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The Dual System Of Vocational Training in Germany

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Structure

1. Cornerstones of the „Dual System“
2. Some statistics
3. Modernisation of the occupations
4. Impact on work organisation and youth unemployment
5. Challenges
6. Conclusions

1.1 Cornerstones of the „Dual System“

- Apprenticeship contract with a company - Apprentices are employees and not students
- Apprentices receive a remuneration (minimum or more through collective agreements)
- No minimum school requirements
- At least two learning locations: Company and vocational school in addition often extra-company training
- Company bear the costs for company training, the state for the vocational schools
- Companies must be able to train: Instructors must take the trainer aptitude test (part of the master craftsman’s examination)
- Chambers register apprenticeship contracts, monitor company ability to train, organize examinations and issue certificates

1.2 Cornerstones of the „Dual System“

- Training only possible in one of the 323 (2022) national recognized occupations
- Vocational Training Act defines standards: Training should lead to autonomous ability to act in a profession
- No modular structure: Examination in a holistic project: a workpiece or a business process from the customer's order to delivery to the customer.

- Occupational profiles and the curicula for the company training are developed by the social partners with the support of the Federal Institute for Vocational Training
- Examinations by experts from the social partners
- State responsible for the framework curricula for the vocational schools

1.3 Cornerstones of the „Dual System“

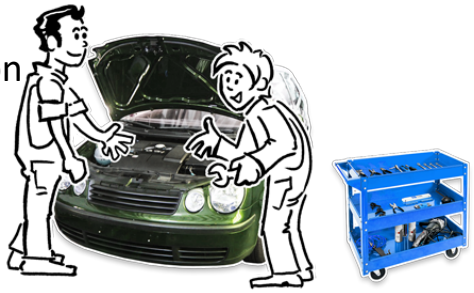
- Standardized promotional training for each of the 323 occupations (master, business administrator, technician)
- National means-tested scholarship system for promotional training
- Upgrading of promotional training to **level 6** of the German Qualification Framework: So called **„Professional Bachelor“** equal to Bachelor from tertiary education
- New type of hybrid training:
  - „Dual Study“: combination of vocational training and tertiary education
  - 2019: 109 000 dual students, 51 000 participating firms

1.4 Key characteristics of the „Dual System“

Dual Learning at two venues

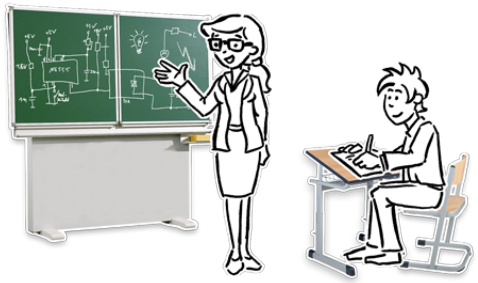
70 % Training in the company

- Structured training under real work conditions
- Trainees participate in actual business activities
- Trainees receive a remuneration



