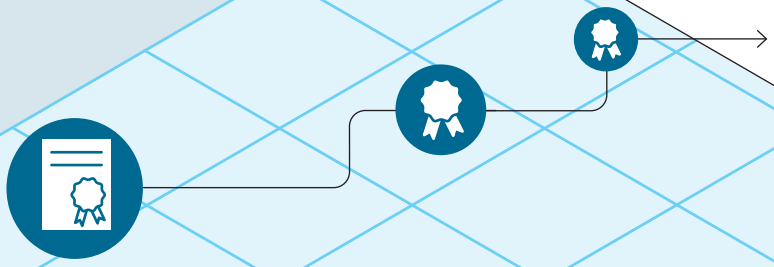
As a result of the digital structural change, many employees in Germany will have to change jobs in the coming years and reorient themselves professionally. In addition, job profiles in many existing workplaces will continue to change. It is therefore necessary to adapt vocational education and training to the requirements of the digitalized world of work and to strengthen job-related continuing education and training.

Career paths in the digital world of work
Digitalization increases the need for continuing education and training over the course of employment history. At the same time, continuing education and training programmes are becoming more diverse and flexible.

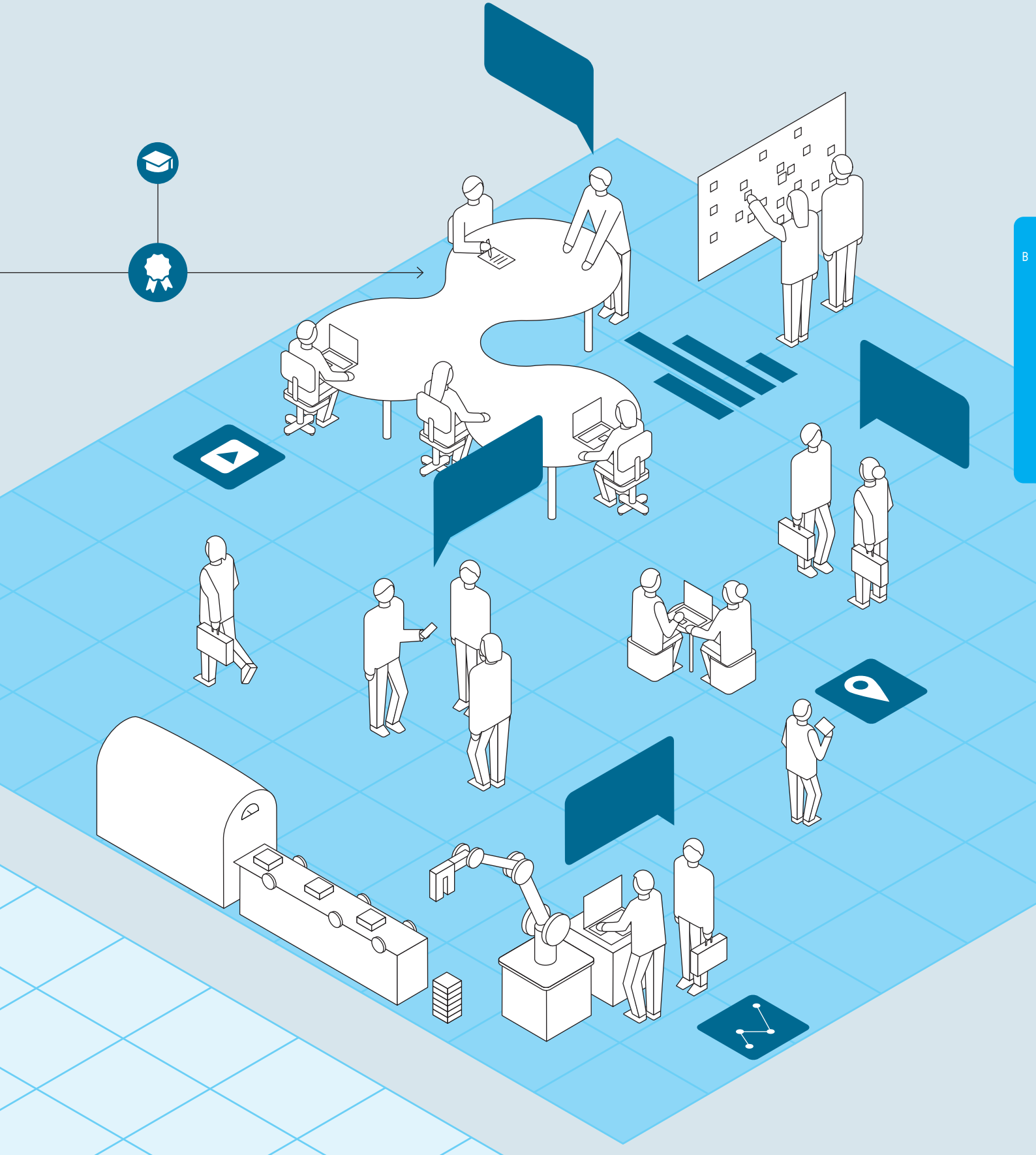




Career paths in the past
Previously, career paths in Germany mostly followed narrow occupational pathways. Continuing education and training took place rather rarely and mainly served the advancement in the occupation learnt.



