BOLSTER UP II

Transparency for Upholstering and Cabinet Making Qualifications and Quality in the European Furniture Industry

National Analysis Germany

A. **Basic Information** and classification of the apprenticeship as cabinet maker & upholsterer

B. **Acquirement of qualification:** Organisation and system of apprenticeship

C. **Placement of qualification:** VET-institutions, learning models and learning places

D. **Profile of qualification:** Professional skills and key qualifications

E. **Utilisation of qualification:** Requirements and needs from workplaces, labour and employment system

F. **Alteration of qualification:** Trends, transformation and future development of qualification

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Introduction

In historical, traditional, cultural and institutional terms, vocational training in Europe has assumed a variety of forms within each member state and is therefore a highly diverse sector. The German vocational training system can be described in the following way:

(1) The dual training system is characterised by its dual organisational structure, according to which training is provided by the relevant company and the state. In this way, the dual vocational training system differs from the other two basic vocational training models found in the EU. With the "school model", the state alone is responsible for planning, organisation, funding and inspections. As part of the "market model", vocational qualifications are obtained by means of in-company training processes, depending on the company's needs.

(2) Essentially, the German job market is organised according to professions. In other words, it is structured according to different lines of work, in order to ensure transparency. The vocational concept is a key principle and forms the basis of dual training. "Professions" are used to describe the national labour potential. They are used as key categories when skilled workers/employees apply or are recruited for jobs and also provide a framework for pay scale grouping. The fact that the German job market is structured according to the vocational concept is considered unusual, compared to the rest of the world.

(3) In Germany, vocational training is subdivided into the following economic structures: trades, industry and services. A distinction is therefore made between apprenticeships that fall within the different sectors. Approx. 60% of all young people complete their initial training by means of one of around 345 dual apprenticeships that are currently recognised by the state. In the wood industry, the profession of "joiner" is considered a trade, while the professions of "wood mechanic" and "upholsterer" would be considered part of the industrial sector.*

* ***Gender issue:***
In this document the reader should read "He and She" where "He" is written.

A. Basic Information and classification of the apprenticeship as cabinet maker & upholsterer

The professions of joiner, wood mechanic and upholsterer are recognised by the state as apprenticeships and approved by the Federal Ministry of Economics and Technology and Federal Ministry of Education and Research. The vocational skills and framework conditions, on which the training is based, are recorded in the Crafts and Trades Regulation Code (Handwerksordnung) for the relevant profession and in the Vocational Training Law (BBiG). The competent regional chambers of trade, industry and commerce act as supervisory and certification authorities. It takes three years to become fully qualified as a skilled worker (industry) or craftsman (trades).

An overview of apprenticeships

<table>
<tr><td>Recognised apprenticeships: TRADES</td><td>Recognised apprenticeships: INDUSTRY</td></tr>
<tr><td>Competent authority
Chamber of Trade</td><td>Competent authority
Chamber of Industry and Commerce</td></tr>
<tr><td>Legal basis
Crafts and Trades Regulation Code (HWO)</td><td>Legal basis
Vocational Training Law (BBiG)</td></tr>
<tr><td>CABINET MAKER (JOINER)
Dual training
Duration: 3 years</td><td>WOOD MECHANIC
Dual training
Duration: 3 years
Specialist fields:
(1) Furniture making and interior fittings
(2) Construction elements, wood packaging and frameworks</td></tr>
<tr><td>INTERIOR DECORATOR
Dual training
Duration: 3 years
Specialist fields:
(1) Flooring, (2) Upholstery, (3) Decorating and lighting, privacy and sun protection systems, (4) Wall and ceiling decoration</td><td>UPHOLSTERER
Dual training
Duration: 3 years</td></tr>
<tr><td colspan="2">SADDLER (Trades and industry)
Dual training
Duration: 3 years
Specialist fields: (1) Vehicle upholstery, (2) Luxury bag making, (3) Equestrian saddlery</td></tr>
<tr><td colspan="2">UPHOLSTERY AND DECORATIVE SEAMER (trades and industry)
Dual training
Duration: 2 years</td></tr>
</table>

As one of the main objectives of the project is to create a European profile for the industrial and artisanal production of furniture and upholstery, apprenticeships for interior decorators and saddlers will not be covered in this document. **This overview will focus is on 3-year apprenticeships for fully qualified furniture makers.** For this reason, no further consideration will be given to the profession of upholstery and interior furnishings seamer, which requires only two years of training.

A. **Basic Information** and classification of the apprenticeship as cabinet maker & upholsterer

Developments/number and profiles of a apprentices in the respective trade

On 31.12.2011, 18,744 apprentices were being trained as joiners, 261 young people were training to become upholsterers and 2,010 were working as apprentice industrial wood mechanics. The number of apprentices has been falling in all three professions for a number of years. Compared to 2008, the wood mechanics suffered the greatest decline (- 1,269 / -38.7%), followed by the joiners (- 3,561 / -16.0%) and upholsterers (-42 / - 13.9%). Overall, the number of apprentices in all 3 professions fell by 4,872 during the period 2008 – 2011 (-18.8%).

Fig. 1: Apprentices on 31.12.2012

Profession / Year	1995	2005	2008	2009	2010	2011	Change 2011:2008
Cabinet maker	42.426	23.472	22.305	21.213	19.584	18.744	**-3.561**
Upholsterer	438	330	303	291	270	261	**-42**
Wood mechanic	3.087	3.744	3.279	2.883	2.424	2.010	**-1.269**

Source: BIBB - Datenblätter

Job-specific application areas

CABINET MAKER

Working area

Joiners work at small and medium-sized craft trade companies in such sectors as construction, furniture production, window manufacture and interior finishing.

Profile

Single and small batch production, depending on customer orders, on-site assembly for the customer

Fields of activity

Joiners work mainly in two fields: Whereas cabinet makers chiefly produce items of furniture and fitted furniture as well as carry out restoration work and finish building interiors, construction carpenters work building houses. They are primarily concerned with making windows, doors, shelving and building stairs.

Vocational skills

Cabinet makers are able to develop their own ideas to design, draw and build products taking into consideration design and functional criteria and, when necessary, discuss job order issues with clients. They work unsupervised from technical documentation and as instructed. The also take economic factors into consideration. Finally, they assess finished work and implement measures to guarantee quality.

Sources: europass Tischler/Tischlerin and BA 2013, Berufenet

A. **Basic Information** and classification of the apprenticeship as cabinet maker & upholsterer

WOOD MECHANIC

Working area

Wood mechanics work for companies operating in the furniture, interior decoration, construction element,wooden packing material, rack, rail and frame industries.

Profile

Predominantly industrial series production for the wood and furniture trade, no on-site assembly for the customer

Application area

Wood mechanics specialising in furniture making and interior fittings construct tables and chairs from wood, as well as sofa/armchair frames, shelving systems and shops in series production. For interior fittings, they may also produce individual components that are specially tailored to the customer's needs. They work with wood materials, such as sawn timber, veneers and composite panels, as well as synthetic materials and metal components. They sort the sawn timber, which they dry in special chambers. They then cut the timber to the required size, using sawing, planning and milling machines, before adding veneers or synthetic films and staining, spraying or adding a coating to the surfaces. They frequently work with highly automated and computer-controlled machines, which they also maintain. They join the individual parts together using dowels, screws or adhesives. They check the materials and quality/functionality of the finished products. They also package and label products, before preparing them for dispatch or storing them appropriately.

Source: europass Holzmechaniker/-in

UPHOLSTERER

Working area

Upholsterers mainly work in companies engaged in the upholstery industry, some are also employed in the craft trades upholstery sector (interior decoration craft trade) and in mattress production.

Profile

Predominantly industrial series production for the furniture trade

Areas of responsibility

Upholsterers manufacture upholstered furniture and mattresses while observing occupational health and safety regulations, environmental protection requirements as well as functional and economic factors. They make use of widely different materials such as wood and wood-derivative materials, sheet textiles, leather, synthetic leather, plastics and metals. The duties that these skilled workers carry out in addition to their actual upholstery work is equally varied: preparing frames, cutting to size, covering, decorating and assembling. In addition, their responsibility also includes organisational duties for production planning and scheduling as well as restoring upholstered furniture while taking period style and aesthetic factors in consideration.

Vocational skills

Upholsterers work unsupervised on the basis of technical documents. To upholster they use materials such as interior springs as well as foamed plastic and foam rubber. In doing so, they also use traditional techniques, in other words they utilise individually sewn and upholstered springs. They work to quality assurance specifications, and properly assess the end product. As a result of their apprenticeship training, upholsterers are able to assume responsibility for their own field of activity as well as ensure smooth cooperation within the company.

Sources: europass Polsterer/Polsterin and BA 2013, Berufenet

Number of completions (skilled workers and young professionals)

Overall, the number of newly signed articles of apprenticeship has been falling every year since 2005. In 2011, 1,284 fewer articles of apprenticeship were signed than in 2008.