30 % Lessons in vocational school

- Lessons in class
- Occupation related (2/3) and
- General (1/3) subjects

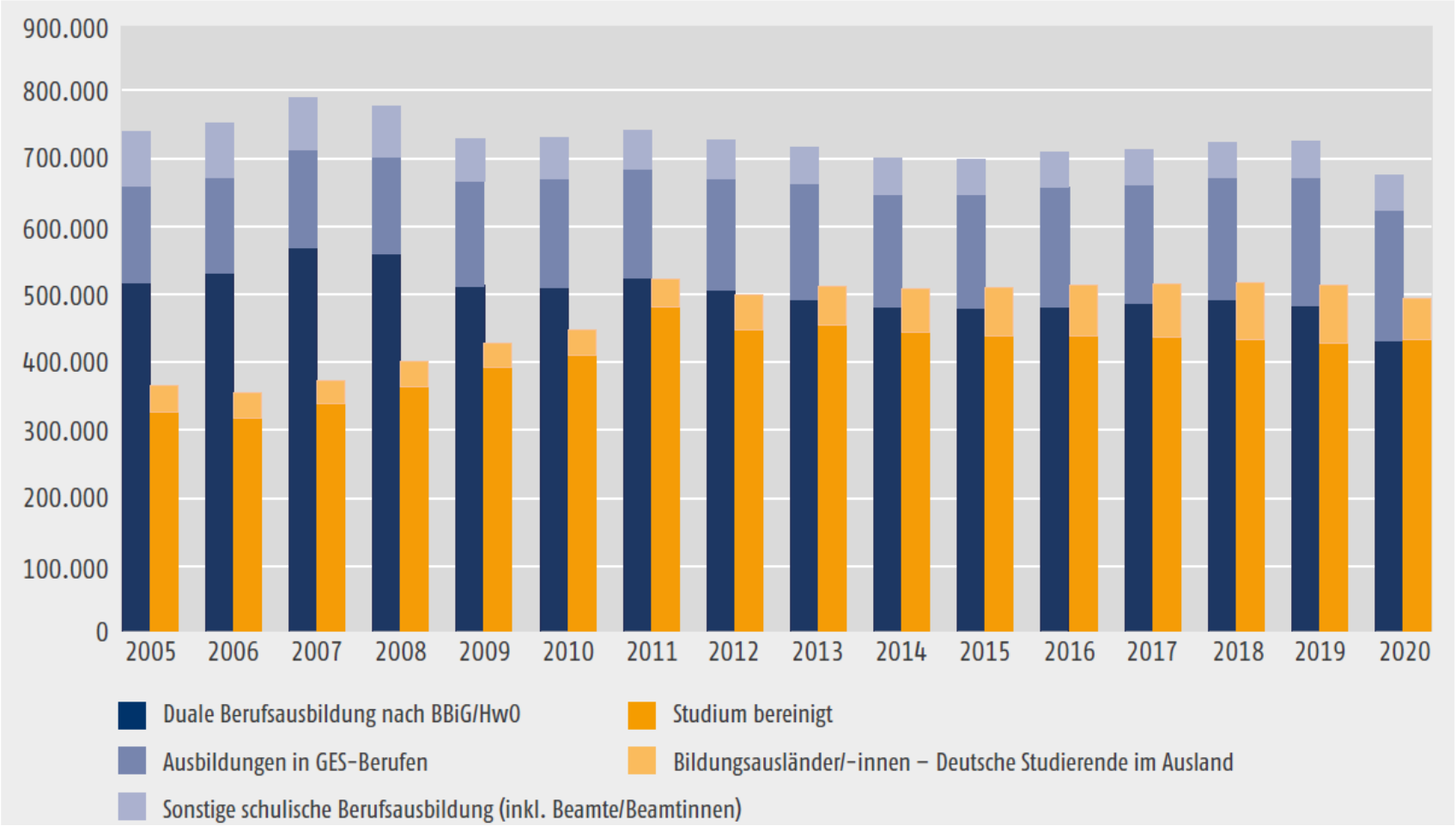


Dual VET lasts from two to three and a half years.

1.5 Legal mininimum remuneration for apprentices

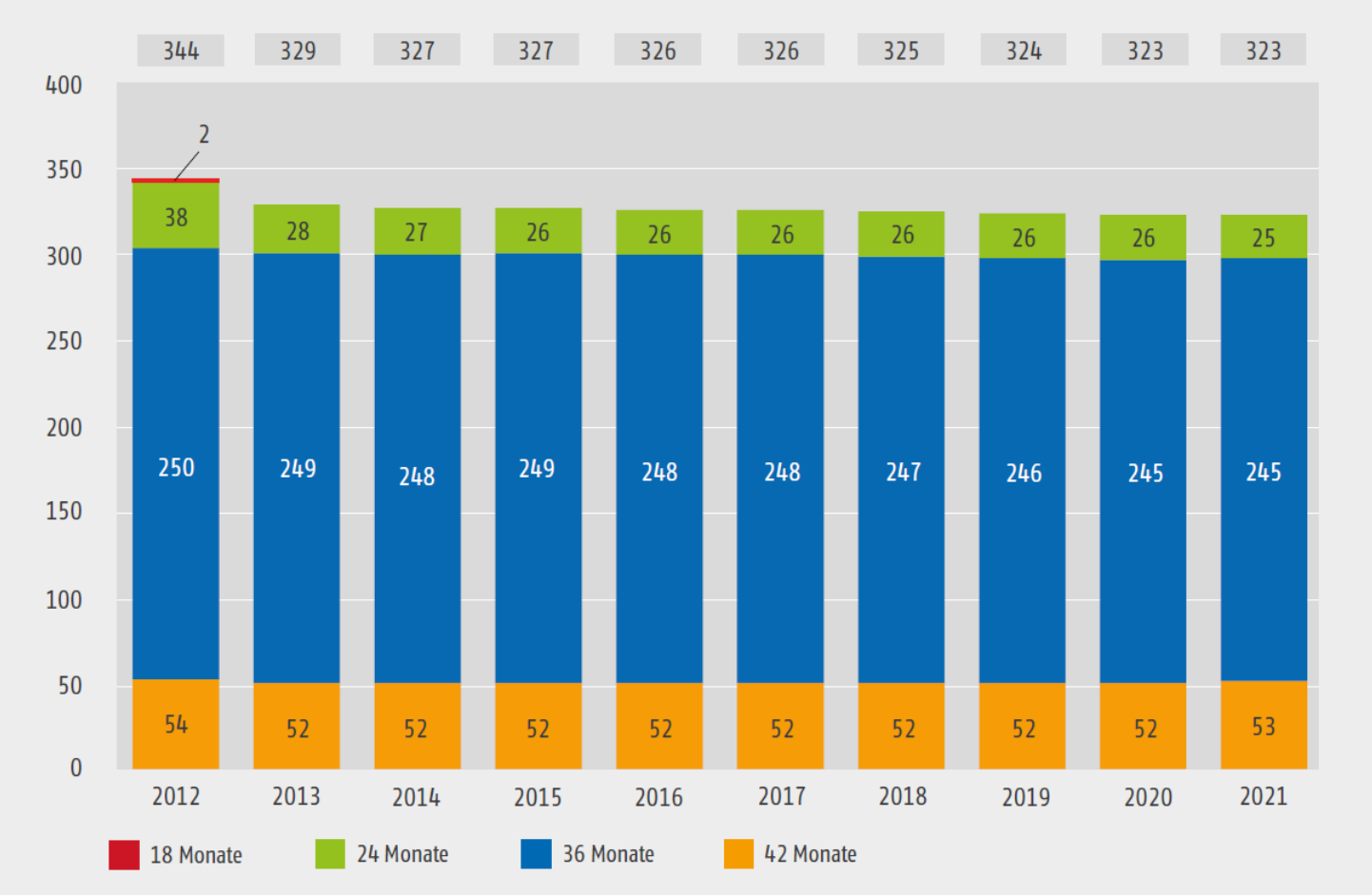
Beginn der Ausbildung	1. Aus-bildungsjahr	2. Aus-bildungsjahr + 18 %	3. Aus-bildungsjahr + 35 %	4. Aus-bildungsjahr + 40 %
2020 (01.01.-31.12.2020)	**515,00 €**	**607,70 €** (515 € + 18 %)	**695,25 €** (515 € + 35 %)	**721,00 €** (515 € + 40 %)
2021 (01.01.-31.12.2021)	**550,00 €**	**649,00 €** (550 € + 18 %)	**742,50 €** (550 € + 35 %)	**770,00 €** (550 € + 40 %)
2022 (01.01.-31.12.2022)	**585,00 €**	**690,30 €** (585 € + 18 %)	**789,75 €** (585 € + 35 %)	**819,00 €** (585 € + 40 %)
2023 (01.01.-31.12.2023)	**620,00 €**	**731,60 €** (620 € + 18 %)	**837,00 €** (620 € + 35 %)	**868,00 €** (620 € + 40 %)

