

The impact of technological developments and digitalisation on the skills needed by enterprises and workers for innovation – A combination of technical and soft skills?

Seminar “Game changing technologies and innovative approaches to the identification of new skills”

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General Findings

- Digitisation in the occupations already well advanced, with further potential
- Digitisation tends to be gradual, rarely comprehensive, dependent on the size of the company
- Factors supporting digitization: First and foremost, the cost-benefit ratio, further competitiveness, efficiency gains, productivity increase, more effective machine utilisation, et al.
- Findings on the status quo and future expectations regarding work activities and tasks:
 - Differences with regard to the intensity of the effect on single occupations and in-company use cases
 - Typical cross-occupational shifts in work activities and tasks
 - Increased importance of process-supporting activities
 - Changed function, position and responsibility of qualified workers
- The disparity of digitisation by company and occupation increases the diversification of workplace requirement and in the corresponding occupational profiles
- the effects of digitisation on central skills and competences of vocational action must be taken into account
- the expected accelerated pace of innovation has an impact on the processes by which occupational profiles are further developed

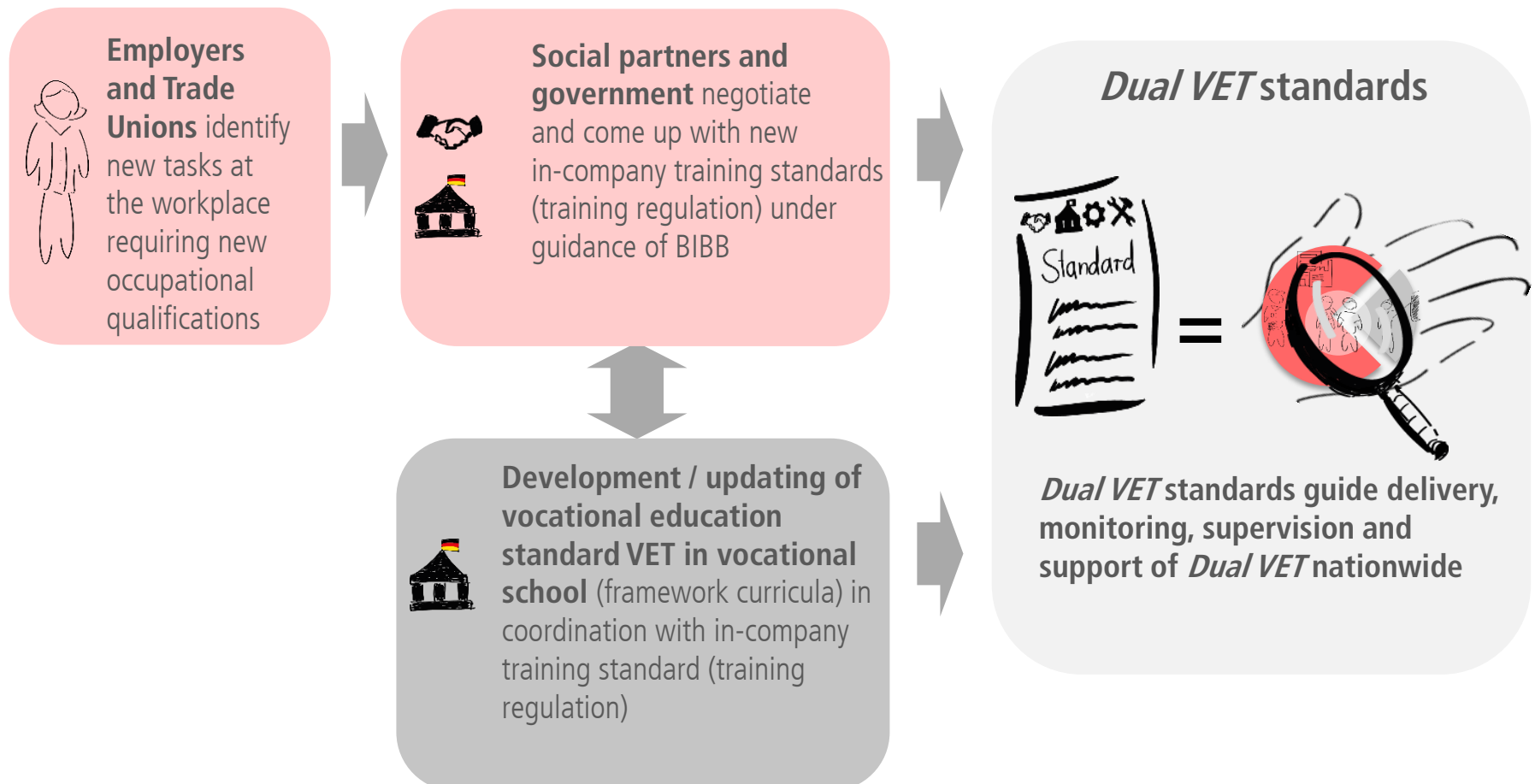
Findings with regard to changing work tasks