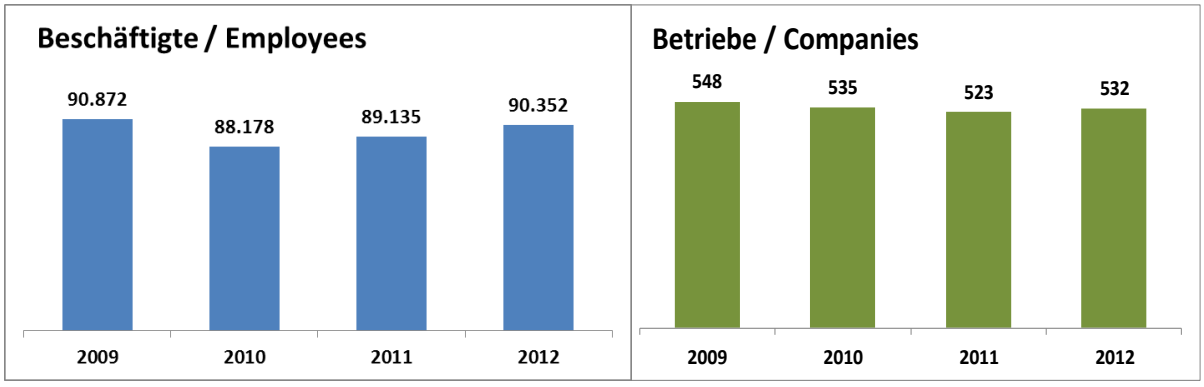
Fig. 2 Newly signed articles of apprenticeship (in the relevant calendar year)

Profession / Year	1995	2005	2008	2009	2010	2011	Change 2011:2008
Cabinet maker	18.540	9.450	9.111	8.532	8.271	8.172	**-939**
Upholsterer	168	114	102	102	102	90	**-12**
Wood mechanic	1.245	1.425	1.095	900	870	762	**-333**

Source: BIBB - Datenblätter

Number of employees and of companies

Furniture industry. After the fall in production and employment caused by the 2010 crisis, the number of employees rose again by 1% in 2011. In 2012, employment more or less returned to its pre-crisis levels of 2009, with 90,352 jobs. In 2013, the figures are expected to settle at about 91,000 employees working in the furniture industry.



2013 = 1. Half-year / Enterprises with more than 50 employees
Source: IG Metal 2013

In 2009, approx. 157,000 people were employed in the **joinery trade**. This is in addition to approx. 50,000 self-employed joiners who do not employ any other workers ("one man" businesses). During the 5-year period of 2005 – 2009, employment in the joinery trade fell slightly by 4.1 %, while the number of apprentices fell more sharply by 8.5%. However, the training rate in 2009 (13.7%) was still more than double that for industry, in which the long-term training rate is only around 4-5%.

Tab. 1 Developments in the joinery trade (2005 – 2009)

Year	Companies	Employees (excluding apprentices)	Apprentices	Rate of apprenticeship
2005	42.516	164.017	23.472	14,3 %
2006	42.564	162.304	23.123	14,3 %
2007	42.322	160.400	23.358	14,6 %
2008	41.943	158.020	22.623	14,3 %
2009 *	41.671	157.344	21.484	13,7 %
Change 2009 : 2005	-899	-6.673	-1.988	
	-2,1 %	- 4,1 %	- 8,5%	

** 2009: preliminary figures*
Source: ProWood Stiftung 2010

B. Acquirement of qualification: Organisation and system of apprenticeship

OVERVIEW: APPRENTICESHIP TRAINING

The system is described as dual because training is conducted in two places of learning: companies and vocational schools. It normally lasts three years (some occupations – e.g. Polsterer- and Dekorationsnäher/-in – only require two years). The trainees are in the average between 16 and 18 years old at the beginning of the education and training. Compulsory full-time education must have been completed by the time of commencing vocational training. There are no further requirements for access to training in the dual system.

Training takes place on the basis of a private-law vocational training contract between a training enterprise and a young person. The apprentice is trained in an enterprise for three to four days a week and in the vocational school for up to two days a week. Enterprises bear the costs of the in-company training and pay the trainee remuneration as regulated by collective agreement which increases with every year of training, and averages about one third of the starting pay for a trained skilled worker.

The professional competences in occupations to be acquired in in-company training are specified in a training regulation and included by the training enterprise in an individual training plan. For the teaching in the vocational school, a framework curriculum, harmonised with the training regulations, is drawn up for every recognised training occupation.

Structural, institutional and legal aspects of the dual system in Germany

Throughout the Federal Republic of Germany, the statutory framework conditions for dual vocational training are uniformly defined in the **Vocational Training Law (BBiG)** and in the Crafts and Trades Regulation Code for the trades sector. The Vocational Training Law includes detailed requirements for vocational apprenticeships. For example, the regulations stipulate that written articles of apprenticeship must be signed, together with the duties assigned to employers providing training and their apprentices, remuneration, the start and end of the apprenticeship period, as well as requirements for companies wishing to recruit and train apprentices, general requirements for examinations and interest representation for apprentices.

Throughout the Federal Republic, state-recognised **training standards** provide a basis for structured and uniform training. These standards define the objectives, content and examination requirements for in-company training and therefore embody the principle of formal equivalence of training qualifications. In addition, they provide a regulatory framework for professions. The central component is the relevant job description or training content, on which the entire content of the vocational training is based. It embodies the principle of working as part of a profession, which requires comprehensive vocational training. According to the same principle, professional, personal and social aspects are also taken into consideration.

As a minimum, the following aspects must be covered by the training standards:

- Description of the apprenticeship,
- Duration of training, which should last no more than three and no less than two years,
- The training content, which refers to the skills, knowledge and abilities acquired by means of the training,
- The training framework plan provides guidelines for the syllabus, timetable and examination requirements.

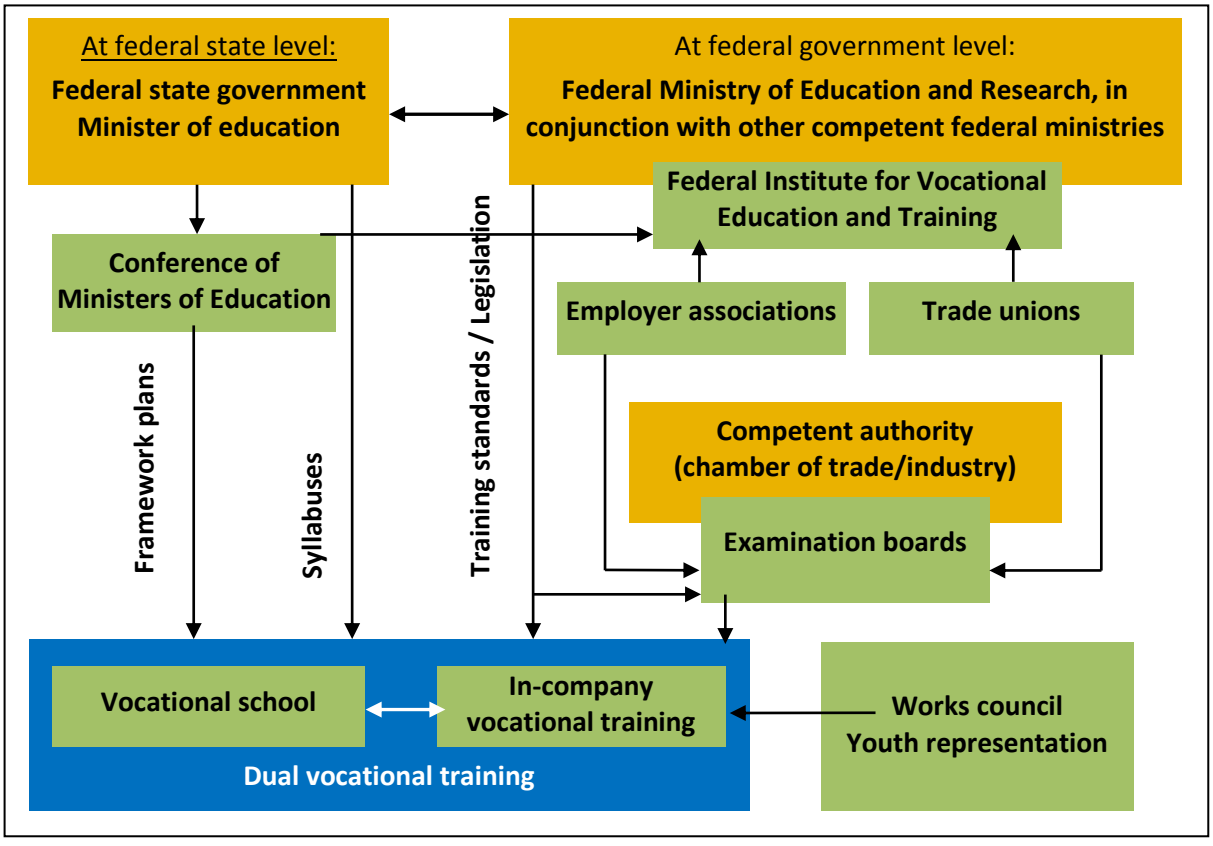
The training standards are mandatory for all persons and organisations involved in the training, including the federal government, federal states, companies and their (employer) associations, as well as the trade unions (representing employees).

However, the BBiG does not cover training at vocational schools, which form part of the dual training system. The school system is essentially government controlled. As part of the federal system in Germany, the federal states are responsible for the vocational school aspects of dual vocational training. Educational legislation in the individual federal states therefore creates the legal framework for school-based aspects of dual training in vocational schools.

Responsibilities within Germany's dual system

As part of the dual system, companies are entitled and required to provide structured and practical vocational training. The federal government, however, provides the legal framework for vocational training, in the form of legislation and regulations. A training sector exists, which operates according to private sector and market rules, alongside a state-imposed right to training, which controls and supports this market. As a result, private sector responsibility, social partnership and the government framework are closely linked. Companies are responsible for providing practical vocational training. As most training and learning takes place in the workplace and during various procedures, companies play a leading role in dual vocational training.

Fig. 3 Institutional framework for dual vocational training



Source: BIBB 2013

The BBiG states that the "competent authority" must supervise the provision of practical vocational training by companies. **Competent authorities are** (for the relevant professions) the **Chamber of Industry and Commerce (IHK) and Chamber of Trades (HwK).** Alongside this supervisory role, the legislation assigns further responsibilities to the chambers of trade/industry. The following list provides an overview of tasks required for dual vocational training.