2.1 Entrants into vocational training and tertiary education 2005 – 2020 (apprenticeship rate 2020 5%)



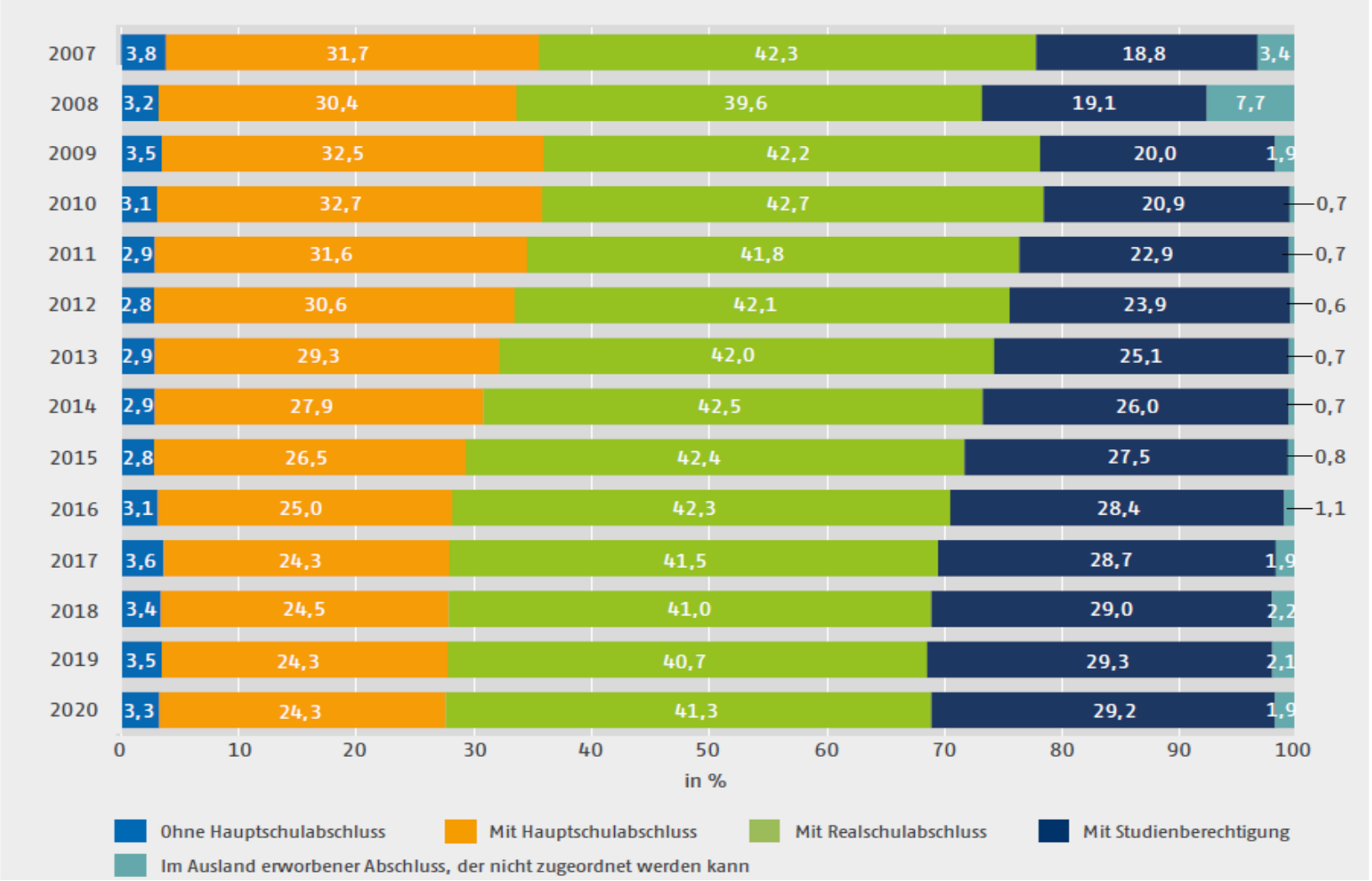
Source: BiBB-Datenreport 2022

2.2 Duration of training: Mostly 3 year training



Source: BiBB Datenreport 2022

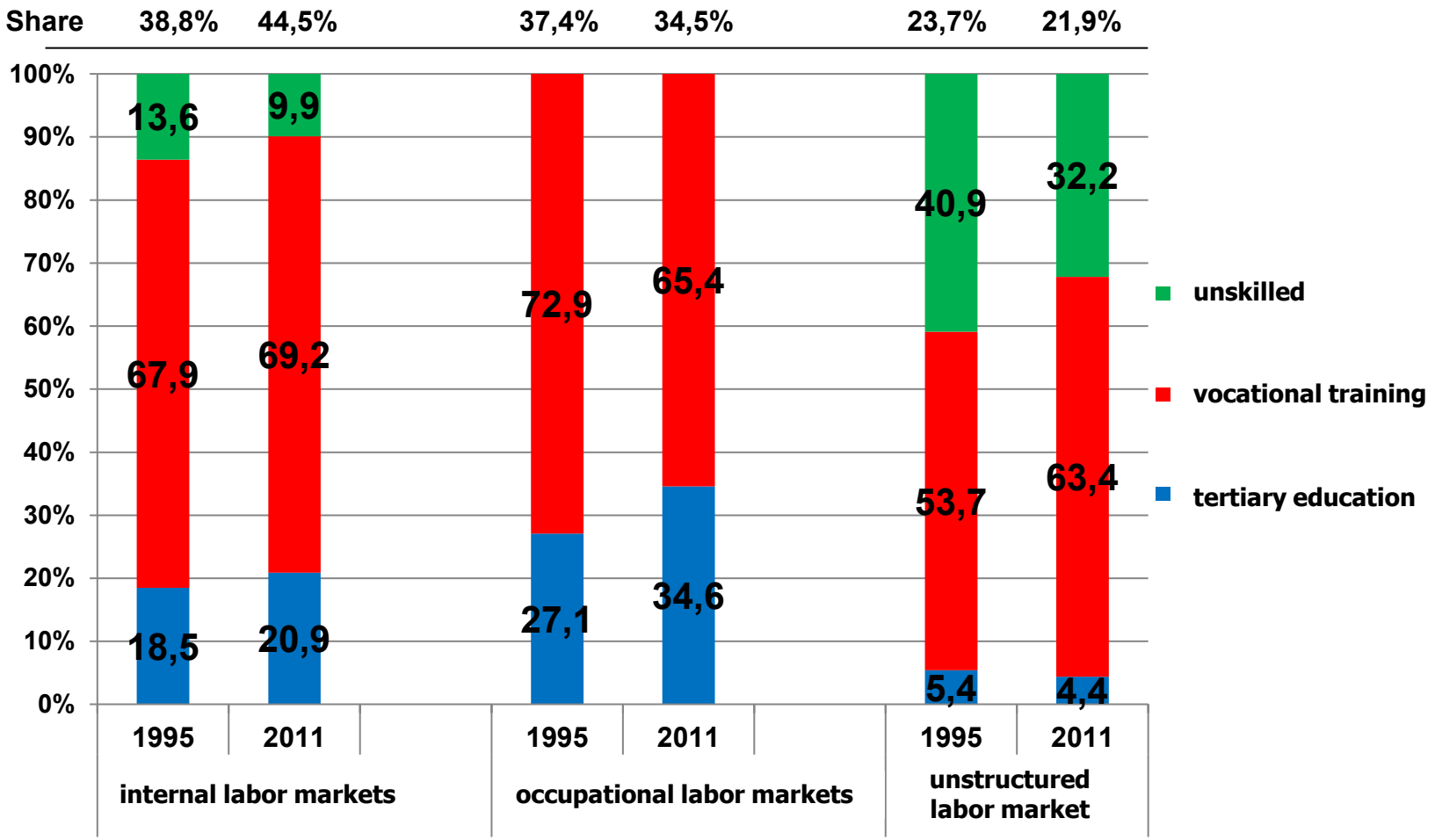
2.3 School certificates of new entrants into the dual system 2007 - 2020



Source: BiBB Datenreport 2022t

internal labor markets
internal labor markets
internal labor markets
occupational labor markets
occupational labor markets
labor markets

2.4 Skills structure in the segments of the German labor market 1995 and 2011 in DE in % (SOEP)



Source:: Bosch, G., 2014: Facharbeit, Berufe und berufliche Arbeitsmärkte.WSI-Mitteilungen 67 (1), S. 5-13

3.1 Modernization of vocational training

- Most of the 323 occupations in the dual system have been modernized in the last decades
  - Occupational profiles broader than in the past and technology open
  - Learning in teams and in real business processes to acquire social skills and understand the context of the job
  - Creation of optional modules for initial or further training
- Parallel: Modernization of promotional training for masters, technicians, business administrators

