

Vocational Training 4.0 – Qualifications and Skills for the Digitized Work of Tomorrow

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Agenda

- How to **identify** new competencies and qualifications?
 - Experiences and insights based on the project VET 4.0
- How to **integrate** NQCs?
 - Examples from regulatory work
- How to **implement** NQCs?
 - The BIBB perspective

Identification of NQCs

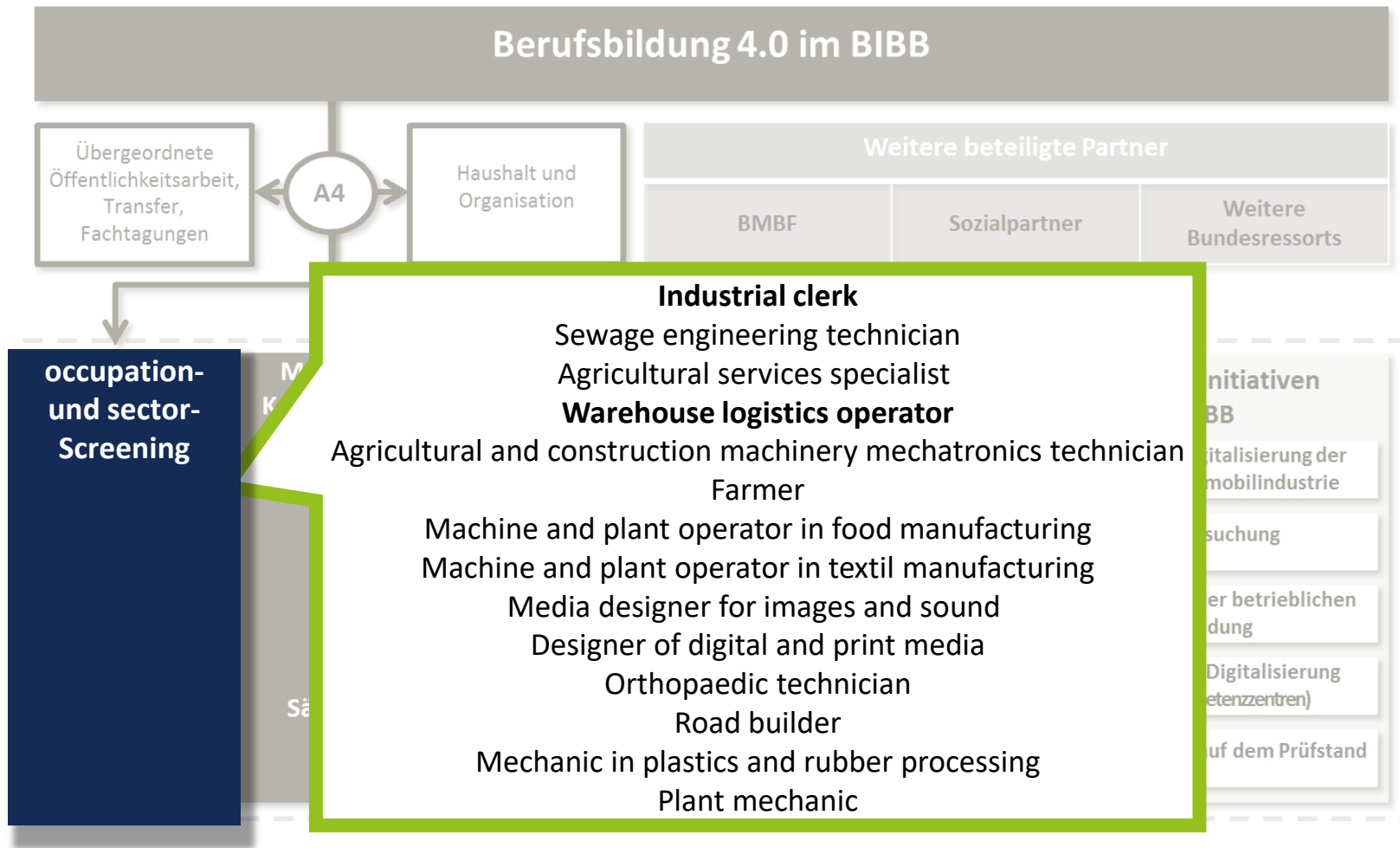
Instruments and possibilities

Which instruments do we use at BIBB?

- Analysis of job advertisements ~ 500.000/year
 - Changes in work tools and competencies can be made visible
- Projections regarding qualifications and need for skilled workers
- Research projects with occupational focus



NQCs for the digitized work of tomorrow



NQCs for the digitized work of tomorrow

Technology-Screening



Digitalization/Networking approaches in practice

What exists? Which companies use which technologies?
What innovations are expected in the future market?



Task-Screening



Influence on work tasks and competencies

How do the tasks change? Are there changes in the job profiles? Which skills will be needed for the work of tomorrow?



Qualification-Screening



Consequences for VET System

To what extent does the existing training regulation fit future requirements? Which qualification requirements are to be covered by further training?