- Increased complexity of work tasks
- Process networks replace process chains
- Process control and responsibility is becoming more important
- Transfer of work activities, outsourcing of sub-processes
- Substitution of work activities and tasks between occupational profiles through automation and use of robots
- Enrichment of work tasks in the occupational profile

- The growing dynamics of changing work tasks can best be mastered by strengthening a general occupation-related competence to act, in particular
 - Process and system understanding
 - Data protection, IT security
 - Learning competence

Impetuses for updating/development of national *Dual VET* standards by the economy

Duration: max. 1 year



Experts of the Social Partners and
Federal Government

Experts of the
Federal States

Training Regulation

- Occupational Profile
- Training Framework Plan
- Examination Requirements
- If applicable: Additional Qualifications

Framework
Curriculum

Standards for In-Company-
IVET

Standards for
VET Schools

- Model Training Regulation
- Standard Occupational Profile Items
- Benchmarks of the Social Partners
- Sector and occupation screening

What are standard occupational profile items?

- Cross-occupational knowledge, skills and competences are not taught separately in the dual system in Germany, but always in occupation-related VET.
- These cross-occupational knowledge, skills and competences are defined in so-called standard occupational profile items.
- The content of standard occupational profile items must be integrated into all training occupations. This means: these standards have to be specified (broken down) and adapted for each training regulation / occupation.
- New standard occupational profile items are now adopted:
 - **Environmental protection and sustainability**
 - **Digitalised world of work**
 - **Organisation of the enterprise; Vocational education, labour and collective bargaining law**
 - **Health and safety at work**

standard occupational profile item :

**ENVIRONMENTAL PROTECTION AND
SUSTAINABILITY**

- a. Identifying possibilities to avoid operational burdens for the environment and society in one's own working field and contributing to further development
- b. In work processes and in regard to products, goods and services, using materials and energy in sustainable economic, social and environmental ways.
- c. Complying with environmental protection regulations applicable in the company.
- d. Avoiding waste, recycling / disposal (of) substances and materials in an environmental friendly way.
- e. Developing proposals for environmental action in one's own field of work
- f. Cooperating in compliance with company regulations for sustainable economic, social and environmental development and communicating according to the target group.

standard occupational profile item:

DIGITIZED WORKING WORLD

DIGITALISED WORLD OF WORK

- a. Dealing with own and company-related data as well as with data of third parties and complying with the regulations on data protection and data security
- b. Assessing risks in the use of digital media and information technology systems and complying with company regulations when using them
- c. Communicating in a resource-saving, target group appropriate and efficient manner and documenting communication outcomes.
- d. Recognizing disturbances in communication processes and contributing to their solution
- e. Researching information in digital networks and obtaining it, as well as checking, evaluating and selecting information, including information from other sources
- f. Applying learning and working techniques as well as methods of self-directed learning, use digital learning media and recognize and derive requirements of lifelong learning
- g. Planning, processing and designing tasks together with those involved, including those from other work and business areas, also using digital media
- h. Practicing appreciation of others while taking social diversity into account