3.2 Modernization of the German apprenticeship system

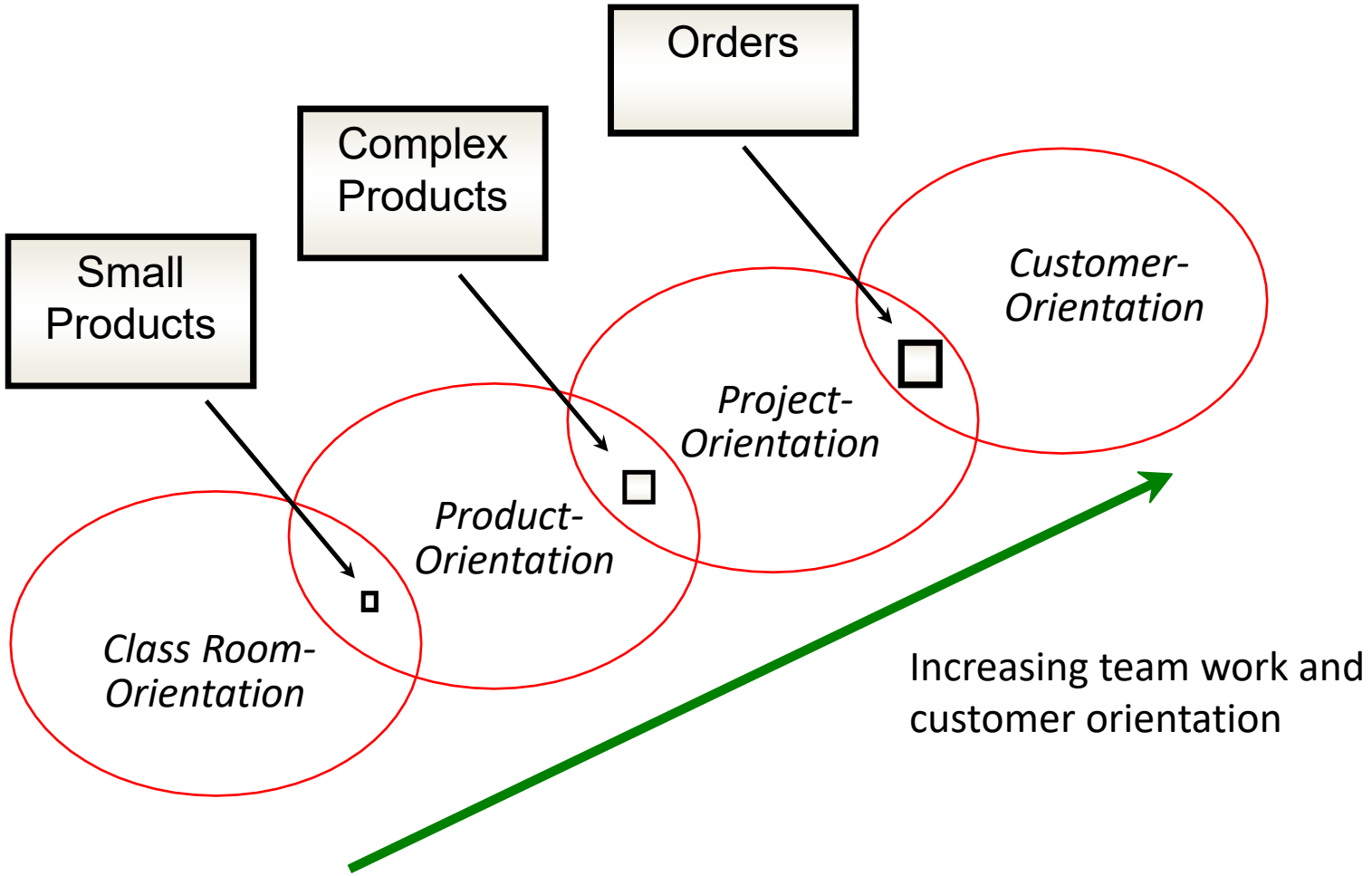
- „ Employer Demands“ not reliable signals for modernization

- High diversity of employers „demands“ depending on work organization, time horizon of planning, average tenure of employees, low road vs. high road strategies

- Therefore modernization based on early warning systems - analysis of new technologies and forms of work organization, training in most advanced companies, trends in further training ….