The competent authorities:

- Supervise vocational training
- Keep a list of apprenticeships, in which the key contents of each apprenticeship must be detailed; for trades, the name given to the equivalent lists is traditionally "register of apprentices"
- Advise persons involved in vocational training on all training issues
- Supervise the suitability of training staff and facilities
- Form examination committees for the certification of interim and final examinations, which are standard across the Federal Republic
- Issue apprenticeship diplomas (for skilled workers/craftsmen), which are valid throughout the federal republic

The competent authorities are required to form a **vocational training committee**. Six voluntary employer and employee representatives (trade unions) sit on the vocational training committee. In addition, it is also attended, in an advisory capacity, by six vocational school teachers. As a joint representative body, the vocational training committee must be informed of all important issues concerning vocational training.

Alongside the vocational training committees formed by the competent authority, a **committee for vocational training** is also formed by the federal government. It is composed of equal numbers of employer representatives, trade unions and federal state authorities. The federal state committee essentially has the task of advising the federal state government on vocational training issues and helping to continuously improve the quality of vocational training.

Participation of trade unions

As well as being represented on the vocational training committee and federal state committee, the trade unions assume further tasks associated with in-company vocational training within the dual system. For example, by virtue of the Works Council Constitution Act (BetrVG), they have extensive co-determination rights in relation to the provision of vocational training. In addition, the trade unions also contribute to curriculum development and coordination.

Youth and apprentice organisations are created, subject to certain conditions, in order to represent the concerns of apprentices. These organisations take responsibility, for example, for ensuring compliance with the applicable legislation, regulations, accident prevention regulations, collective agreements and works agreements.

It must be noted that, mainly due to statutory requirements, the chambers of trade/industry, employer/employee representatives and their umbrella organisations are closely involved in in-company vocational training.

In terms of the responsibilities associated with dual vocational training, the **Federal Institute for Vocational Education and Training (BIBB)** plays a highly significant role. This organisation essentially works within the framework of the education policy of the Federal Republic. The BIBB's responsibilities include:

- Contributing to studies focusing on vocational training, by means of academic research,
- Contributing to the preparation of training standards, the annual report of the Federal Ministry of Education and Research (BMBF) and statistics on vocational training,
- Contributing to international cooperation in the field of vocational training.

The president and main committee form the bodies that make up the BIBB. The main committee consists of equal numbers of representatives of employers, employees (trade unions), the federal states and the federal government (the 'four representative' principle).

How dual vocational training is funded in Germany

In simple terms, dual vocational training is funded, according to the assignment of responsibilities: the companies fund training in the workplace, while the federal states or public sector authorities finance the training provided in schools. Inter-company training is funded by subsidies provided by the federal government, federal states, employee associations or, as in the construction industry, from a fund set aside as part of a collective agreement.

Structural data for dual vocational training in the woodworking professions

At the end of 2011, 18,744 young people were completing vocational training, in order to become joiners, while 261 were being trained as upholsterers and 2,010 young people were training as wood mechanics.

Overall, the number of apprentices has fallen annually over the last few years. Since 2008, the figures have fallen by 3,561 for joiners, by 1,269 for wood mechanics and by 42 for upholsterers. In 2011, the largest proportion of women in the total apprenticeship figures could be seen for upholsterers (19.5%) – while the lowest proportion of women were training to become wood mechanics (8.7%). .

Fig. 4 Male/female apprentices on 31.12.2012

Profession / Year		**1995**	**2005**	**2008**	**2009**	**2010**	**2011**	***Change*** *2011:2008*
Cabinet maker	**Abs.**	42.426	23.472	**22.305**	21.213	19.584	**18.744**	**-3.561**
	Thereof: **Women**	3.231	1.677	**1.902**	1.881	1.785	**1.719**	**-183**
	Share Women *in %*	*7,6*	*7,1*	***8,5***	*8,7*	*9,1*	***9,2***	***+0,7***
Upholsterer	**Abs.**	438	330	**303**	291	270	**261**	**-42**
	Thereof: **Women**	66	42	**51**	54	51	**51**	**0**
	Share Women *in %*	*15,1*	*12,7*	***16,8***	*18,6*	*18.9*	***19,5***	***+2,7***
Wood mechanic	**Abs.**	3.087	3.744	**3.279**	2.883	2.424	**2.010**	**-1.269**
	Thereof: **Women**	270	171	**225**	219	207	**174**	**-51**
	Share Women *in %*	*8,8*	*4,6*	***6,9***	*7,6*	*8,5*	***8,7***	***-1,8***

Sources: BIBB – Datenblätter: 501007 Tischler/-in; 4920 Polsterer-/in; 5050 Holzmechaniker/-in

Vocational qualifications

In 2011, the number of apprentices successfully completing their training increased significantly in all three professions compared to the previous year. 96.7% of apprentice upholsters completed their training, followed by joiners (85.6%). Only three out of four apprentice wood mechanics successfully completed their training (71.4 %).

Fig. 5 Success rate for final examinations
(apprentices successfully completing their training in the relevant calendar year)

Profession / Year		1995	2005	2008	2009	2010	2011
Cabinet maker	**Abs.**	**13.101**	**7.923**	**6.795**	**6.783**	**6.831**	**6.366**
	Quota (in %)	*79,1*	*76.8*	*84,8*	*85,0*	*84,5*	*85,6*
Upholsterer	**Abs.**	**117**	**111**	**81**	**99**	**93**	**87**
	Quota (in %)	*83,0*	*88,1*	*96,4*	*94,3*	*91,2*	*96,7*
Wood mechanic	**Abs.**	**930**	**942**	**1.077**	**942**	**900**	**816**
	Quota (in %)	*88,1*	*74,4*	*81,2*	*71,7*	*65.2*	*71,4*

Quelle: BIBB - Datenblätter

Apprentices failing to complete training (drop outs)

According to the raw figures, an increased number of apprentice joiners and wood mechanics abandoned their training in 2011, while the figure fell slightly for upholsterers. At the same time, it should be noted that, despite an annual fall in the number of apprenticeships, the number of apprentices failing to complete their training increased further during the period 2009 - 2011.

Fig. 6 Apprentices failing to complete training (in the relevant calendar year)

Profession / Year		1995	2005	2008	2009	2010	2011
Cabinet maker	**Abs.**	**3.603**	**2.205**	**2.325**	**2.271**	**2.283**	**2.391**
	Quote (in %)	*20,0*	*21,3*	*23,1*	*23,7*	*25,2*	*27,0*
Upholsterer	**Abs.**	**45**	**27**	**15**	**21**	**24**	**21**
	Quote (in %)	*25,3*	*21,3*	*14,3*	*19,2*	*22,4*	*19,9*
Wood mechanic	**Abs.**	**252**	**321**	**348**	**285**	**288**	**309**
	Quote (in %)	*19,9*	*22,0*	*26,4*	*25,2*	*29,6*	*35,2*

Source: BIBB – Datenblätter

Access to vocational training

There is no statutory right to access these three apprenticeships. In practice, future apprentices are expected to have completed secondary school (for 9 – 10 years). As a rule, they are required to obtain a secondary school leaver's certificate, in order to be awarded an apprenticeship (equivalent to ISCED Level 2).

B. **Acquirement of qualification:** Organisation and system of apprenticeship

According to the official statistics for vocational training, apprentices that commenced their training in 2011 held the following school qualifications:

Fig. 7 School qualifications held by apprentices (commencing training in 2011)

Profession / Training certificate		***Without school leaving*** *qualifications (secondary technical school)*	**With school leaving** qualifications (secondary technical school)	***With qualifications*** *(secondary modern school)*	***With further education/ technical college qualifications***	*Other*	**TOTAL**
Cabinet maker	**Abs.**	**234**	**3.897**	**3.039**	**981**	**21**	**8.172**
	Share (in %)	*2,9*	*47,7*	*37,2*	*12,0*	*0,2*	*100,0*
Upholsterer	**Abs.**	**0**	**60**	**24**	**6**	**0**	**90**
	Share (in %)	*0,0*	*66,7*	*26,7*	*6,6*	*0,0*	*100,0*
Wood mechanic	**Abs.**	**45**	**378**	**300**	**36**	**3**	**762**
	Share (in %)	*5,9*	*49,6*	*39,4*	*4,7*	*0,4*	*100,0*

Source: BIBB – Datenblätter

The majority of general education qualifications held by apprentices commencing vocational training are “secondary technical school” (intermediate leaving certificate) and “secondary modern school” (intermediate leaving certificate) certificates. In 2011, these qualifications were held by approx. 85% of joiners, approx. 93% of upholsterers and 89% of wood mechanics commencing training.

Fig. 8 Age of apprentices (commencing training in 2011)

Profession / Age	**To 16** years	**17 + 18** years	**19 - 21** years	**22 + 23** years	**24 years and older**	*Average of age*
Cabinet maker	**921**	**3.402**	**2.352**	**708**	**789**	*19,8*
Upholsterer	**15**	**30**	**30**	**12**	**6**	*19,4*
Wood mechanic	**108**	**336**	**204**	**60**	**54**	*19,3*

Source: BIBB – Datenblätter

The majority of young people commencing training were aged 18 or younger. The next largest group consisted of apprentices aged 19-21. Due to the longer training periods, the age when apprentices commence training also increases.

According to the Youth Employment Protection Act §§ 5-7 of the Federal Republic of Germany, the minimum age for employment or an apprenticeship in a company is fundamentally 15 years of age. Furthermore, it is fundamentally forbidden for young apprentices to work more than 40 hours a week and more than 8 hours a day between 6 a.m. and 8 p.m. As a rule, they are not allowed to work on Saturdays or Sundays. No upward age limit exists regulating the age at which it is possible to begin an apprenticeship.

Training allowances

Apprentices receive a training allowance, which is adjusted according to number of years devoted to training.

Fig. 9: Training allowance 2011 according to profession and wage weighting zone

Average amounts in € per month in the individual training years and the average over the entire duration of training

West Germany	In EURO			
Apprenticeship year	1.	2.	3.	Average 1.-4.
Cabinet makers	465,00	579,00	666,00	570,00
Upholsterers	614,00	655,00	709,00	659,00
Wood mechanic	691,00	738,00	801,00	743,00
East Germany	In EURO			
Cabinet makers	n/a	n/a	n/a	
Upholsterers	n/a	n/a	n/a	
Wood mechanic	572,00	614,00	671,00	619,00

Source: BIBB data bank, Training pay 2012

Classification of apprenticeship in the National Qualification Framework (NQF) [1]

NQFs play a key role in linking national qualifications systems to the EQF reference levels and descriptors. The following objectives are presented by almost all countries, irrespective of the stage of NQF development.