New world of work
The digitalized world of work requires performance of fewer and fewer routine tasks. Increasingly, core personal and social-communicative skills are needed alongside core digital skills.



B 2 Adapting Vocational and Continuing Education and Training to Digital Transformation

The increasingly digital value chains in the economy are changing the world of work.[135] There tends to be less routine work to be done at the individual workplace.[136] As a result, the demands on individual occupational action competence are growing. The automation of processes through the increased use of intelligent machines, algorithms and artificial intelligence is replacing human labour. At the same time, digitalization creates new attractive fields of activity and previously disadvantaged groups can achieve better access to occupations.[137] Thus, the structure and quality of jobs in Germany will change significantly in the coming years.

In the course of digitalization, many people in the current labour force will therefore have to gain further professional qualifications. There is an increasing demand not only for technological skills, which are necessary for the design of transformative technologies, and core digital skills.[138] The new digital business and work processes also increasingly require so-called essential core skills. These include problem-solving skills, creativity, initiative, adaptability, and perseverance.[139] Young people coming out of the education system, too, must have these core digital and non-digital skills to be well prepared for a successful career in the digitalized world of work.

Only if the diverse core skills are sufficiently available in the labour force can the economic and social potentials of new technologies fully unfold, and digitalization rapidly penetrate all parts of the economy.[140] It is not only the employed who benefit from this. Germany's innovation capacity and competitiveness will also be strengthened in the long term.[141]

That is why it is important that the system of vocational and continuing education and training (VET/CET) in Germany keeps pace with the changes in the economy and the world of work brought about by digitalization. To this end, VET opportunities must be further developed, and structures must be designed in such a way that the core skills for the digitalized world of work are imparted to the workforce in line with demand. The private stakeholders involved, especially companies and people in the labour force, continue to play a key role in the necessary adjustments in VET/CET. However, there is also a need for impulses from public authorities to reinforce the readiness for necessary changes and the framework conditions for them.

Digitalization and the World of Work B 2–1

Labour Market Effects of Digital Transformation

In debates about new technological unemployment, the automation risks for workers are often overestimated. In many cases, they are based on estimates which occupations, considered as a whole, could in principle be rationalized away by new technological possibilities.[142] In an overall view of the effects of digital transformation on the labour market, however, it must be taken into account that there is also considerable employment potential in the use of new technological possibilities. These result directly from the growing demand for workers involved in the development and implementation of innovative technologies. In addition, completely new business models are emerging because of digitalization.[143] Furthermore, the productivity gains achieved with technological progress can translate into falling product prices on the one hand and rising incomes on the other. This feeds consumer demand and thus labour demand.[144]

In the past, more precisely between 1999 and 2010, the induced productivity effects of computerization

were so strong that the number of jobs in the European Union increased on balance by a good twelve million, although six million jobs were lost due to the direct displacement effects of technological change.[145] Another study shows that although the increased use of robots in German industry led to a loss of manufacturing jobs between 1994 and 2014, this was fully offset by the employment effects of the induced stronger demand for consumer-related services.[146] However, the resulting changes in the structure of employment may contribute to a polarization of employment and earnings, i.e. relatively weak growth or even decline in employment and earnings for people with middle-level qualifications.[147]

The Federal Ministry of Labour and Social Affairs (Bundesministerium für Arbeit und Soziales, BMAS) has been conducting forward-looking skilled labour monitoring for several years with the aim of highlighting potential future labour market developments at the level of occupations and sectors as well as identifying medium- and long-term problems in matching labour supply and demand in Germany in good time. For this purpose, scenario calculations are prepared that map in particular the effects of changes in the global economic framework conditions, demographic change and expected technological change.[148] The scenario of the transition to an Economy 4.0 presented in 2019 as part of the Skilled Labour Monitoring concludes that as a result of the associated economic and occupational structural change, around 3.8 million jobs that still existed in Germany in 2018 will no longer exist in 2035.[149] At the same time, however, about 3.2 million jobs will have been created by 2035 that did not exist in 2018. The predicted decline in employment opportunities in the increasingly digitalized world of work remains moderate on balance at 571,000. Behind this, however, lies a gross turnover of about seven million jobs. In the future, many workers will therefore have to find employment in other occupations than before.[150]

The calculations in the context of the BMAS's Skilled Labour Monitoring show that this upheaval is accompanied by a considerable need for further and higher qualification. According to this estimate, the major occupational groups of transport and logistics (except vehicle driving), drivers of vehicle and transport equipment, cleaning occupations and sales occupations will lose the most employees in Economy 4.0 by 2035, compared to 2018. On the other hand, the major occupational groups of information technology and other ICT occupations, occupations in business management and organization, occupations in advertising, marketing and media as well as occupations in technical development, construction and production control in particular are gaining employees.[151] Obviously, the new jobs cannot simply be filled with employees whose jobs no longer exist after a transition to Economy 4.0.