Technology Screening

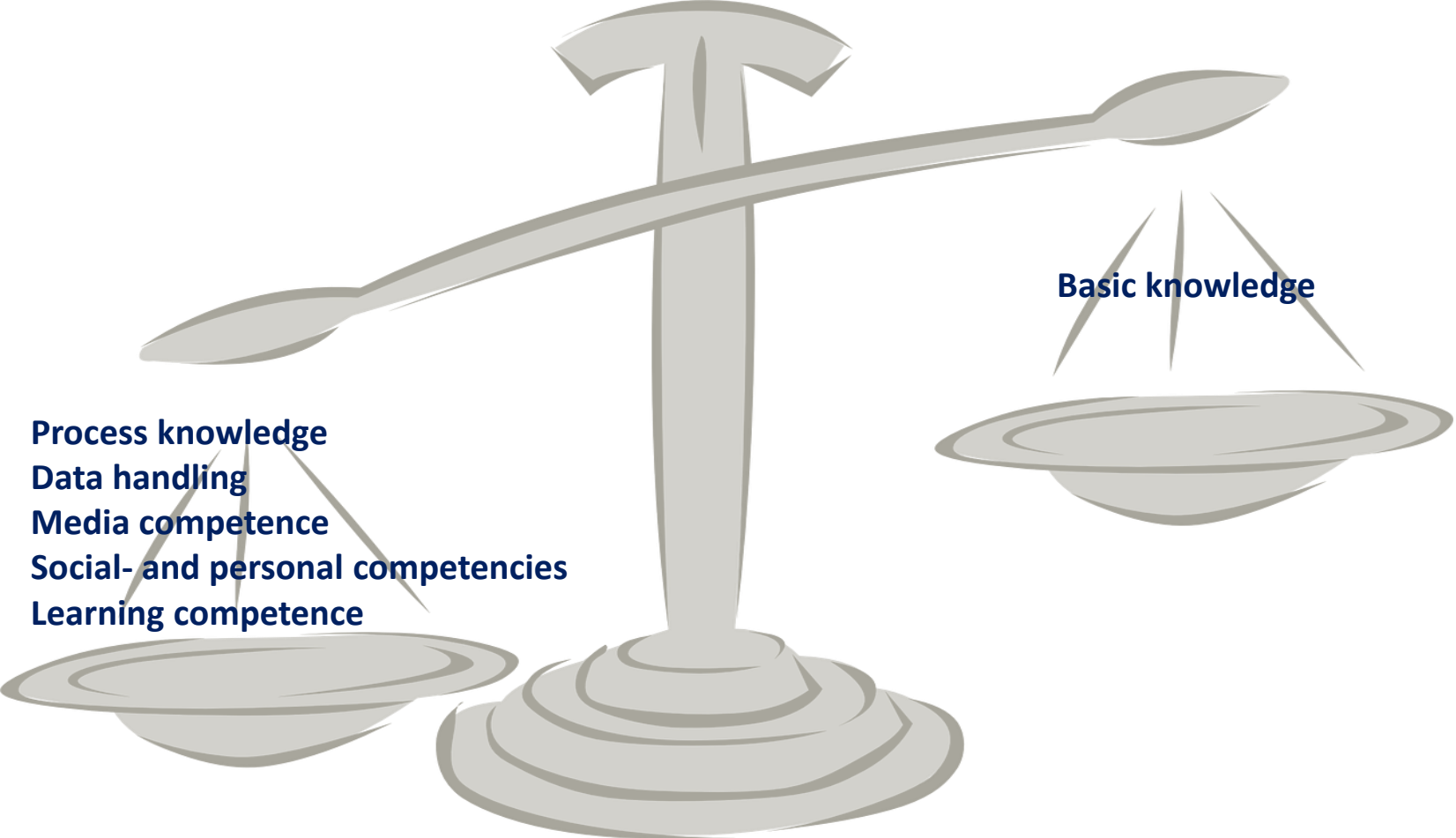


Task Screening

Changes in jobs and tasks

- Decline in routine activities - "simple" activities are increasingly automated
 - Work can be done by unskilled workers
- Observing and controlling activities gain in importance
 - Increasing demands on skilled workers
- The focus is on the process, not on individual activities
 - Alienation from the product, reduction of physical activities, visibility and traceability