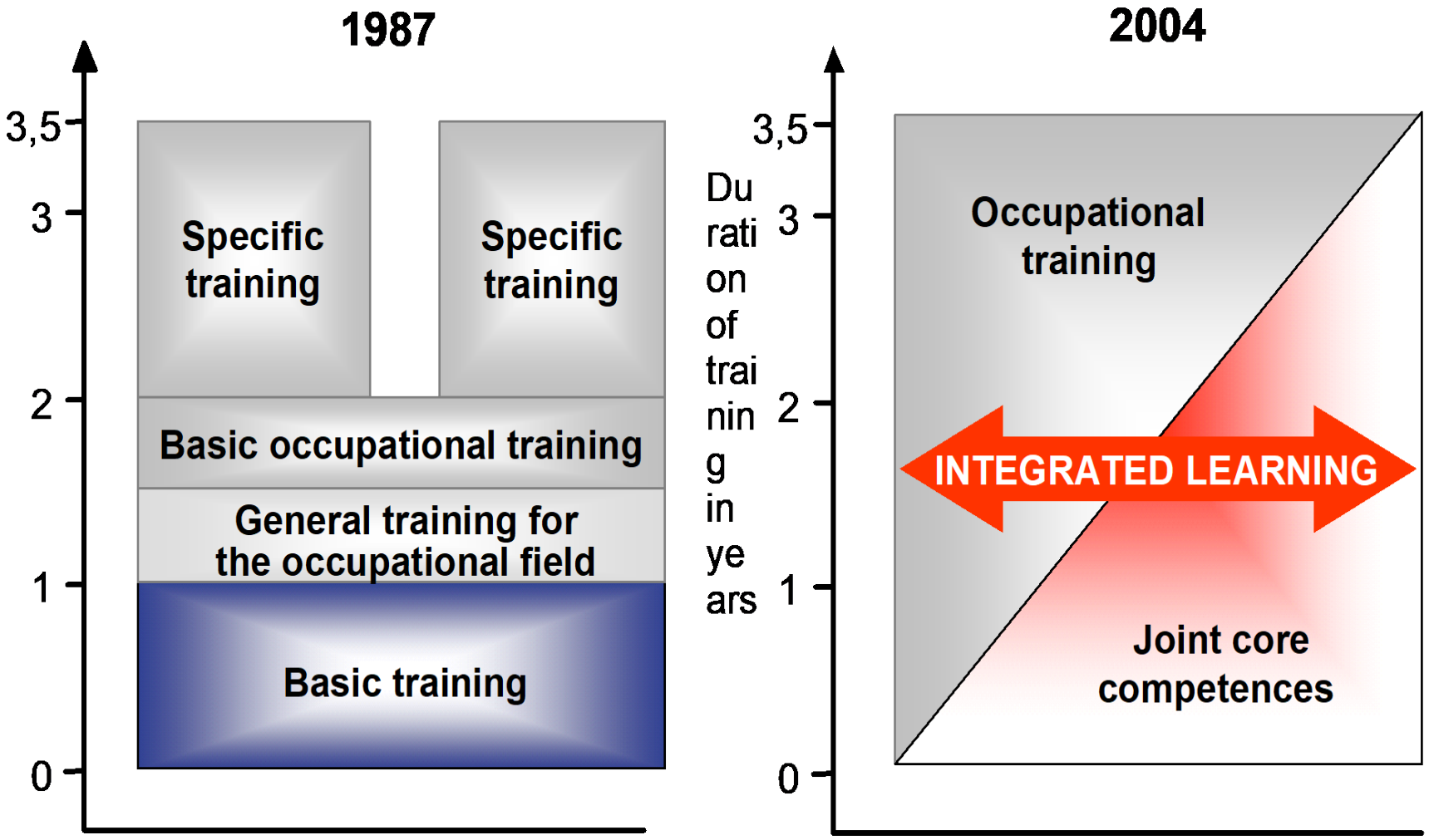
- In the modernisation of the new construction occupations more then 100 experts from the social partners involved – process organized by the Federal Institute for Vocational training (BiBB)

3.3 New learning forms: From product towards team work and customer-or business process orientation



Source: Bosch 2000a

3.4 Example: Training curricula in the German metalworking trades 1987 and 2004 (1987 - 45, 1987 - 16, 2004 – 5 occupations)



3.6 Profile of the "Industrial mechanic"

- Organise and check production and manufacturing processes
- Make structural components and subassemblies and assemble them to produce technical systems
- Identify and document faults and their causes in technical systems
- Repair technical systems - Retrofit machines and systems
- Complete maintenance work and inspections - Select testing procedures and testing equipment
- Deliver technical systems and products to customers and provide instructions in the use of the plant
- Ensure the functionality of technical systems
- Monitor and extend electrical control components
- Consider business processes and apply quality management
- Act autonomously in completion of activities taking into account relevant regulations and safety provisions
- Coordinate work with upstream and downstream departments
- Set up workstations - Communicate with internal and external customers in a manner appropriate for the situation; work as part of a team
- Check and document maintenance and assembly work with due regard to company quality management systems
- Use IT systems, including in digitalized processes
- Apply regulations relating to data protection and information security

3.7 Profile of the „Industrial clerk"

- Carry out marketing activities ranging from the analysis of market potential to the provision of customer service
- Advise and look after customers
- Determine the requirement for products and services, procure materials, means of production and services and plan their use for the production of goods and services or sales and distribution
- Support the process of order handling, for example in the production of goods and services and logistics
- Deal with business management issues within all functions of a company (financing, investment, profitability, cost planning, cost analysis and tracking etc.)
- Deal with accountancy operations
- Evaluate key indicators and statistics performance monitoring and for the management of business operations
- Use instruments for human resources recruitment and selection, plan personnel deployment and deal with human resources administration tasks
- Plan and organise work processes
- Use foreign language documentation, correspond and communicate in typical situations with customers in a foreign language
- Work in a team and project-oriented manner within business operations using current information, communications and media technology
- Exhibit communication, cooperation, discussion-chairing, presentation, problem-solving and decision-making skills.

3.8 Since 2021 Cross-occupational requirements for modernisation

Cross-occupational requirements on (1) occupational health and safety, (2) digitalisation and (3) environment and sustainability (4) organisation of the training company, labour and collective bargaining law

Example environment and sustainability

"(a) Identify possibilities for avoiding operational burdens on the environment and society in their own area of responsibility and contribute to their further development and contribute to their further development
(b) in work processes and with regard to products, goods or services, use materials and energy in an economically and energy under economic, environmental and social aspects of sustainability.
c) comply with environmental protection regulations applicable to the training company
d) avoid waste and recycle or dispose of substances and materials in an environmentally friendly waye) develop proposals for sustainable action for their own area of work
f) cooperate in compliance with company regulations in the sense of economic, ecological and social sustainable development"