NQFs aim to:

(a) make national qualifications systems easier to understand and overview, both nationally and internationally;
(b) strengthen coherence of qualifications systems by connecting different parts of education and training and making it easier to understand;
(c) improving permeability of education and training by clarifying and strengthening the horizontal and vertical links within existing systems;
(d) support lifelong learning by making learning pathways visible and by aiding access, participation and progression;
(e) aid recognition of a broader range of learning outcomes (including those acquired through non-formal and informal learning);
(f) strengthen the link and improve the communication between education and training and the labour market;
(g) open up national qualification systems to qualifications awarded outside formal education and training (for example awarded by sectors);
(h) create a platform for cooperation and dialogue with a broad range of stakeholders;
(i) provide a reference point for quality assurance.

[1] *CEDEFOP, The development of national qualifications frameworks in Europe, (August 2010), Germany*

NQF in Germany

A comprehensive national qualifications framework for lifelong learning based on learning outcomes (*Deutscher Qualifikationsrahmen,* DQR) is being developed in Germany. It will include qualifications obtained in general education, higher education and vocational education and training. In the first phase, only full formal qualifications are referenced to the DQR. In a later phase, informally and non-formally acquired competences will also be included.

The main policy objectives

The DQR responds to the EQF initiative. An important objective of it is to allow for a transparent referencing of qualifications acquired in Germany to the EQF and to use it as tool to improve opportunities for German citizen in the European labour market. Another important objective is to map all obtainable qualifications, present them in relation to each other, and make them easily understood and comparable. These two main objectives have been translated into the following detailed aims.

The DQR is expected to:

a) increase transparency in the German qualification system;
b) promote reliability, transfer opportunities and quality assurance;
c) improve the visibility of the equivalence and differences between qualifications;
d) aid recognition of German qualifications elsewhere in Europe;
e) support the mobility of learners and employees between Germany and other European countries and within Germany;
f) increase the skills orientation of qualifications;
g) reinforce the learning outcomes orientation of qualification processes;
h) improve opportunities for validation and recognition of non-formal and informal learning;
i) foster and enhance access and participation in lifelong learning.

Levels and descriptors

An eight-level structure cover all main types of German qualifications. Level descriptors describe competences required to obtain a qualification. The DQR differentiates between two categories of competence: professional and personal.

The term competence lies at the heart of the DQR and signals readiness to use knowledge, skills and personal, social and methodological competences in work or study situations and for occupational and personal development. Competence is understood in this sense as action skills.

Abb. 10 The Four-Pillar-Structure of the DQR

Level indicator			
Structure of requirements			
Professional competence		**Personal competence**	
Knowledge	**Skills**	**Social competence**	**Self-competence**
Depth and breadth	Instrumental and systemic skills, judgment	Team/leadership skills, involvement and communication	Autonomy/responsibility, reflectiveness and learning ompetence

Use of learning outcomes

The shift to learning outcomes is supported by all major stakeholders. One important aim of the DQR is to support further use of learning outcomes in standardsetting, curricula and assessment. Learning outcomes are expressed in the various formulations of standards of *Kompetenz* that have been developed in particular for VET, where a concept of *Handlungskompetenz* (action skills) has gradually assumed a key role in qualifications definition, alongside clear input requirements about place, duration and content of learning. The action skills are described in terms of a typology of competences: *Fachkompetenz* (professional competence), *Personalkompetenz* (personal) and *Sozialkompetenz* (social).

Position of the trade unions: the key objective is to have decision-making powers

In the context of the development of the DQR, the trade unions have pushed for a definition of competence, which includes vocational, personal and social dimensions. This definition focused on professional competence and personal development, including planning and decision-making powers.

It is based on the following points of reference: uniform work tasks, requirements in the workplace, in terms of long-term usefulness of qualifications, development of individual skills, involvement in industrial and social welfare processes and reflexive decision-making. Reflexivity refers to the conscious, critical and responsible assessment and evaluation of actions, based on experience and knowledge. It aims to enable individually and socially responsible actions and developments in the world, in which we live and work.

Classification of dual vocational training in the DQR

Initial vocational training qualifications are assigned to Levels 3 and 4 in the DQR matrix, while qualifications awarded for 2-year apprenticeships are assigned to Level 3 and the 3-year and 3.5-year apprenticeships are assigned to Level 4.

Level 4			
Be in possession of competences for the autonomous planning and processing of technical tasks assigned within a comprehensive field of study or field of occupational activity subject to change			
Professional competence		**Personal competence**	
Knowledge	**Skills**	**Social competence**	**Autonomy**
Be in possession of deeper general knowledge or theoretical professional knowledge within a field of study or field of occupational activity.	Be in possession of a broad spectrum of cognitive and practical skills which facilitate autonomous preparation of tasks and problem solving and the evaluation of work results and processes according consideration to alternative courses of action and reciprocal effects with neighboring areas. Provide transfers of methods and solutions.	Help shape the work within a group and the learning of working environment of such a group and offer ongoing support. Justify processes and results. Provide comprehensive communication on facts and circumstances.	Set own learning and work objectives, reflect on and assess such objectives and take responsibility for them.

Source: The German Qualifications Framework for Lifelong Learning adopted by the "German Qualifications Framework Working Group" (AK DQR) Status: 22 March 2011

The assignment of dual vocational training qualifications to the (German) Level 4 is currently seen as temporary and has not yet been finalised. In particular, the failure to take **informally and non-formally acquired skills** into consideration is viewed very critically by the vocational training policymakers and trade unions.

In accordance, this classification of purely formal qualifications fails to cover or recognise too many competences. Many key qualifications are therefore represented in the assessment procedure. For this reason, the leading representatives from the world of politics, training sector, economic sector and trade unions have agreed upon an evaluation procedure.

Joint Agreement of 31.1.2012

"The representatives of the Federal Government, Conference of Ministers of Education, Conference of Ministers of the Economy, social partners and business organisations will rapidly continue with the DQR process and agree to proceed further with the following points:
1. For initial vocational training, initial classification as Level 3 (2-year apprenticeships) and Level 4 (3-year and 3 ½-year apprenticeships). (...)

3. After a period of five years, with reference to the competence-oriented training standards of the initial vocational training and competence-oriented training standards for the general education qualifications, all classifications will be reviewed and joint decisions will be made, based on the equality of general and vocational education. At the same time, further development should also be taken into consideration at European level and reclassification should be considered. (...)"

Source: Deutscher Qualifikationsrahmen für lebenslanges Lernen, adopted by the Arbeitskreis Deutscher Qualifikationsrahmen (AK DQR) on 22 March 2011

Another central theme included in the vocational training policy discussion relating to the DQR is the **lack of permeability in the German education system.**

In Germany, a clear separation exists between general and vocational education. This separation is considered a structural feature of the German education system and has a negative effect – in terms of dual vocational education – on permeability. Vocational training policy-makers and trade unions look critically on the fact that dual vocational training is insufficiently unconnected or even completely removed from general education. This applies particularly to transition between or changes to other levels within the education system. On the whole, the lack of continuity between dual vocational training and further training or study represents a serious shortcoming. There is no means of continuing with general education, which would enable students to continue their studies at university level. In addition, at further education stage, only few vocational training courses generally follow on from initial training and interim employment.

Any permeability or intermeshing between dual vocational training, further education and studies is therefore of a limited nature. Improvements and reforms are still needed, in order to achieve the goal of equal status for general education and vocational training.

C. **Placement of qualification:** VET-institutions, learning models and learning places

Places of learning and teaching staff in the dual system in Germany [2]

As a characteristic feature of the dual training system, the company and vocational school are both considered places of learning. They embody the underlying principle of the dual training system, according to which work and learning are inter-linked at the alternating places of learning.

Enterprises as place of Learning

Training places are offered in both private and public enterprises. Enterprises enter into a contract with trainees, in which they undertake to provide them with the professional competences in the occupation provided for in the training regulation for the relevant training occupation.
The binding requirements of the training regulations guarantee a uniform national standard which corresponds to the requirements in the relevant occupation. Training may take place only in training enterprises in which the skills required by the training regulation can be imparted by training personnel who are appropriate both personally and in terms of specialised knowledge. The suitability of training enterprises and in-company training personnel is monitored by the relevant autonomous industrial bodies (Chambers). Proper provision of the training itself is also monitored by the Chambers.
The training enterprise draws up an in-company training plan for trainees, which must correspond to the training regulation in terms of its practical and time structure, but may deviate from it if particular features of company practice require it.
Small and medium-sized enterprises are often unable to provide all the learning content: they may lack suitable training personnel, or, owing to their particular specialisation, they do not cover all the training content themselves. If it is not possible for all the necessary knowledge and skills to be provided in full, the missing content can be provided or supplemented by training measures outside the place of training, for example via cooperation with other enterprises, inter-company vocational training centres (überbetriebliche Berufsbildungsstätten - ÜBS) or coherent training structures (Ausbildungsverbünde).