The structural shifts at the occupational level are associated with an increase in the average level of skill specialization,[152] which creates a need for higher qualification. Assuming even greater digitalization in the coming years, the number of employed experts, whose range of tasks predominantly requires a tertiary education institution degree of at least four years, will be higher by around 110,000 in 2035. The number of employed specialists, whose range of tasks predominantly requires training as a master craftsman or technician or an equivalent technical college or tertiary education institution degree, is higher by 76,000 (cf. figure B 2-1). On the other hand, the number of employed elementary workers whose range of tasks predominantly requires no VET or a maximum of one year of regulated VET is reduced by around 113,000 persons and the number of employed skilled workers whose range of tasks predominantly requires at least two years of VET is even reduced by about 210,000 persons (cf. figure B 2-1).[153] In order to meet the demand for employees who can fulfil high levels of skill specialization and to avoid a growing inequality of employment opportunities in Economy 4.0, those with simpler professional qualifications would therefore have to be increasingly enabled to fulfil higher levels of skill specialization in their occupation.

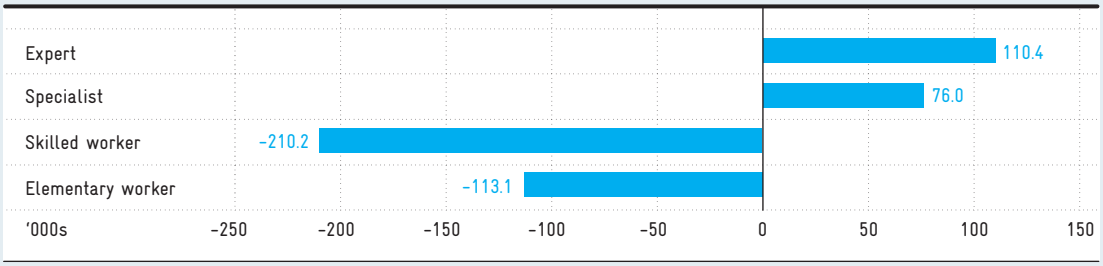
Change in Occupational Profiles and Competence Requirements

In the digital structural change, the occupational profiles of employees in workplaces are changing. A decline in routine tasks and an increase in non-routine tasks were already observed in connection with the increasing spread of computers in the workplace in the 1980s and 1990s. This change took place almost exclusively within occupations.[154] An empirical study commissioned by the Commission of Experts and carried out by the Kiel Institute for the World Economy and the RWI – Leibniz Institute

Fig. B 2-1

Download data

Projected change in the number of people in employment by level of skill specialization in the transition to Economy 4.0 compared to a status quo baseline projection 2035 in thousands



Source: Results of the BMAS's Skilled Labour Monitoring. Own representation based on Wolter et al. (2019: 30).

for Economic Research finds that this continued until the mid-2000s.[155] After that, both the decline in routine and the increase in non-routine tasks slowed down significantly and the changes in task shares are increasingly due to shifts in employment shares between occupations.[156] The slowdown in the change in occupational profiles is in line with the end of a first phase of accelerated digitalization.[157]

Occupational non-routine tasks are divided into analytical, interactive, and manual non-routine tasks (cf. box B 2-2). Manual non-routine tasks lost importance again in the 2000s and 2010s after their intensity had increased in the 1980s and 1990s.[158] The decline is mainly fed by changes in task profiles within occupations rather than by occupational structural change. The intensity of interactive and analytical non-routine tasks has continued to grow in the German labour market since the mid-2000s, albeit less strongly than before. Moreover, both types of tasks still show clear complementarities with digital technologies. The increase in interactive non-routine tasks can most recently be attributed to the change in the structure of employment towards occupations in which these tasks play a greater role. The growth of analytical non-routine tasks, on the other hand, is driven more by the change in task profiles within occupations.

The change in job profiles at the workplace that goes hand in hand with the use of digital technologies also changes the need for skills, capabilities, and competences (for definitions cf. box B 2-2) that are needed to maintain occupational action competence. According to the results of a representative survey of HR managers, changes in the workplace due to investments in self-controlling machines and systems or IT-integrated office and communication tools lead to an increasing importance of non-technical skills, which are necessary, for example, for more interdisciplinary and creative ways of working as well as more intensive customer relationship management.[159]

To form the basis of the Future Skills initiative, launched in 2018 by the Stifterverband as a major joint action programme of business and civil society, 18 core skills were identified, the importance of which in professional life will soon increase significantly across all sectors as digitalization and the associated new ways of working progress. In addition to various technological skills that are necessary for the design of transformative technologies, these also include core digital skills such as digital literacy, digital interaction, and digital learning, as well as so-called essential core skills such as problem-solving ability, creativity, initiative, adaptability, and perseverance.[160]

A comparative analysis of studies focusing on 14 VET occupations in Germany documents that the change in tasks accelerated by digitalization can be better managed by strengthening comprehensive action competence than by constantly acquiring new occupation-specific competences. A central

component of this comprehensive action competence is learning competence.[161] The competence to learn new things independently and in a self-determined manner enables employees to adapt in a self-regulating manner to the tasks that are changing rapidly and continuously with the digital transformation of the world of work. Promoting or developing this learning competence in a job-related manner is therefore an important requirement for the VET/CET system.

