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

Industrial clerk
- Sewage engineering technician
- Agricultural services specialist

Warehouse logistics operator
- Agricultural and construction machinery mechatronics technician
- Farmer
- Machine and plant operator in food manufacturing
- Machine and plant operator in textil manufacturing
- Media designer for images and sound
- Designer of digital and print media
- Orthopaedic technician
- Road builder
- Mechanic in plastics and rubber processing
- Plant mechanic
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

- Process knowledge
- Data handling
- Media competence
- Social- and personal competencies
- Learning competence

Basic knowledge
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

Integration of NQCs

Consensus principle
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
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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