Qualified trainers (instructors)

Under the statutory provisions of the Vocational Education and Training Act (Sections 28-30 BBiG) and the Regulation on Craft Trades (Section 21 HwO), trainers must be suitable both personally and in terms of specialised knowledge to train young people. Subject aptitude involves, in particular, the specialised vocational skills and knowledge required for the relevant occupation. As a rule, trainers must have a qualification in a subject area appropriate to the training occupation.
The knowledge, skills and abilities to provide vocational and industrial training must be certified – normally by taking an examination - according to the Ordinance on Trainer Aptitude (Ausbilder-Eignungsverordnung, AEVO). In the reformed version of the AEVO dating from 2009, the requirements concerning the aptitude of instructors for vocational and industrial education are described in terms of four fields of activity: "checking the prerequisites for and planning initial vocational training", "preparing initial vocational training and assisting with trainee recruitment", "delivering initial vocational training" and "bringing the apprenticeship to a conclusion".
According to the Vocational Education and Training Act, the competent bodies (chambers) are responsible for ensuring that instructors have the necessary personal and technical qualifications and that training premises are suitable. If these conditions are not satisfied, the competent bodies must intervene. They are required to take steps to remedy shortcomings in initial vocational training, to the extent of prohibiting companies, if need be, from recruiting apprentices or engaging in training.

[2] *CEDEFOP, VET in Europe – Country Report, 2011 (Germany)*

Vocational school as place of learning

In the dual system, the vocational school is an autonomous place of learning. Its task is to provide basic and specialised vocational training and to extend previously acquired general education. Vocational schools must provide at least 12 hours' teaching a week, normally eight hours for vocational subjects and four hours to general subjects such as German, social studies/business studies, religious education and sport.
Appropriate account is also to be taken of foreign language teaching, depending on its importance to the training occupation concerned. Vocational schools decide on how to allocate teaching in consultation with training enterprises, the schools inspectorate and the competent industrial bodies. The aim of the various organisational forms is to ensure that trainees spend as much time in the enterprise as possible while, at the same time, allocating teaching in a way that is tenable in terms of both pedagogy and the psychology of learning.

Curricula within the dual System in Germany

Two difficult curricula exist at the two different places of learning within the dual vocational training system. On the one hand, the relevant training standards regulate in-company aspects of vocational training. The technical theory taught at vocational schools is based on standard federal framework syllabuses, which are in line with the training standards.

It is essential for curriculum development and dual vocational training as whole that the training is based on a "vocational concept". The BBiG states that a vocational training course "must teach the professional skills and knowledge (vocational competence) necessary for the conduct of trained professional activities in the changing world of work, as part of a structured training course" and must also make it possible to "obtain the necessary professional experience" (Paragraph 1 Paragraph 3 BBiG). Essentially, the curricula must therefore be in line with the focus and requirements of the vocational concepts.

Since the mid-1990s, the vocational school framework syllabuses in Germany have been developed according to the "learning field concept".

The learning fields serve to define:

- Set objectives (qualifications and skills expected to have been acquired, within a learning field, by the end of the learning process in school),
- Content (educationally valid technical content, which defines the minimum standards required, in order to meet the learning objective) and
- Learning time guidelines (generally between 40 - 80 teaching hours) (BIBB 2003, p.24).

The learning field concept is based on interrelated sets of tasks based on professional and life/socially relevant action situations. Learning fields are curriculum units, which are based on work tasks/procedures and aim to teach professional decision-making skills. It is no longer individual and separate subjects, but the professional work practices that are taught via the cross-curricular learning fields, which provide an organisational framework for vocational training. It is believed that profession-specific learning content can, in this way, be taught in a practical way and can immediately be used effectively in a professional context.

Examination

The primary aim of training is to enable young people to acquire comprehensive vocational competence designed to make them capable of fulfilling their duties as employees efficiently, effectively and innovatively, autonomously, and in cooperation with others.
Vocational competence is based on subject-based, social and methodological competences. The capacity to practise an occupation in a qualified fashion includes, in particular, autonomous planning, implementation and control. This bundle of competences must be demonstrated in examinations regulated by law (Vocational Education and Training Act).
Final training examinations are geared to vocational practice, i.e. to the work requirements and processes of the occupation. As a rule, a final examination covers four or five fields typical of the occupation. Performance in general subjects, such as languages and mathematics, is evaluated within the framework of school reports. Various methods are used in examinations depending on the occupation and duration may vary especially in practical examination tasks. For written tasks, a period of two hours is usually allocated for the examination, and oral examinations usually last 30 minutes.
Enterprises and vocational schools conduct training, but the Chambers (Competent Bodies) are responsible for holding examinations. To this end, the Chambers have to set up examination committees for each occupation which comprise at least three members (one representative each of employers and employees and a vocational schoolteacher). The examination certificate is issued by the Chamber. The structure of examinations is laid down by individual training regulations which are applicable nationwide and specify a uniform standard.

On the job training

In Germany, “on-the-job-training” without recognised vocational qualifications is practically of no significance. Decisions made by companies concerning the appointment/recruitment of staff, together with the pay structure governed by collective agreements, are mainly based on formal qualifications. Employers see the relevant vocational qualifications, such as references and certificates, as direct evidence of any qualifications and existing know-how. If nothing else, this leads to employees and employers attaching relatively great importance to formal qualifications when it comes to professional development. Germany is also seen as a “qualification-oriented country”, in which employers use qualifications to organise the workplace and allocate workers. Employees can use their vocational qualifications to move between different companies, without this causing their professional qualifications to become less valuable.

The vocational concept as a structural component of the training and employment system

Essentially, the German job market is organised according to professions. In other words, it is structured according to different lines of work, in order to ensure transparency. “Professions” are used to describe the national labour potential. They are used as key categories when skilled workers/employees apply or are recruited for jobs. They also provide a framework for pay scale grouping. When different countries are compared, the fact that the German job market is structured according to the vocational concept is a special characteristic. The modern dual vocational training system in Germany was ‘born’ at the start of the 20th century. With the advent of industrialisation, the manufacturing companies adopted the concept of training for skilled workers, which they adapted to their own needs. In order to ensure that they had the necessary industrial skilled workers, they produced a mandatory catalogue of the relevant skills, knowledge and duration of training. In this way, uniform training standards were defined step-by-step, which led to the current qualifications for skilled workers. This step was not taken in other industrialised nations, even though the latter might have a history of providing training for skilled workers.

The learning processes that form part of the dual system therefore do not focus on a single workplace but, in line with the vocational concept, on a wide range of related activities. The wide-ranging nature of the training and current linking of theoretical and practical learning ensure that the resulting qualifications are complex and uniform.

The training standards and framework syllabus essentially summarise the minimum requirements for dual training. According to BIBB, they describe standards for the currently required skills, knowledge and abilities for qualified and skilled workers. At the same time, the training contents must be respected as minimum standards. The regulations included in the practical training standards allow companies providing training scope to include additional, missing or new developments in the training. As a result, the company is at liberty to add other topics, in addition to the minimum standards, and provide apprentices, for example, with opportunities to obtain additional qualifications.

C. **Profile of qualification:** Professional skills and key qualifications

Dual vocational training represents a qualification model at lower secondary education level. Compared to other countries, it enables students to achieve ISCED Level 3 B. This classification applies for all three of the apprenticeships described in this study.

Occupational qualifications and competences at a glance
(Cabinet maker, Wood mechanic, Upholsterer)

	Skills	Knowledge	Competences
Cabinet makers Wood mechanics	• Arrangement (Gestaltung) • Construction (Konstruktion) • Planning (Planung) • Assembly (Fertigung) • Service (Service) • Fitting (Montage) • Controlling	• Work with machines • Work with tools • Safety at work • Environment protection • Economic behaviour • Commodity	• Social • Communication • Technical • Self responsibility
upholsterers	• Arrangement • Construction • Planning • Assembly • Fitting • Decorate • Controlling	• Work with machines • Work with tools • Safety at work • Environment protection • Economic behaviour • Commodity • Production based on computer work	• Social • Communication • Technical • Self responsibility

Qualifications obtained in the workplace

The educational principles of the training framework plans for apprentices emphasise, above all, the reinforcement of action orientation in young people and independent planning, conduct and evaluation of work tasks in the course of their professional activities.

CABINET MAKER

OCCUPATIONAL ABILITIES	ACQUIRED QUALIFICATIONS
Cabinet makers are able to develop their own ideas to design, draw and build products taking into consideration design and functional criteria and, when necessary, discuss job order issues with clients. They work unsupervised from technical documentation and as instructed. The also take economic factors into consideration. Finally, they assess finished work and implement measures to guarantee quality.	Cabinet makers: • Make furniture, structural elements and products to complete building interiors; they build extensions and construct drywall structures • Process wood, wood derivatives and other materials as well as semi-finished products • Use tools; they setup, operate and maintain devices, machines, systems and equipment • Design and build products • Manufacture components and build them together to make products • Treat and finish surfaces • Carry out wood preservation measures • Carry out assembly and deconstruction work • Maintain products • Carry out service work • Plan and document their work, record quantities and times required, calculate work completed • Use information and communication systems for their work • Take measures to guarantee health and safety at work as well as environmental protection at their place of work • Setup, safeguard and subsequently clear up places of work • Carry out their work without supervision, efficiently bearing customer requirements in mind on the basis of job orders or plans, alone or as part of a team • Implement quality assurance measures..

Source: Federal Employment Agency 2013, Berufenet and BIBB, europass 2013

Training framework plan for vocational training for cabinet maker (joiners)

No.	The following skills, knowledge and abilities represent the minimum vocational training objective:	Learning time guidelines in weeks	
		Month 1 - 18	Month 19 - 36
1	Vocational training, labour and collective bargaining law,	*On-going*	*On-going*
2	Structure and organisation of the company providing training,	*On-going*	*On-going*
3	Health and safety in the workplace	*On-going*	*On-going*
4	Environment protection,	*On-going*	*On-going*
5	Using information and communication systems,	**3**	**3**
6	Preparation and layout of references,	**5**	**4**
7	Planning and preparing work procedures, teamwork	**4**	**3**

(Training framework plan for vocational training cabinet maker (joiners)

8	Setting up, safeguarding and tidying workplaces,	4	2
9	Handling and processing wood, wood-based and other materials, as well as semi-finished products,	13	5
10	Setting up, using and maintaining tools, equipment, machinery, systems and devices,	7	8
11	Preparing and assembling parts to create products,	28	16
12	Treating and finishing surfaces,	4	6
13	Conducting wood protection measures,		3
14	Conducting assembly and dismantling tasks,		14
15	Maintaining products,	2	4
16	Customer orientation and providing services,	3	5
17	Conducting quality assurance measures.	5	5
Total number of weeks		**78**	**78**

Federal Law Gazette 2006 Part I No. 5, issued in Bonn on 30 January 2006

UPHOLSTERER

OCCUPATIONAL ABILITIES

Upholsterers work unsupervised on the basis of technical documents. To upholster they use materials such as interior springs as well as foamed plastic and foam rubber. In doing so, they also use traditional techniques, in other words they utilise individually sewn and upholstered springs. They work to quality assurance specifications, and properly assess the end product. As a result of their apprenticeship training, upholsterers are able to assume responsibility for their own field of activity as well as ensure smooth cooperation within the company..