B 2-2 VET/CET System and Digital Transformation

Adaptation of Content and Teaching/Learning Formats in VET

The VET system in Germany is undergoing change. Among newly concluded VET contracts, the percentage of occupational groups characterized by a high or very high degree of digitalization has increased from 50 percent in 2010 to 55 percent in 2018.[162] In addition, the rate of first-year students has risen sharply.[163] The growing and increasingly differentiated range of tertiary education institutions and degree course options apparently offers attractive alternatives for many young people.[164] The German VET system faces the challenge of reconciling standardized training regulations and framework curricula on the one hand and rapid adaptation to changing skill requirements due to digital structural change on the other.

On behalf of the Commission of Experts, the Institute for Applied Economic Research (Institut für Angewandte Wirtschaftsforschung, IAW) has conducted and systematically evaluated expert interviews on the effects of digitalization on the area of VET, among others. The interviewed experts stated that in the long term, digitalization will not completely eliminate any VET occupations and that

Key Terms

Box B 2-2

Professional tasks: Occupations are made up of different tasks and activities. These are often divided into five categories: manual routine tasks such as monitoring machines, cognitive routine tasks such as correcting texts, manual non-routine tasks such as carrying out repairs, analytical non-routine tasks such as researching, and interactive non-routine tasks such as negotiating.[165] Managing these different tasks and related activities requires different skills and competences.

Competences, capabilities, and skills: The terms skills and competences are both blurred in their range of meaning and are often used synonymously.[166] In a broad sense, competence can be understood as the capability and skill of an individual to cope with a specific problem or problem area as well as the associated motivational, volitional, and social readiness and capabilities to be able to variably use the problem solutions. Competence is always related to a specific field of application. Therefore, a reference designation is often prefixed (e.g., social competence, digital competence). The terms capability and skill are also often used synonymously. However, a distinction can be made between capability as a talent for something (such as musicality) and skill as the realization of a capability acquired through practice (such as playing a musical instrument). Capabilities belong to the personality traits. They are thus relatively stable but can in principle be consciously changed – albeit with greater effort or over a longer period.[167]

Qualifications: Qualifications denote the outcome of a formal assessment and validation process. In this process, an appropriately responsible institution (e.g., in a final examination) determines that the individual competences, skills and capabilities meet predefined standards.[168]

VET occupations are rarely newly created. Rather, they are constantly evolving.[169] The pressure to adapt due to digitalization is reflected in the fact that the number of restructured VET occupations has been unusually high in recent years.[170] Framework curricula have also been rapidly adapted to changes related to digitalization.[171] New standard occupational profile elements, expanded to include the topic of digitalization, apply to all training regulations that come into force from August this year.[172] The Agile Procedure initiated by a social partner agreement between Gesamtmetall, the Metalworkers' Union (Industriegewerkschaft Metall), the German Engineering Federation (Verband Deutscher Maschinen- und Anlagenbau) and the German Electrical and Electronic Manufacturers' Association (Zentralverband Elektrotechnik- und Elektronikindustrie) pursues the goal of systematically observing and evaluating the changing occupational requirements for Industry 4.0-relevant VET occupations in the metalworking and electrical sectors in order to change curricular specifications promptly and to identify any need for adaptation in the design of training.[173]

Experts see the practical implementation of the adapted regulatory means[174] in the design of VET at the company level as more of a problem.[175] Many companies have recognized the growing importance of digital competences and already teach a large number of the skills and capabilities that are needed by skilled workers in the digital economy in their in-house training.[176] However, the less digitalization has penetrated the company and its environment, the less often training design is adapted to match the development of professional action capability in digitalized work and business processes.[177] This particularly affects small and medium-sized enterprises (SMEs), which generally operate on a less digitalized level than large companies.[178] More digitalized companies use digital media more intensively in training and teach more digital skills.[179]

As a reaction to the varying degrees of digitalization and the resulting increased diversification of work and training environments, formal additional qualifications have developed in some VET occupations that enable specialization.[180] Many companies would like to see these flexible supplements to standard training, especially in highly specialized sectors.[181] These formats are already used quite frequently in the areas in which they exist, but are rarely examined by a chamber, so that qualification certificates are lacking.[182] The expert interviews conducted by the IAW resulted in the recommendation to increasingly expand the training regulations to include additional qualifications, because these make it possible to adapt to current content-related needs at shorter intervals.[183] In addition, this format allows training to be better aligned to specific in-house demand situations and the degree of digitalization in the specific training environment, and anchor points are set for occupational specializations and specialist careers.[184]

The experts interviewed by the IAW attest that overall the training companies and the vocational schools have available good technical equipment.[185] However, the vocational schools have major deficits in terms of equipment involving digital media, hardware and software.[186] There is a need for action with regard to the qualification and further training of the trainers in the companies and the teachers at the vocational schools.[187] So far, these have mainly concentrated on the vocational dimension.

