The Development of Curricula in the Dual System
Impulses for a Discussion

Cologne, 17 June 2015
Rolf Richard Rehbold
Agenda - Key Questions

Introduction of the FBH - Build Up Skills Project as an example for curricula-related work

General Principles of the Dual System in Germany and their Advantages

Structural Principles for Curricula in the Crafts Sector

Steps to a Curriculum and beneficial frame conditions in the development process
Activities: Projects in Research and Work Program, consultation and assistance within in the framework of basic tasks as well as scientific monitoring of third-party funded projects in the following exemplary topical areas:

- **Vocational education and attitudes towards career choices in the transition from school to vocational training**
- **Career paths in the craft sector and “Berufslaufbahkonzept” (career path concept)**
- **Entrepreneurship Education in Europe**
- **Regulations for vocational training, advanced vocational training and examinations with focus on the Meister („master“) certification training**
- **Developing curricula for vocational training and further training in the craft sector**
- **Design and organisation of job-related learning processes**
- **E-Learning design und evaluation**
- **Analysing qualification needs**
- **Skill determination and selection methods**
- **Human resources development in SMEs**
- **Acknowledgement procedures for formal and informal skills**
- **Support for special target groups in the skilled crafts sector**
Example Project: Build Up Skills - Qualergy2020

First Step: Status Quo Analysis and Gap Analysis:
- Which qualifications are needed?
- How many skilled workers are needed?
- How can the current situation of skilled workers be described?
- Which offers do we have in the fields of initial and continuing VET?
- Where are gaps to be found?

Second Step: Development of National Roadmap
Example Project: Build Up Skills - Qualergy2020
Point of References for Curricular Work (and Analysis)

Processes in the enterprise

Advisory Services → Planning → Realisation → Approval → Maintenance and Repair → Disposal
Example Project: Build Up Skills - Qualergy2020
Point of References for Curricular Work (and Analysis)

Objects workers deal with

Building Envelope
- Building Shell
- Roof
- Facades
- Windows and Doors

Infrastructure of Buildings
- Interior Fitting
- Electrotechnology
- Heat Technology
- Ventilation and Air Conditioning

Energy Supply
- Geothermal Energy
- Biomass
- Solar Heat
- Photovoltaics
- Block Heat and Power Plant
- Wind Engine
Qualergy2020: Development of Analytical Grid for the qualitative Questions

First Step: One Table for every profession

<table>
<thead>
<tr>
<th>Relevant technological sectors</th>
<th>Advisory Services</th>
<th>Planning</th>
<th>Realisation</th>
<th>Approval</th>
<th>Maintenance and Repair</th>
<th>Disposal</th>
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<tbody>
<tr>
<td>Building envelope</td>
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<td>Building shell</td>
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<td>Windows and doors</td>
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<td>Heat technology</td>
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<td>Ventilation and air conditioning</td>
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<td>Energy supply</td>
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<td>Block heat and power plant</td>
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<td>Wind engine</td>
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**Question:** Which qualification bundles are covered by the profession concerning fields of technology and processes within the technologies?
Example Project: Build Up Skills - Qualitrain

Key Factor: Involvement of relevant stakeholders

- BUILD UP Skills QUALITRAIN aims at the conception and implementation of large-scale qualification and training schemes as well as accompanying measures which ensure a sustainable system of lifelong qualification of blue-collar workers in the building sector.

- Duration: 32 months (Nov. 2013 – June 2016)
Example Project: Build Up Skills - Qualitrain

1. Management

2. System of early recognition of future qualification needs

3. Cross-trade CVET program

4. Train-the-Trainer seminar

5. Development of support structures for lifelong qualification

6. CVET consulting/ CVET database for the building sector

7. Communication

8. EU-Exchange
Example Project: Build Up Skills - Qualitrain
Example for a Curriculum Development Process

① Analysis 1: Identification of „critical situations“ in the building sector concerning
• Interfaces between trades
• Interdependencies between fields of technology

Process analysis (BUS I – Tables)  Studies on construction damages  Workshops & Interviews with Experts  Survey

② Analysis 2: Comparison of gained knowledge on interfaces and system thinking with qualification in existing CVET programs

③ Selection of particularly relevant „critical situations“

④ Curricula development

⑤ Development of a teaching concept

(6) Testing, evaluation and transfer
General Principles of the Dual System in Germany and their Advantages

Dual refers to the two learning locations: Company and VET College

"Berufsprinzip" (occupational principle)  Joint State and Market Control

Corporatism  Germany's Federal System
General Principles of the Dual System in Germany and their Advantages

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Company</th>
<th>VET college</th>
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</thead>
<tbody>
<tr>
<td>Legal base for the IVET course</td>
<td>Federal government</td>
<td>State governments</td>
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<tr>
<td>Legal base for IVET in general</td>
<td>Apprenticeship contract</td>
<td>Compulsory vocational training</td>
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<tr>
<td>Legal base for apprenticed trades</td>
<td>Vocational Training Act</td>
<td>Education Acts of the individual states</td>
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<tr>
<td>Advice &amp; monitoring</td>
<td>Apprenticeship framework</td>
<td>National curriculum</td>
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<td></td>
<td>Responsible chambers</td>
<td>School supervisory agency</td>
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</tbody>
</table>
General Principles of the Dual System in Germany and their Advantages

Initiation

- Federal Institute for Vocational Training and Education (BIBB)
- Social Partners
- Ministry

"Corner Stones"

Social Partners

Compilation

1.a The BIBB in consultation with Federal Government experts nominated by the social partners, compile a draft version of the new apprenticeship framework.