ACQUIRED QUALIFICATIONS

- They select and process textiles, materials and auxiliary materials, leather, synthetic leather, wood and wood derivatives, plastics and metals for the intended purpose while taking economic criteria into consideration
- They draw up documentation and production schedules as well as capture technical data regarding work processes and work results
- They apply mordant solutions as well as colouring and coating materials to finish surfaces
- The setup, operate and monitor as well as maintain machines and systems
- They are able to work with operational data acquisition and evaluation systems as well as electronically controlled units, machines and systems
- They prepare the upholstery base by producing and fitting load-bearing and elastic elements
- They mount box springs, insert interior springs and fit covers to springs
- They develop cutting templates and patterns while making effective use of the upholstery material
- They manufacture upholstery and mattresses by making use of different upholstery techniques
- They make use of a variety techniques to cover, divide and arrange upholstered products
- They carry out decorative work as well as assemble semi-finished elements
- They assess quality and initiate quality assurance measures.

Source: Federal Employment Agency 2013, Berufenet and BIBB, europass 2013

Training framework plan for vocational training for upholsterers

No.	The following skills, knowledge and abilities represent the minimum vocational training objective:	Learning time guidelines in weeks / according to year of training		
		Year 1	Year 2	Year 3
1	Vocational training	*On-going*	*On-going*	*On-going*
2	Structure and organisation of the company providing training,	*On-going*	*On-going*	*On-going*
3	Labour and collective bargaining law, industrial safety	*On-going*	*On-going*	*On-going*
4	Health and safety, environment protection and rational energy use	*On-going*	*On-going*	*On-going*
5	Planning and preparing work procedures	**4**	**5**	
6	Reading and preparing technical documents	**5**		
7	Selecting work and other materials	**10**		
8	Handling and processing work and other materials	**13**		
9	Treating and finishing surfaces	**4**		
10	Setting up and using machines and systems	**4**	**4**	**8**
11	Care and maintenance of machines and tools	**12**	**3**	**3**
12	Preparing the upholstery base cloth		**2**	**8**
13	Cutting		**7**	
14	Upholstery		**8**	**8**
15	Covering		**16**	**10**
16	Decorating and assembly		**4**	
17	Basic computer-assisted production		**4**	**6**
18	Quality assurance		**4**	**4**
Total number of weeks		**52**	**52**	**52**

Federal Law Gazette 1997 Part I No. 10, issued in Bonn on 25 February 1997

WOOD MECHANIC

OCCUPATIONAL ABILITIES

Wood mechanics working in the furniture and interior decoration sectors produce batches of wooden tables, chairs, frames for sofas and armchairs, shelving systems and shop fittings. For interior fittings, they sometimes produce individual items, which are specially adapted to the customer's requirements. At the same time, they process wood materials, such as trimmed timbers, veneers and composite panels, as well as synthetic materials and metal parts. They sort the trimmed timbers and dry them in special chambers. They then cut the timber to the required size, using sawing, planning and milling machines, before adding veneers or synthetic films and staining, spraying or adding a coating to the surfaces. They frequently work with highly automated and computer-controlled machines, which they also maintain. They join the individual parts together using dowels, screws or adhesives. They check the materials and quality/functionality of the finished products. They then package and label the products, before preparing them for dispatch and storing them appropriately.

ACQUIRED QUALIFICATIONS

- Produce furniture, interior fittings, construction elements, wooden packing materials or frames
- Process and finish wood, timber products and other materials
- Monitor and control production processes
- Plan and document work
- Set up, secure and clear workplaces
- Set up, operate and maintain tools, devices, machines and technical equipment
- Process, evaluate, prepare and document data
- Carry out measurements, produce and use templates and gauges
- Treat surfaces
- Pack and store products
- Record materials and time used and invoice for services provided
- Initiate safety, health and safety at work and environmental protection measures in the workplace
- Adopt an autonomous and customer and business oriented approach to the execution of works on the basis of work orders or plans working both alone and as part of a team
- Carry out quality assurance measures..

Source: Federal Employment Agency 2013, Berufenet and BIBB, europass 2013

Training framework plan for vocational training for wood mechanics

No.	The following skills, knowledge and abilities represent the minimum vocational training objective:	Learning time guidelines in weeks	
		Month 1 - 18	Month 19 - 36
I.	**Common skills, knowledge and abilities**		
1	Vocational training, labour and collective bargaining law	*On-going*	*On-going*
2	Structure and organisation of the company providing training	*On-going*	*On-going*
3	Health and safety in the workplace	*On-going*	*On-going*
4	Environment protection	*On-going*	*On-going*
5	Using information and communication systems	**5**	
6	Planning and preparing work procedures, teamwork	**6**	**2**
7	Setting up and safeguarding workplaces	**3**	

(Training framework plan for wood mechanics)

8	Setting up, using and maintaining tools, equipment, machines and technical devices	12	11
9	Conducting measurements, preparation and use of templates and gauges	7	
10	Handling and processing of wood, wood-based and other materials	24	
11	Supervising and controlling production processes		6
12	Production, pre-assembly and assembly of parts	12	
13	Treating surfaces	6	
14	Packaging and storing of products		3
15	Quality management, customer orientation	3	4
II. Specialist skills, knowledge and abilities A) Furniture and interior fittings			
1.	Creating surfaces		14
2.	Producing furniture and interior fittings		34
3.	Testing products		4
Total number of weeks		**78**	**78**

Federal Law Gazette 2006 Part I No. 5, issued in Bonn on 30 January 2006

Qualifications obtained at vocational schools

The objective of learning in a vocational college is to convey social competence, vocational expertise and occupational skills. Points of orientation for this approach to training are:

- didactic points of reference that are important when exercising one's occupation (learning for doing).
- actions, carried out one's self or intellectually understood, form the starting point for learning (learning by doing)
- actions should promote a holistic understanding of occupational reality, for example, take into consideration technical, economic, safety, legal, ecological and social aspects.
- actions should, as far as possible, be planned, carried out, examined and, if necessary, corrected and ultimately assessed by the students themselves.
- actions must be integrated into the experiences of the students and, with regard to their social effects, reflect these.
- actions should also take social processes into consideration, for example, declaring interests or managing conflicts as well as different perspectives with regard to planning and making career and lifestyle choices.

The concrete professional and company-specific tasks provide the starting point for learning at the vocational school. The objectives listed for the learning fields are described as tasks, which must be planned, completed and evaluated by the apprentices, individually or as part of a team, by means of comprehensive work and business processes that take the form of actual and concrete profession-specific work tasks.

Within the learning fields, mathematical, technical-communicative and scientific contents are taught using an integrative approach, together with foreign language terms. The industrial health & safety and environment protection requirements that correspond to the learning contents are also taken into consideration. Teaching within the learning field aims to enable apprentices to use new technologies and equipment to plan/implement work procedures and evaluate work outcomes.

Areas of learning for CABINET MAKER
according to apprenticeship year, topics and hours of lessons

(a one hour lesson lasts 45 minutes)

No.	TOPICS	1. Year	2. Year	3. Year
1	Manufacture simple wood products	80		
2	Manufacture products made of wood and wood derivatives for assembly	80		
3	Manufacture products from a variety of materials	80		
4	Manufacture small items of furniture	80		
5	Manufacture individual items of furniture		80	
6	Manufacture system furniture		60	
7	Manufacture and assemble fitted furniture		60	
8	Manufacture and install room dividing elements for interior finishing			60
9	Manufacture and install prefabricated elements for interior finishing			100
10	Manufacture and install prefabricated elements to line the body of the building			100
11	Maintain and keep products in good repair			40
12	Carry out a job order in the area of responsibility			80
Total: 880 hours of lessons		**320**	**280**	**280**

FRAMEWORK TRAINING PLAN for the skilled profession of joiner (Decision of the Conference of Education Ministers of 13.01.2006)

Areas of learning for UPHOLSTERER

according to apprenticeship year, topics and hours of lessons

(a one hour lesson lasts 45 minutes)

No.	TOPICS	1. Year	2. Year	3. Year
1	Materials	80		
2	Work procedure	80		
3	Design	160		
4	Textile materials		40	
5	Materials for building the frame		20	
6	Upholstery materials		40	30
7	Materials for covering furniture		40	40
8	Upholstery technology		40	50
9	Frame construction			20
10	Manufacturing mattresses			40
11	Tools, machines and systems		20	20
12	Basic principles of technical communication		20	
13	Basic construction		20	
14	Drawing orthographic projections		20	20
15	Sectional views		20	20
16	Beltings			10
17	Computer aided drawing and manufacture			30
Total: 880 hours of lessons		**320**	**280**	**280**

FRAMEWORK TRAINING PLAN for the skilled profession of upholsterer (Decision of the Conference of Education Ministers of 21.11.1996)

Areas of learning for WOOD MECHANIC

according to apprenticeship year, topics and hours of lessons

(a one hour lesson lasts 45 minutes)