Digitalization leads to a greater mix of methods in VET. The importance of digital teaching/learning formats as well as self-organized and independent learning is growing. This also changes the demands on the methodological knowledge and didactic skills of the staff involved in training. According to the experts interviewed by the IAW, the specific didactic competences required for the effective use of digital teaching/learning formats and the teaching of personal and social-communicative skills for the digitalized world of work are often not sufficiently available.

Systematic Differences in Participation in CET

Digitalization increases the need for job-related continuing education and training (CET). In the continuing education survey conducted by the German Economic Institute (Institut der deutschen Wirtschaft, IW) in 2017, around 26 percent of the companies surveyed stated that their need for continuing education had increased significantly due to the introduction of new digital technologies. Another 40 percent said it had increased slightly.[188]

The proportion of 25 to 64-year-olds who participated in at least one job-related CET activity during the last

Participation rates in job-related CET in Germany 2012–2018 in percent

Fig. B 2-3

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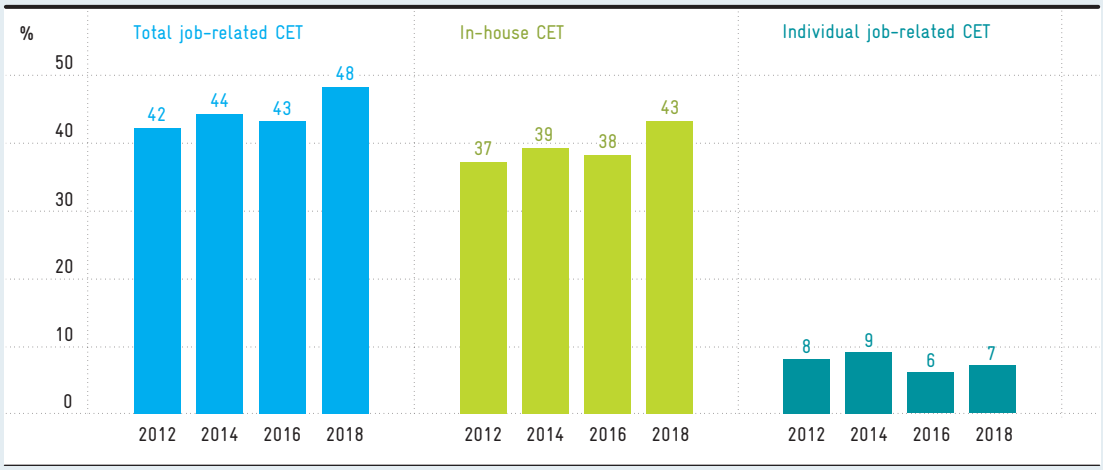

Weighted values. The definition of CET segments differs slightly in 2018 from that in the previous years under review. For detailed information cf. endnote 191.
Source: Adult Education Survey. Own representation based on calculations of the German Institute for Adult Education (Deutsches Institut für Erwachsenenbildung) in BIBB (2020: 303).

twelve months was 48 percent in 2018 (cf. figure B 2-3).[189] The rate was thus 6 percentage points higher than in 2012.[190] This increase can only be attributed to higher participation in in-house CET, which therefore continues to characterize the picture of job-related CET in Germany. In 2018, 43 percent of 25 to 64-year-olds participated in in-house training, compared to 7 percent participating in individual job-related training.[191]

Participation in job-related CET among people with low professional qualifications is clearly below average.[192] However, it has grown significantly since 2012. Employees whose jobs are potentially more easily replaceable by technology because they perform a high proportion of routine tasks are less likely to undergo continuing training, and this applies to all qualification groups.[193] This is partly due to the fact that their employers are generally less likely to provide continuing training and less likely to offer individual training to employees with a high proportion of routine tasks.[194]

The percentage of companies active in continuing education increased from 36 percent to 53 percent between 2001 and 2011 and was fairly stable thereafter. It has recently increased again slightly and has risen to well over 54 percent in 2018 (cf. chapter C 1).[195] The rates of CET activity vary greatly depending on the sector, the structure of the workforce and the size of the company. Small companies are significantly less active in CET. While almost all companies with 50 to 249 employees, with 250 to 499 employees and with 500 or more employees engage in CET activities (92, 97 and 98 percent respectively), only 52 percent of companies with fewer than 50 employees are active in CET (cf. chapter C 1).[196] Companies with a higher degree of digitalization, i.e., with a higher number of digital technologies in use, are systematically more active in CET.[197]

On average, the less digitalized SMEs have less structured human resources management and thus more often have difficulties in identifying training needs in advance. They are also more dependent on external training providers.[198] Intercorporate training structures are rather weak. SMEs could benefit from more advice and assistance to obtain more information on development trends in qualification requirements resulting from digitalization and better orientation in the selection of suitable and high-quality training offers.