Implementation of the new standard occupational profile items

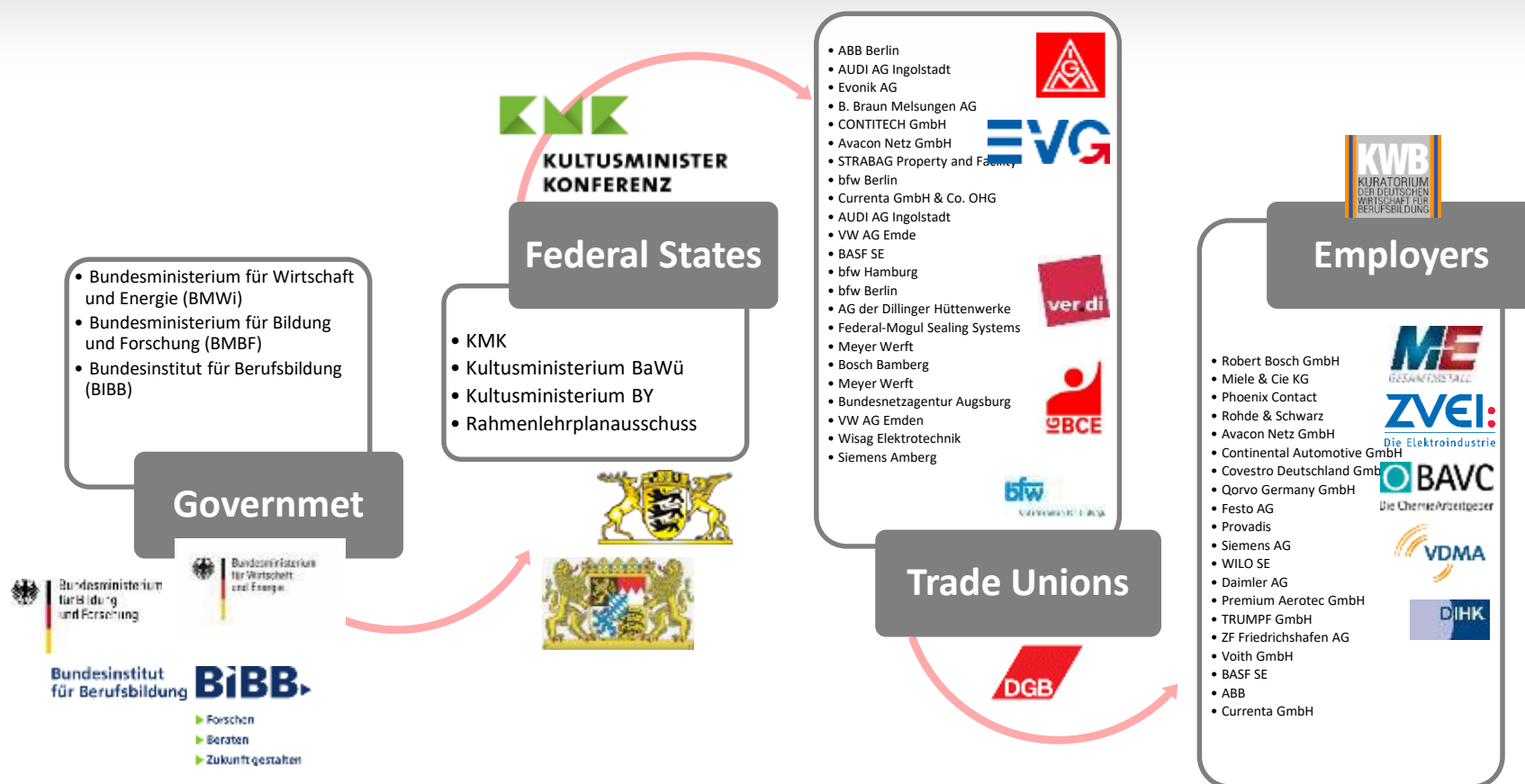


- The new standards occupational profile items will come into force for all occupations on 1 August 2021.
- Implementation guide will also be developed by BIBB

Partial revision of the metal + electrical professions

Participants in the Process

DGB



Affected metal+electric professions with new contracts 2017

The DGB logo is a red parallelogram with the white text "DGB" inside.

- Regulation on vocational training in the industrial metal professions with the professions
 - Plant mechanic 1072
 - Industrial mechanic 12508
 - Construction mechanic 2506
 - Tool mechanic 3209
 - Cutting machine operator 5589

- Regulation on vocational training in the industrial electrical professions with the professions
 - Electronics technician for building and infrastructure systems 89
 - Electronics technician for automation technology 2034
 - Electronics technician for devices and systems 2120
 - Electronics technician for industrial engineering 6515
 - Electronics technician for information and systems technology 86

- Regulation on vocational training for
 - Mechatronic technician 7688

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**Total
over 43,000
new contracts!**

Additional qualifications

DGB

System Integration

Process Integration

IT-supported system modification

Additive manufacturing processes

Digital Networking

Programming

IT-Security

Industrial metal
professions

Industrial
Electrical professions

Mechatronic
technician

■ Action requirements for in-company vocational training practice:

- Check whether additional qualifications are used in the training
- Enable access for all trainees
- Additional qualifications can also be used for further training in the company