1.b Experts appointed by the KMK draft a proposal for the content of the framework curriculum.

2. The two proposals are discussed, ensuring that they match each other with regard to content and timeframes (joint session).

3. The draft regulation is submitted by the BIBB president to the BIBB Steering Committee (Hauptausschuss), in which the social partners are also represented. The Committee’s approval is synonymous with a recommendation for the Federal Government to adopt the new apprenticeship framework.

4. KMK approval of the two regulatory documents.

5.a Once the legal compliance of the apprenticeship framework has been checked, it is then adopted by the ministry responsible.

5.b The KMK publishes the framework curriculum in its compendium of resolutions (Beschlusssammlung).
General Principles of the Dual System in Germany and their Advantages

"Paying for apprentices means INVESTING."

Advantages for the company:

• ensuring availability of skilled personnel
• reducing costs of incorporation/introduction
• higher motivation and binding to the company
• qualification according to the needs of the company
• productive outcome of the apprentices

Advantages for the apprentices:

• broad qualification in a certain field of work
• good prospects on the job market
• well known and recognised certificate
• hands-on experience and knowledge
• money during learning process
### Structural Principles for Curricula in the Crafts Sector

<table>
<thead>
<tr>
<th>Practical Situation</th>
<th>Competencies (Processes)</th>
<th>Content/Knowledge</th>
</tr>
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<tbody>
<tr>
<td>....</td>
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</table>

- principle of competency-based structure.
- not to create a list of theoretical contents, but to let the learning process start with the practical situations from the field of work.
- Starting with specific problem situations from their joblife makes the participants aware of their learning needs and motivates them. Moreover they deliver the context for applying the learnt skills and knowledge to a problem solution process.
- it is useful to use a table with three columns, which is built up and read from the left-hand side to the right-hand side. The practical situations shall be described in the first column.
<table>
<thead>
<tr>
<th>Practical Situation</th>
<th>Competencies (Processes)</th>
<th>Content/Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting up a workstation for the production of wooden</td>
<td>• Cleaning, preparing workstation</td>
<td>• Types of Tools</td>
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<tr>
<td>furniture</td>
<td>• Choosing tools and providing for the working process</td>
<td>• Safety regulations and guidelines</td>
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<td>• Ensuring energy supply</td>
<td>• Regulations for disposal and recycling of material</td>
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<td>• Incorporating safety measures considering safety regulations and guidelines</td>
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<td>• Ensuring waste disposal</td>
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<tr>
<td>Producing parts of wooden furniture</td>
<td>• Analysing and judging wood piles considering wood type, texture and moisture</td>
<td>• Wood Types and their properties</td>
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<td></td>
<td>• Cutting to size pieces of woods in accordance with given measurements</td>
<td>• Influence of texture and moisture on the quality of the product</td>
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<td>• Preparing parts for assembly</td>
<td>• Measurement units and sketches</td>
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<td></td>
<td>• Putting together parts, especially by screwing, gluing and nailing</td>
<td>• Cutting techniques with different tools</td>
</tr>
<tr>
<td></td>
<td>• Checking quality of parts and functionality of furniture</td>
<td>• Techniques of fitting together parts</td>
</tr>
</tbody>
</table>
Steps to a Curriculum

Step 1: Finding experts for committee (stakeholders: experts, employers, employees, confederations, trade unions, vocational training institutions)

Step 2: Analyzing working processes in different trades within the crafts sector

1. Analysing and understanding customer needs
2. Developing and planning solutions/products
3. Presenting and offering the solution/product
4. Planning and preparing the implementation of the solution
5. Executing the implementation or production
6. Controlling the result and handing/passing over result to customer

   a) What are the practical situations?
   b) Which level in the enterprise (employee, manager, owner) is dealing with which processes?

Step 3: Agreement on relevant situations for the intended program

Step 4: Specifying the situations: competencies and content (columns two and three)
Steps to a Curriculum

Step 4: Specifying the situations: competencies and content (columns two and three)

Each situation has to be described by the specific processes, which must be mastered. When thinking of the processes it is helpful raising the questions:

a) What are planning activities (e.g. analysing, developing, ...)?

b) What are implementing activities (e.g. producing, connecting, installing, ..)?

c) What are controlling activities (e.g. checking measurements, checking surfaces...)?

Step 5: Developing a concept for the implementation
Kontakt

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