Provider Diversity in the Field of Job-related CET

Job-related CET in Germany is provided by a wide range of institutions, in particular by companies themselves, commercial providers (such as language schools), public sector providers (such as adult education centres) and community providers (such as medical associations). In-house CET activities, i.e., CET activities that take place entirely or predominantly during paid working hours or paid time off for educational purposes, or where direct CET costs are covered at least proportionally by the employer, were carried out by companies themselves to 65 percent in 2018. In just over one in three cases, however, an external provider was involved.[199] Individual job-related CET was distributed as follows: 30 percent by commercial providers, 28 percent by public sector providers, 20 percent by community providers and 18 percent by in-house providers.[200] Tertiary education institutions play a very minor role as providers of job-related CET.[201] There are calls for them to become more prominent in this area because the need for tertiary VET is increasing in view of technological changes.[202]

A reliable assessment of the quality of the diverse CET providers and individual CET programmes is difficult. In the field of publicly funded CET, the Accreditation and Approval Ordinance for Employment Promotion (Akkreditierungs- und Zulassungsverordnung Arbeitsförderung, AZAV)[203] links the approval of providers and employment promotion measures to criteria such as the suitability of the employed teaching staff and quality assurance procedures. In contrast, there are no binding requirements in freely financed CET programmes. Voluntary quality assurance procedures have been established in some cases.[204] However, these input- and process-oriented procedures are only of limited value for evaluating the effectiveness of the offered training with regard to the qualification objectives. This also applies to customer reviews on rating portals.[205]

Increasing Importance of Digital CET Formats

One challenge for providers of job-related CET is that the content demanded is changing rapidly with digitalization. CET programmes must be continually adapted or redesigned to meet changing requirements. Against this background, it is advantageous if CET programmes are divided into modules that can be quickly adjusted and flexibly combined.[206] At the same time, digitalization is changing the formats and methods of CET. Digital teaching/learning formats in particular are gaining in importance. These developments create a considerable need for further training among the teaching staff employed. Yet as these are often freelance trainers, providers find it difficult to organize them accordingly.[207]

In the segment of individual job-related CET, the demand for digital teaching/learning formats is currently still relatively weak. One of the main reasons for this is that in this area personal encounters with other participants and lecturers are valued.[208] However, in the segment of in-house CET, face-to-face formats are increasingly being supplemented by digital formats.[209] The advantages of online formats are, on the one hand, cost savings for companies, on the other hand, gains in flexibility in terms of time and content as well as greater personalization of CET content. However, the usefulness and applicability of digital programmes are strongly dependent on the CET learning objective and on the learners' abilities for self-organization and self-determined learning. Especially programmes purely focusing on information and knowledge can be presented well online. In the foreseeable future, hybrid formats in particular are likely to be attractive for in-house CET.[210]

Federal Initiatives for VET/CET in the Digital World of Work B 2-3

The organization of VET/CET primarily involves employers and trade unions, the Federal Government and the Länder, and to some extent also the Federal Employment Agency (Bundesagentur für Arbeit, BA).[211] In the following paragraphs, the focus is on the measures and programmes implemented by the Federal Government to strengthen the performance of VET/CET to cope with the changed requirements in the digital world of work. These are running against the background and partly within the framework of the VET umbrella initiative Berufsbildung 4.0 and the National Skills Strategy (cf. box B 2-4).[212]

In general, no reliable statements can be made about the effects of the numerous support measures in VET/CET. A systematic evaluation of the measures has for the most part not yet been carried out.

Measurement of Competence and Qualification Requirements

Within the VET umbrella initiative Berufsbildung 4.0, the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF) funded from 2016 to 2018, among other things, the research initiative Skilled Worker Qualification and Competences for the Digitalized Work of Tomorrow (Fachkräftequalifikation und Kompetenzen für die digitalisierte Arbeit von morgen). In this context, competence and qualification requirements for selected occupations were identified and conclusions were derived for the further development of the regulatory means for VET.[213] With the feasibility study Competence Compass (Kompetenz-Kompass), funded from 2019 to 2020 and conducted by the Institute for Employment Research (Institut für Arbeitsmarkt- und Berufsforschung, IAB), the BMAS is also aiming to gain knowledge on how current and future technical and interdisciplinary competence requirements can be systematically identified.[219]

The counterpart to ongoing measurement of competence requirements is monitoring of existing skills and competences in the labour force. This entails major conceptual challenges. In the context of VET in Germany, several concepts for measuring skills and competences are available, but they focus on commercial, industrial-technical, and health occupations and deal significantly more often with technical than with general and social-communicative skills and competences. In addition, there is often a lack of wide-ranging transfer of these concepts into practice.[220] In order to further develop the instruments of competence measurement in VET based on technology and to make these more applicable in

Box B 2-4

Umbrella Initiative Berufsbildung 4.0 and National Skills Strategy

The BMBF launched the VET umbrella initiative Berufsbildung 4.0 in 2016 as part of the strategy Education Offensive for the Digital Knowledge Society (Strategie Bildungsoffensive für die digitale Wissensgesellschaft).[214] It pursues the goal of supporting digital transformation in VET.[215] To this end, various programmes and initiatives with different focus areas and target groups are combined and interlinked.[216]