Competencies



Data handling – Similar and yet different

Industrial clerks

- Research, identify and analyse data
- Knowledge of data protection essential

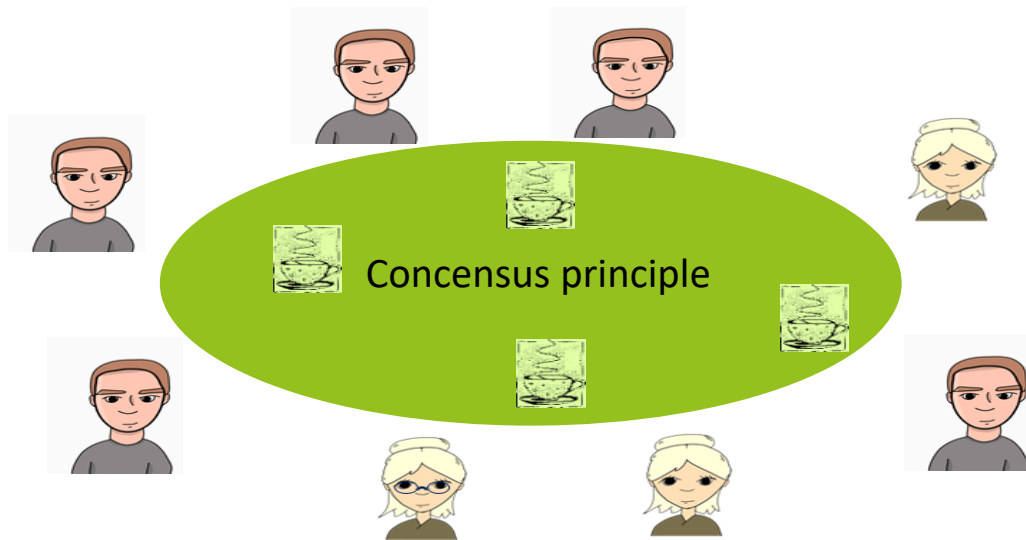
Warehouse logistics specialist

- System application knowledge and, if necessary, programming skills
- Enter and edit relevant data

Process mechanic

- Machine system application
- Identify and analyse data

Conein, S.; Schad-Dankwart, I. (2019). Similar and yet different – digitalisation and its consequences for individual occupational profiles. BWP, 3 (2019), p. 48-52



Integration of NQCs

Integration

Possibilities and measures:

- Updating of training regulations or further education regulations
 - Adaption
 - Development
 - Recut
- Additional qualifications
- standards for all trainees in the dual system

6. § 9 wird durch die folgenden §§ 9 bis 19 ersetzt:
„§ 9

Zusatzqualifikationen

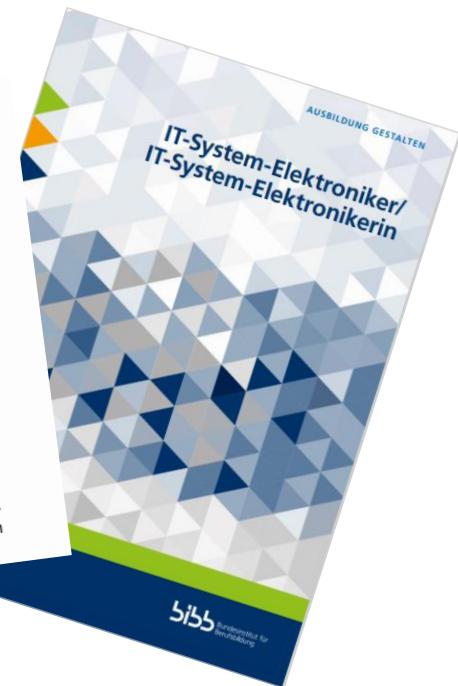
Über das in § 3 Absatz 2 beschriebene Ausbildungsberufsbild hinaus kann die Ausbildung in einer oder mehreren der folgenden Zusatzqualifikationen vereinbart werden:

1. Digitale Vernetzung,
2. Programmierung,
3. IT-Sicherheit und
4. Additive Fertigungsverfahren.

§ 10

Gegenstand der Zusatzqualifikationen

- (1) Gegenstand der Zusatzqualifikation Digitale Vernetzung sind die in Anlage 2 Abschnitt A genannten Fertigkeiten, Kenntnisse und Fähigkeiten.
- (2) Gegenstand der Zusatzqualifikation Programmierung sind die in Anlage 2 Abschnitt B genannten Fertigkeiten, Kenntnisse und Fähigkeiten.



Modern standards for all trainees in the dual system

1. Company, VET, Labour and Tarif Law

NEW: Meaning, function and contents of the training regulations - Possibilities of career advancement and professional development.

2. Safety and Health at the Workplace

NEW: Measures to avoid hazards as well as mental and physical stress for oneself and others, also preventive - ergonomic working methods

3. Environment and Sustainability

Cooperation in the sense of economic, ecological and social sustainability - Development of proposals for sustainable action in own field of work

4. Digitized Working World

Data protection and security - information research and lifelong learning - communication - valuing others while taking social diversity into account - joint reflection and task design



Implementation of NQCs

Implementation

The following changes can be observed:

- Project work during training
- Focus of training is on whole processes
- Use of media (e.g. mobile devices, VR glasses, AR as learning tool)
- New forms of learning (online platforms, etc.)
- Trainer increasingly becomes learning facilitator
- Targeted communication support
- External education for skilled workers



Implementation

Success factor: multipliers

- Broad information to the training practice
- Recommendation of main committee
- Public Relations
 - Articles and publication (information brochure + "Ausbildung gestalten")
 - Videos in "foraus.de"



Conclusion

Identification is one thing....but implementation is another

- The identification of NQCs is an essential task of vocational education and training research
- Educational effectiveness through consensus of all stakeholders
- Regulatory instruments are an important step
- Signal effect of standard vocational training positions,
 - Standards as minimum requirements in the area of the dual system
- Consideration in examinations necessary
- Implementation level as a success factor ... "the decisive factor is in the field".

Thank You For Your Attention!

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