4.1 Impact on work organisation and youth unemployment

World-wide same technologies but different skill structures

- **Assembling of Airbus by skilled workers in DE and with on-the-job-trained in UK, FR, ES *(Bremer 2008)***
- **Retail trade trains apprentices in DE – in FR, UK, USA unskilled are employed *(Carré u.a. 2010)***
- **Broad brick-layer training in DE + DK (3,5 years), short training (1 year) in IT und UK *(Clarke/Winch 2014*)**
- **Nurses vocational trainng in Germany – bachelor/master in the UK and USA**

4.2 Impact on work organisation and youth unemployment

Impact on high shares of skilled workers on the work organization:

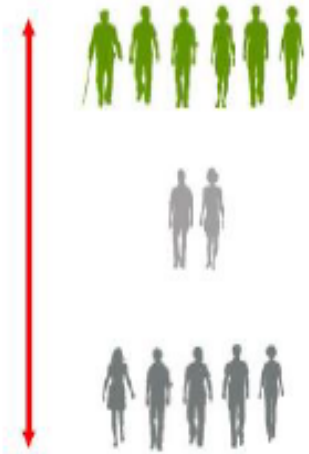
- less supervisors
- more complex job tasks
- steep learning curve after re-organization
- good communication between shop floor and management at eye level especially if middle managers are coming from vovational training (via promotional training (master, business administrator, technician) or via additional tertiary education
- Fast diffusion of innovations into SME's

Skilled workers (Facharbeiter) – secret of German competiveness

4.4 VET the key to create flexible work organizations in the world of industry 4.0

Polarization

Segmented organization



Erosion of jobs on the medium skill level

„lousy and lovely jobs"
(Goos/Manning)

Upgrading

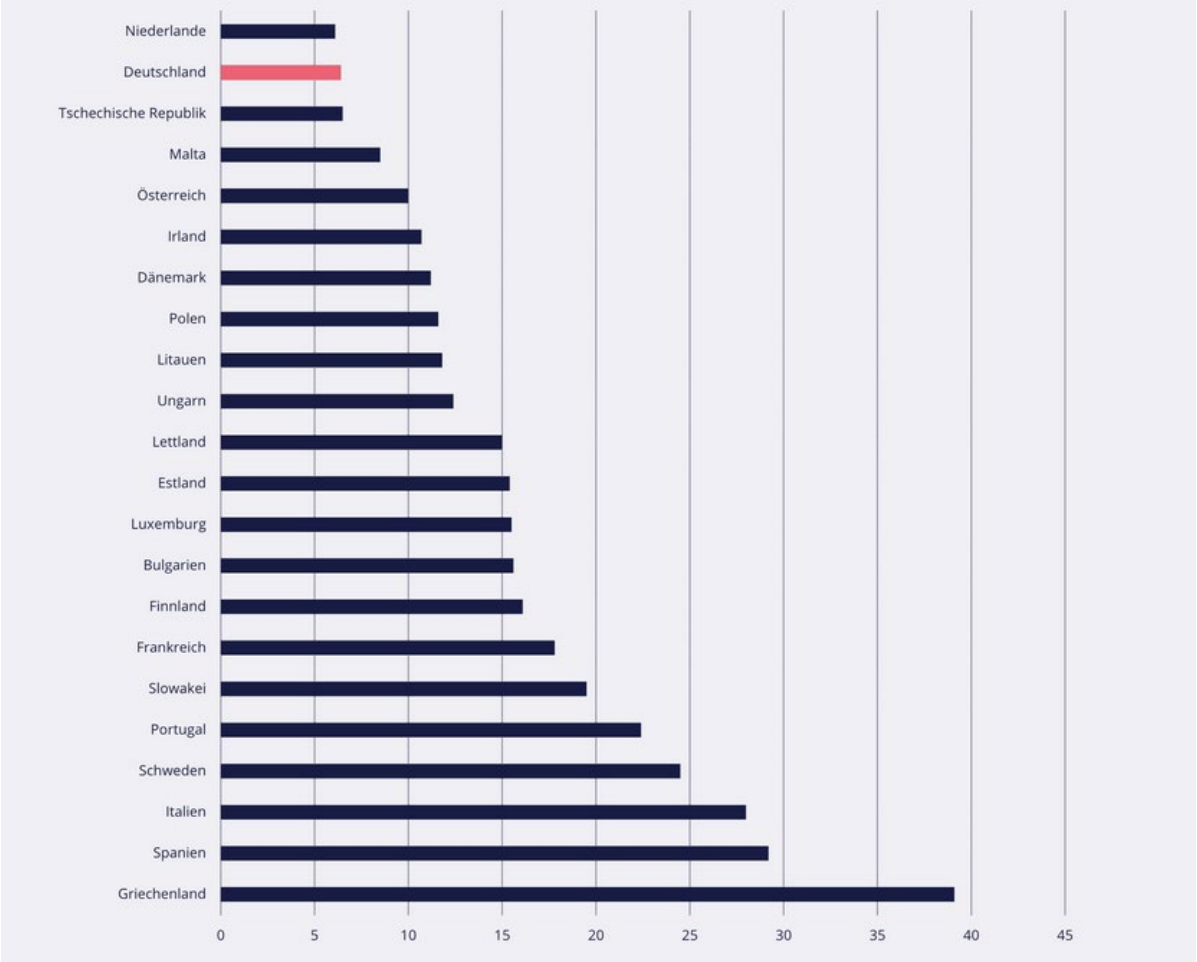
Integrated, highly flexible organization