No.	TOPICS	Year 1	Year 2	Year 3
1	Creating simple products from wood	80		
2	Create products from wood and wood-based materials	80		
3	Create products using various materials	80		
4	Create small items of furniture	80		
5	Create individual items of furniture		80	
6	Create modular furniture		60	
7	Create and install fitted furniture		60	
8	Create and assemble space-defining interior fittings		80	
9	Applying coatings to wood and wood-based materials			80
10	Producing construction elements for interior fittings to order			80
11	Making windows and external doors			80
12	Preparing packaging materials			40
Total: 880 teaching hours		**320**	**280**	**280**

FRAMEWORK TRAINING PLAN for the skilled profession of wood mechanic (Decision of the Conference of Education Ministers of 13.01.2006)

Further training opportunities after completing a cabinet maker apprenticeship

Occupation requiring further training	Duration in months	Type of further training	Legal basis
Master cabinet maker	4–24	Full time / part time	Craft Trades Code
Specialist site manager for carpentry trades	2–8	Full time / part time / home-study course	Craft Trades Code
Production scheduler for carpentry trades	2–5	Full time / part time	Craft Trades Code
Customer consultant for carpentry trades	2–8	Full time / part time / home-study course	Craft Trades Code
Master upholsterer (industrial) - subject area upholstery	18–30	Full time / part time	Vocational Training Act (BBiG)

Formal and informal qualifications within the dual training system in Germany

The job profile for skilled industrial workers (and skilled tradesmen) trained within the framework of the dual system is characterised by a combination of technical and experience-based qualifications, which always includes the social environment in the workplace. **The dual approach to training therefore includes formal, non-formal and informal training**, by virtue of the principle of learning in the workplace, on which the concept of dual training is based. The BBiG, the relevant training standards and framework syllabuses define the relevant contents, procedures, monitoring methods and examination/certification procedures for formal learning in companies and vocational schools.

It is a statutory requirement that formal learning and evidence must be supervised during dual training, together with the certification of formal qualifications. The competent authorities (chambers of trade/industry) play an important role in terms of examinations and certification. They form examination committees, conduct examinations and issue apprenticeship diplomas for skilled workers and tradesmen after training is completed, which are valid throughout the Federal Republic. The certification system for vocational training is therefore a statutory requirement for state and public institutions.

As a rule, **certificates** are required when applying for certain positions. Certificates therefore serve a dual purpose: they ensure that skills acquired during training are recognised and that workers are able to access the appropriate jobs on the employment market. For the company providing training and other companies, this certificate is considered as formal evidence of the qualifications obtained and therefore a basis for assessing employability.

Table **Characteristics of formal, non-formal and informal learning**

Formal learning	Non-formal learning	Informal learning
1. Learning in an organised and structured context, 2. structured as regards learning objectives, learning time or learning support, 3. intentional and goal-directed from the learners' point of view 4. generally leads to certification.	• Learning embedded in planned activities, • deliberate, from the learners' point of view.	• Learning in daily life, in the workplace, in the family, in leisure time, also called (learning from) experience, • not organised or structured in relation to learning objectives, learning time or learning support, • not explicitly intended as learning.

Source: based on CEDEFOP (2009), WERQUIN (2010)

The situation is different with regard to the recognition and certification of qualifications obtained non- formally and informally within the dual training system. **In terms of key skills, non-formal learning is an integral part dual training. The same applies to informal learning**. Germany has adopted a rather critical and reluctant stance to the recognition of non-formally and informally acquired skills. This reluctance is largely based on the success of the dual system as a teaching and learning model, which is based on a combination of formal and non-formal/informal experiential learning. This underlying combination, which forms the basis of dual training, explains the 'sceptical' view adopted in vocational training policy of the formal recognition and certification of non-formally and informally acquired qualifications. **It should be noted that no systematic, uniform certification or "official" recognition currently exists for qualifications acquired non-formally and informally within the framework of dual training.**

Modernisation of dual apprenticeships

For many years, the debate surrounding vocational training has been dominated by the push for the training standards to be extended and made more flexible. This is considered necessary, in order to keep abreast, in particular, of rapid changes to qualification requirements within the employment system and thus meet companies' needs. The reorganisation of dual apprenticeships is intended to address these changes.

Since the mid-1980s, 'key qualifications and skills' have been reintegrated as part of the training standards. They now form an integral part of the concept of professional action competence. The aim of introducing key skills is to reinforce inter-professional skills and action competences in apprentices. Due to changes in the organisation of work and processes, the approach applied to – transferrable – key skills aims to overcome the traditional division of labour. The main aim is therefore to link specific tasks and activities across the entire work process with the social, organisational and strategic aspects of professional life

New style apprenticeships: UPHOLSTERER

Reclassification of training for upholsterers

"Vocational training for upholsterers was first introduced in 1997. Alongside the technical, economic and social changes that have already taken place, over the last few years, structural and organisational changes have also occurred in companies, which have also affected professional requirements for employees and their activities. A slight, but steady decline can be seen in the training figures. During 2005, 330 articles of apprenticeship were signed, compared to 261 in 2011. The profession is dominated by older workers and urgently needs young qualified tradesmen.

Intensive and highly technical upholstery work has declined, as most frames, shaped pieces and accessories are now purchased and no longer made by the company itself. The main tasks of the upholsterer are now pre-upholstery and covering upholstered furniture. Foam products are generally used for this purpose. Natural filler materials, such as Afrika, are now only used for special orders. Further developments include stricter product requirements and a wide range of mechanical and electrical functions (e.g. adjustable relaxation/recliner functions, massage devices, connection to digital media). In the future, training will also include the development and creation of prototypes, in order to make trained upholsterers more employable."

Source: BIBB – Upholsterer Reclassification (planned for 2014))

Development of sectors and employment

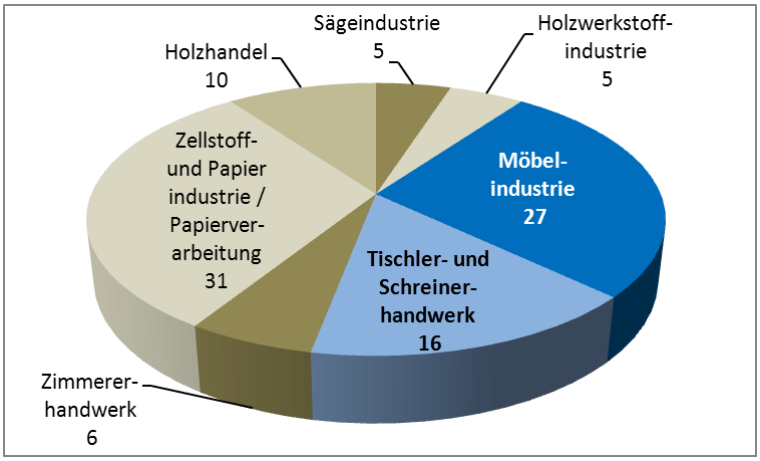
Sector structure. The wood working/processing industry can be subdivided into three sub-sectors: Wood industry (1), Furniture industry (2) and Other sectors (3). The wood industry sub-sector (1) includes the following specialist branches: saw mills, wood materials, parquet flooring, building trade materials, wood packaging and other wood products. The furniture industry (2) consists of the following specialist branches: office/shop furniture, kitchen furniture, mattresses, household furniture, such as upholstered and other furniture. Other sectors (3) include musical instruments, brooms, brushes and other products.

The turnover generated by the German wood industry, as a whole, rose by 1% in 2012. In total, companies sold goods worth € 33.2 billion, compared to €32.8 billion in 2011. As the largest section of the wood industry, the furniture sector increased its turnover by 1.3% last year and generated €17.1 billion. In total, the German wood industry employed (+ 1.4%) 155,431 workers and employees at 986 companies in 2012. The number of employees rose slightly by 1.5% compared to 2011.

Fig. 12
Structure of the wood industry in Germany in 2012

(Sub-sectors according to the proportion of total turnover produced by the sector in %)

- Sawmill industry: **5%**
- Wood materials industry: **5%**
- Furniture industry: **27%**
- Joiners and cabinet makers: **16%**
- Carpenters: **6%**
- Pulp and paper industry/paper processing: **31%**
- Timber trade: **10 %**



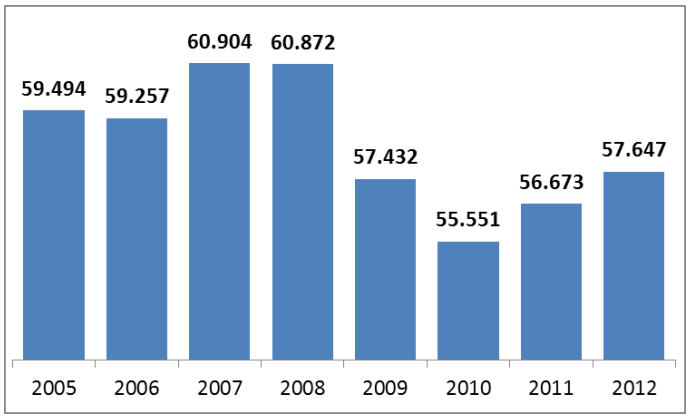
Source: DWHR 2012

Wood industry

The number of jobs rose and stabilised – increasing from approx. 59,500 jobs in 2005 – to approx. 60,900 in 2008. In the aftermath of the financial and economic crisis, the number of jobs then fell significantly to 55,500 in 2009 and 2010, so that approx. 5,400 fewer people were employed in the sector, when the figures reached a low point.

As a reaction to the effect of the crisis, the trade unions opted for short time as a means of protecting jobs. As a result, it was possible to protect the majority of jobs, hold onto skilled workers and prevent even more drastic job losses. The last two years have seen the creation of approx. 2,100 new jobs, but the figures have not reached pre-crisis levels.