Berufsbildung 4.0 also contributes to the National Skills Strategy.[217] The latter was adopted in June 2019 by the BMAS and BMBF together with the Länder, industry, trade unions and the BA and is intended to lay the foundation for a new CET culture.[218] The partners want to align CET in Germany in such a way that the structural change driven especially by digitalization can be successfully organized. The National Skills Strategy focuses on job-related CET and aims to safeguard professional action capability, among other things, within the context of adaptation qualifications or to expand it within the context of advanced qualifications. Ten operational objectives are defined for this purpose:

1. Support the transparency of CET opportunities and programmes.
2. Close funding gaps, set new incentives, adapt existing funding systems.
3. Network lifelong CET guidance throughout the country and improve qualification guidance, especially for SMEs.
4. Strengthen the responsibility of the social partners.
5. Review and reinforce the quality and quality assessment of CET provision.
6. Make visible and recognize acquired competences of workers in VET/CET.
7. Develop CET degrees and training opportunities.
8. Strategically develop educational institutions as competence centres for CET.
9. Support CET staff and qualify them for the digital transformation.
10. Strengthen strategic foresight and optimize CET statistics.

The first implementation report on the National Skills Strategy is to be presented later this year.

practice, the BMBF has been funding the transfer initiative ASCOT+ since 2017. It aims at developing digital measurement tools for vocational and cross-occupational skills and competences of apprentices in three occupational fields and to test these in training and examination practice.[221]

Modernization of Training Design and Methods

Other measures are aimed at promoting digital teaching in VET. These include the BMBF's Digital Media in Vocational Education and Training programme (Digitale Medien in der beruflichen Bildung), which aims to enhance the quality and attractiveness of VET/CET through the use of digital media for teaching and learning.[222] In addition, the BMBF's qualification initiative Digital Change – Q 4.0 (Digitaler Wandel – Q 4.0), launched in 2019, supports the development and testing of CET concepts for VET staff.[223] Here, the focus is on the one hand on the training staff's media education skills, and on the other hand on their qualifications to adapt training content and processes to digitalization.

The modernization of training in SMEs is also being supported with measures such as the VET/CET in the Economy 4.0 (Aus- und Weiterbildung in der Wirtschaft 4.0) funding line in the context of the JOBSTARTER plus programme. This funding line supports SMEs in the methodological-didactic further development of training design to take account of the changed framework conditions and requirements resulting from digitalization, particularly regarding personal competences.[224]

Expansion of Job-related CET

The support of job-related CET is mainly the responsibility of the BMAS. The traditional target group of publicly funded CET measures is the unemployed. More recently, however, support services for employees have been greatly expanded. For example, the Act to Strengthen Opportunities for Qualification and for More Protection in Unemployment Insurance, short: Skills Development Opportunities Act (Gesetz zur Stärkung der Chancen für Qualifizierung und für mehr Schutz in der Arbeitslosenversicherung, Qualifizierungschancengesetz) came into force in early 2019.[225] The Skills Development Opportunities Act promotes job-related CET outside the workplace for employees who perform tasks that are being replaced by new technologies, are otherwise affected by structural change, or are seeking job-related CET in a bottleneck vacancy.[226] A right to CET and qualification advice for employees and companies was introduced. In addition to the absorption of CET costs, the possibility of partial wage compensation is granted in the event of CET.[227]

The Act on the Promotion of CET in Structural Change and the Further Development of Training Assistance, short: Work of Tomorrow Act (Gesetz zur Förderung der beruflichen Weiterbildung im Strukturwandel und zur Weiterentwicklung der Ausbildungsförderung, Arbeit-von-morgen-Gesetz), which came into force in May 2020, extends the benefits for employees particularly affected by structural change beyond the Skills Development Opportunities Act. It supports post-qualification training for workers without vocational qualifications, improves funding opportunities for CET during short-time work, and has raised cost rates for CET providers to ensure quality.[228]

To provide even greater protection for employees in the event of fundamental upheavals in the economy, the trade unions are proposing the introduction of a so-called transformation short-time allowance (Transformations-Kurzarbeitergeld). This is to be granted as a wage replacement benefit during attendance of a CET course if the parties in the workplace jointly determine that, due to changes in products, processes and workflows, the activities of a significant number of employees will change fundamentally and their professional knowledge and skills will not be sufficient to fulfil expected future tasks in the company. In addition, the BA is to assume the full costs of CET.[229] The Commission of Experts considers this approach to be unsuitable, since it would transfer entrepreneurial risks to the social insurance community and considerable bandwagon effects are to be expected. Above all, however, necessary structural change could be impeded. Employee transfer to more competitive companies would be slowed down. Start-ups entering the market with innovative products, processes or business models would be systematically disadvantaged.