Digitally based cooperation of different skills

„better jobs at every level" (Zuboff)

Source: Hirsch-Kreinsen (2018) http://www.fapesp.br/eventos/2018/12046/day30/1330_Hirsch_Kreinsen.pdf

4.5 Youth unemployment in the EU 2021



Source: Eurostat

5. Main Challenges

- Ensuring a sufficient supply of apprenticeship places from the companies: Training alliances at national, regional and industry level
- Modernisation of the whole system including training of the trainers and teachers, up-to-date equipment in the vocational schools etc.
- Reducing mismatch between supply and demand and reducing high rates of drop put from training (around 23%)
- Enabling school drop-outs for an apprenticeship training
- Keeping vocational training attractive compared to tertiary education: decent pay for skilled workers crucial

Source:

6. Conclusions

- Dual training is a system with committed players in the social partners and politics
- Dual system not a catch-all system for weak pupils - young talent for innovative economy
- Positive impact on employment and productivity

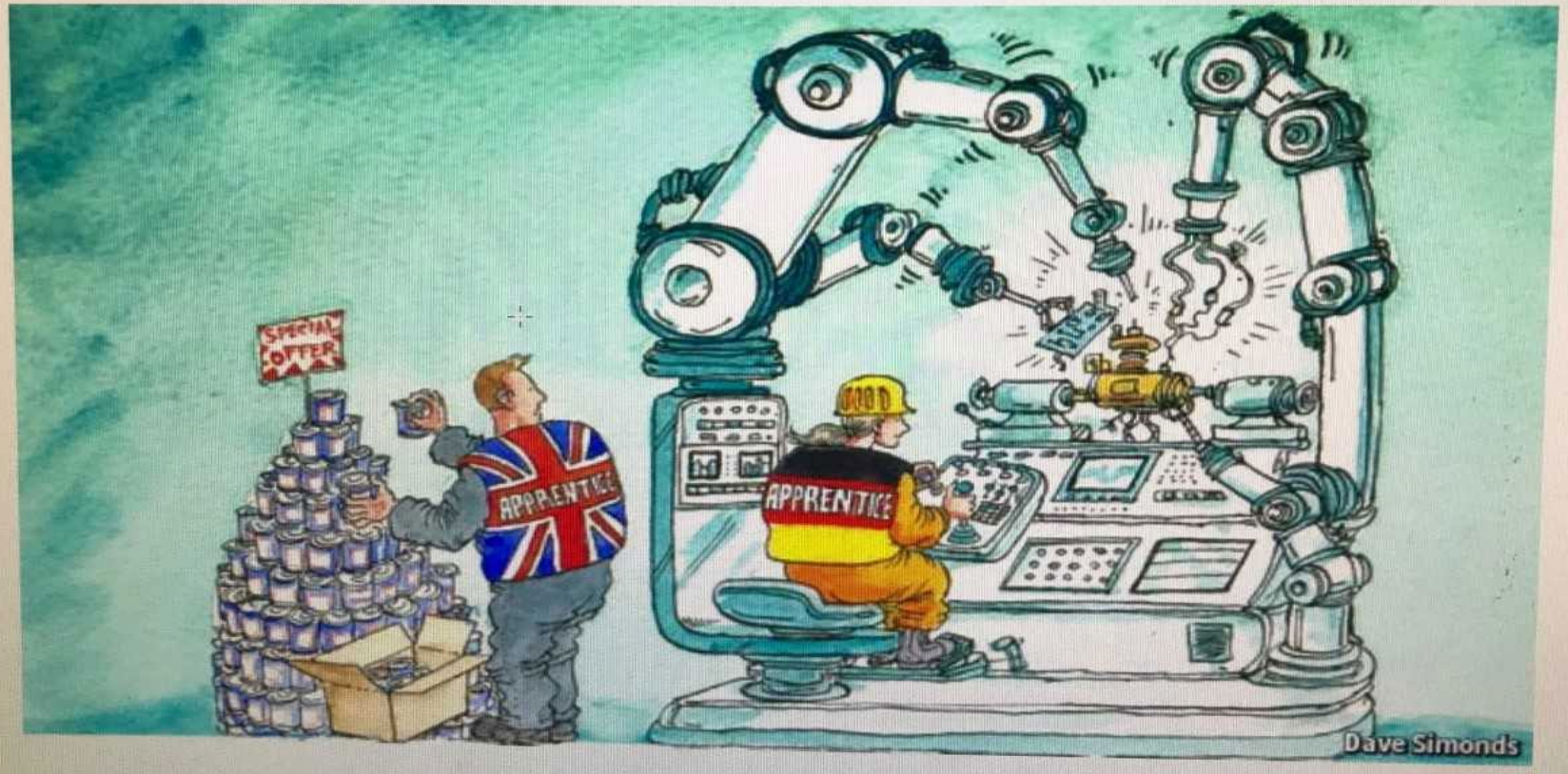
Challenges: Companies' willingness to train fragile, academic drift, declining wages for many skilled workers, too high share of school drop-outs

Not easily transferable to other countries: Main problem

- Create willingness to train among companies
- Create a positive image of vocational training

„Keeping up with the Schmidts“ -- ??

„Attempts to build a snazzy, German style apprenticeship system crash into cultural and economic differences“ *[The Economist, 26.04.2014]*



Cartoon von David Simonds©