Regional networks can play an important role in establishing a new CET culture. For this reason, the BMAS has been promoting the establishment of

CET networks since June 2020 to establish binding cooperation and networking structures between companies, stakeholders in the CET landscape and other labour market stakeholders with the help of regional coordination offices. The CET networks are intended to support SMEs in particular in planning, organizing, and designing job-related CET for their employees.[230]

B 2-4 Recommendations for Action

As a result of the digital structural change, many employees in Germany will have to change jobs in the coming years and reorient themselves professionally. In addition, job profiles in many existing workplaces will continue to change. Those in working life must therefore develop not only better core digital skills, but increasingly also core personal and social-communicative skills and competences to maintain professional action competence. It is therefore necessary to adapt VET to the requirements of the digitalized world of work and to strengthen job-related CET. With this in mind, the Commission of Experts recommends:

Adapt Training Design to Digitalization

- The Federal Government should work towards ensuring that all training regulations are adapted to the changes brought about by digitalization and kept sufficiently up to date. Between updates, changing occupational requirements should be systematically monitored on a wider scope and assessed to update curricular specifications in a timely manner and to identify adaptation requirements in training design.
- Advice and assistance for implementing a VET design adapted to digitalization should be expanded. The focus here should be on weakly digitalized businesses, especially among SMEs. The formation of training alliances with companies whose business and work processes are already more digitalized should be supported more strongly and the networking of digital training locations and training offerings should be promoted.

Making Vocational Training Staff and Schools Fit for Digitalization

- At vocational schools and in companies, the training and continuing education of teachers and trainers must be geared even more closely to the new content-related and methodological requirements resulting from digitalization. The results of the BMBF's qualification initiative Digitaler Wandel – Q 4.0 should therefore be scientifically evaluated and the implementation of the most successful concepts in practice should be supported.
- Incentives for appropriate CET of vocational training personnel should be consolidated.
- In addition, the Commission of Experts believes it is urgently necessary to equip vocational schools with a high-performance digital infrastructure, modern media, and access to high-quality learning software. The funds provided for the digitalization of schools in general and VET schools as part of the DigitalPakt Schule are not considered sufficient.[231]

Strengthen Occupational Adaptability Through Flexible Additional Qualifications

- To strengthen both occupational adaptability and the basis for more differentiated specialist careers, the supply of elective modules and additional qualifications during VET should be further expanded and, if possible, made available everywhere. The inclusion of optional, codified additional qualifications in training regulations should be increased. To increase the willingness of companies to offer additional qualifications, SMEs in particular should be better informed about how they can use these to cover company-specific competence requirements.
- The supply of additional qualifications should be opened to job-related CET.

Advance Implementation of the National Skills Strategy

– The Commission of Experts welcomes the fact that the Federal Government is taking account of the increasing importance of lifelong learning with its National Skills Strategy, in which it is designing specific activities and projects together with the social partners. However, it urges swift and coordinated implementation of the planned measures. In addition, the National Skills Strategy should provide more concrete criteria against which the quality of implementation and the success of the proposed measures will be evaluated.

Provide Sufficient Resources for Higher-quality CET

– The Commission of Experts advocates that quality aspects be given greater weight in the ongoing update of the Accreditation and Approval Ordinance for Employment Promotion (AZAV). In this context, not only should the previous input-oriented specifications be made more demanding, but output-oriented criteria, such as the qualifications achieved and labour market results of the persons who have received CET, should also be given strong weight. In the area of publicly funded job-related CET, funding levels must be set so that high-quality programmes are profitable.
– Application-oriented tertiary education institutions could, on a voluntary basis, position themselves more strongly in the market for job-related CET with special offerings. If tertiary education institutions take on additional tasks as providers of CET, they must be provided with the necessary resources to do so.
– To support SMEs in job-related CET, the establishment of local and regional networks that organize efficient inter-company solutions should be promoted. For this reason, the Commission of Experts welcomes the support launched by the BMAS for the establishment of CET networks.

Preventive Support for Occupational Mobility

– The Federal Employment Agency's support instruments for job-related CET to adapt to technological change are primarily geared towards the goal of continued employment with the previous employer and often only kick in when the job is severely threatened or even already lost. The Commission of Experts recommends additionally developing and testing instruments to support preventive adjustment qualifications that facilitate the transition of individual employees to a new employer. Viable bridging solutions must involve both the previous and the new employer and ensure an appropriate balance of their interests.

Expand Monitoring of Occupational Skills

– The fit of job-related VET/CET can benefit from a monitoring system that comprehensively and continuously records the skills used in the profession and those available in people in employment. The Commission of Experts therefore welcomes initiatives to tap into and evaluate data from the Federal Employment Agency, from companies and from social networks for this purpose. This, together with the establishment of a central database on existing job-related VET/CET opportunities, could significantly improve the information base for career and educational decisions.

Improve Structures for Guidance on Job-related CET

– As with career guidance, the employment agencies as local contact points could take on another task in the future with guidance on job-related CET for employees. To prevent conflicts of objectives, the Commission of Experts recommends that guidance on individual job-related CET be strictly separated from related support measures in organizational terms.