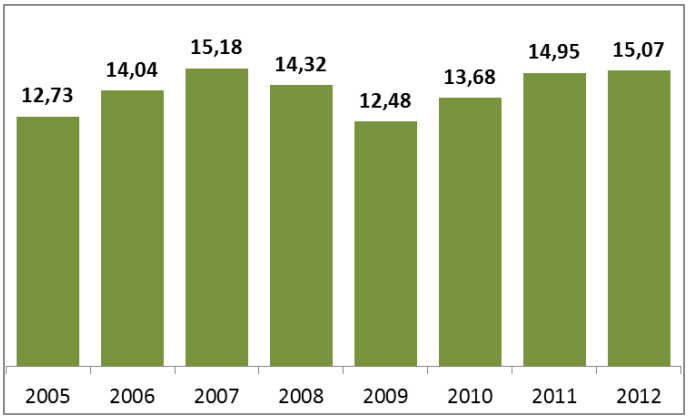
Fig. 13
Employees in the wood industry 2005 – 2012



Source: destatis, IG Metall

The decline in sales first began during the 2008 financial and economic crisis, before becoming more accentuated in 2009. Unlike employment figures, sales figures saw a markedly faster recovery. This made it possible to compensate almost completely for the collapse in sales. Sales figures have now almost returned to their pre-crisis levels.

Fig. 14
Turnover for the wood industry 2005 - 2012 (€ billion))

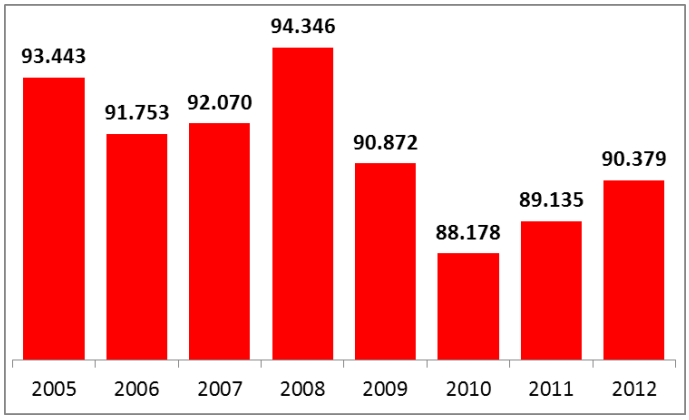


Source: destatis, IG Metall, HDH-Monthly Report Jan.-Dec. 2012

Furniture industry

Employment figures increased slightly between 2005 and 2008, despite intermittent decreases, and levelled off at about 94,300. The financial and economic crisis in 2009 and 2010 led to a significant fall in the employment figures from 6,200 to approx. 88,100 people. When measured against the number of people employed in 2008, the furniture industry currently provides about 4,000 fewer jobs than when the figures peaked during the earlier period.

Fig. 15
Furniture industry employees 2005 – 2012

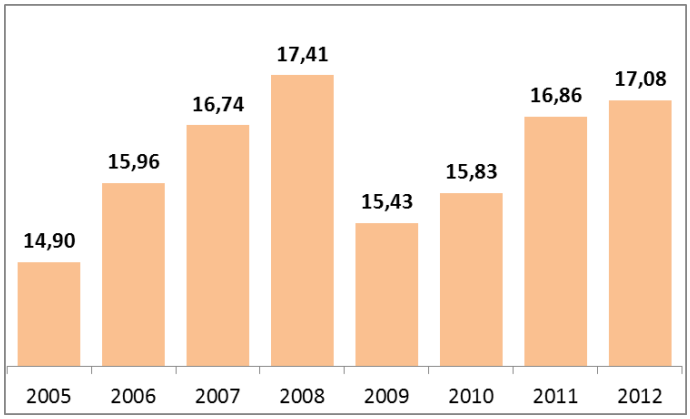


Soruce: destatis, IG Metall

After collapsing due to the crisis and reaching a low point in 2009, furniture industry sales had already recovered by 2011/2011. In 2012, sales had already almost returned to their 2008 levels.

Fig. 16
Furniture industry sales 2005 - 2012
(€ billion)

Furniture industry sales in 2012 (€17.08 billion) consisted of domestic sales worth €12.27 billion and overseas sales of €4,81 billion.



Source: destatis, HDH-Monthly Report, Jan.-Dev. 2012

Developments in the training place market

General changes affecting the training place market in Germany – such as the falling number of training places and reduced demand for training places – also affect the furniture industry and joinery trade as a whole.

Rather than a shortage of apprenticeship places, demographic change is now causing a shortage of applicants in some subsectors and regions. At the same time, however, a considerable number of applicants remain who do not immediately succeed in making the transition from school into apprenticeship. These include the group of unplaced applicants from previous years, as well as young people from migrant backgrounds, disadvantaged individuals, and young people with learning difficulties or other disabilities. In general it becomes an increasing problem, to attract young people for learning and working in the furniture and wood processing industry.

Transition from training to employment

Transition from training to employment has improved over the last few years. Major reasons for this development include a fall in overall training figures, the fall in demand (due to demographic factors) for in-company training places and the consistently high demand for skilled workers to work in companies.
Dual training therefore generally creates good conditions for qualified workers and well-paid jobs, according to the relevant collective agreements. For companies, employing apprentices also has significant advantages:

- Short induction period and low costs (saving 'transaction costs'),
- Lower recruitment costs,
- Avoidance of inappropriate appointments and fluctuation costs,
- Improved understanding of corporate cultures und contexts by apprentices after completing their training,
- Reputation in the local area.

Cabinet maker (joiner) in current job: level of qualification and degree to which learned training content is put to use [3]

To what extent do joiners work in their apprenticed trade, to what extent do they work at the level commensurate with their qualifications and how much of what they have learnt can they use in their occupation?

In a BIBB-survey carried out in 2006, 20,000 employed people (not including apprentices) were asked if the area in which they were currently employed corresponded to or was related to the trade for which they were trained. According to the responses, 22% of joiners work in their own trade (5% less than the average of all occupations) and 45% of joiners work in a different occupation to the one for which they were trained (5% more than the average of all occupations).

Joiners judge the level of their currently practised occupation corresponds to 97% with that which they learnt in the dual training system. Of those working in a different occupation to the one for which they were trained, it was only 59% who confirmed a corresponding level of adequacy. Consequently, the view of this vocational group corresponds with that of all occupations.

As well as the aspect relating to the level of skill required for their current occupation, making use of the knowledge learnt during training is an important aspect. Of the views expressed regarding how much of the acquired vocational knowledge and skills can be used in their present occupation, high numbers of joiners working in the occupation for which they were trained (97%) and in related occupations (93%) confirmed this was the case. These views were slightly above the figures for all groups of vocations. At just 27%, far fewer opportunities were seen by joiners working in different occupations to use the knowledge and skills learnt during training.
It is true that after completing their apprenticeship, joiners work less than other vocational groups in the occupation for which they were trained; however, the level of training is almost universally considered adequate. A great deal of the acquired knowledge is useful in the occupation for which they were trained and related occupations; however, only a quarter of the joiners working in other occupations than for which they were trained could make use of their acquired knowledge

[3] *Quelle: BIBB/BAuA Erwerbstätigenbefragung 2006*

D. Utilisation of qualification: Requirements and needs from workplaces, labour and employment system

Trends in workforce and qualification development

When trends are observed it is clear that the furniture profession is in a continuous change. New techniques, new materials and their respective application techniques and handling, the increasing importance of computer drawing, CNC producing or the outsourcing of part of the production to CNC operating suppliers all tend to change the professional field and thus the demand for workers that have a different set of skills and knowledge that in the last decades. Nevertheless there is an unchanged demand and need for well qualified workers with broad professionell skills and key-qualifications.

Vocational qualifications and work activities (expert interviews)

The profession-specific and workplace-related requirements for the employment of skilled workers can be described with reference to extracts from the expert interviews conducted as part of the BolsterUp II Project in July-September 2013.

The survey focused on the use of labour (breadth and depth), application of professional knowledge and skills (qualifications and how they are used) and responsibility and autonomy in the workplace.

5 trained joiners and 7 upholsterers from a total of 6 companies were involved in the survey. *(see attached overview).*

Part 1: Quantitative evaluation of work contents and procedures

CABINET MAKER		
Question	**YES**	**NO**
Can you make subject-related decisions yourself when working on your tasks? What kind of decisions?	**4**	
Do you have customer contact /do you conduct customer talks? What do you consider important to do this successfully?	**2**	**2**
Do you know the main regulations regarding health and safety?	**5**	
Can you apply / use protective devices?	**4**	
Do you wear protective clothing?	**5**	
Do you know regulations regarding environmental protection?	**3**	
Are you able to contribute to environmentally-friendly waste disposal and rational / sustainable use of materials?	**3**	
Do you plan your own work processes and steps? By yourself or in a team?	**4**	
Are you responsible for the coordination of work steps / tasks? What do you need to know to do this? What is important to consider?	**3**	
Do you draw-up technical documents (drawings, lists of materials, etc.)?	**4**	

UPHOLSTERER		
Question	**YES**	**NO**
Can you make subject-related decisions yourself when working on your tasks? What kind of decisions?	**2**	**1**
Do you have customer contact /do you conduct customer talks? What do you consider important to do this successfully?	**1**	**1**
Do you know the main regulations regarding health and safety?	**7**	
Can you apply / use protective devices?	**7**	
Do you wear protective clothing?	**3**	
Do you know regulations regarding environmental protection?	**6**	
Are you able to contribute to environmentally-friendly waste disposal and rational / sustainable use of materials?	**3**	
Do you independently plan your own work processes and steps?	**4**	
Are you responsible for the coordination of work steps / tasks? What do you need to know to do this? What is important to consider?	**6**	
Do you draw-up technical documents (drawings, lists of materials, etc.)?	**1**	**1**

Are you able to apply / use technical documents (drawings, lists of materials, etc.)?	**4**	
Do you use sector- / company-specific computer programmes?	**3**	
Are you responsible for estimating required materials?	**3**	
Do you set-up your own workplace (considering ergonomics) and judge transport distances?	**4**	
Do you work only inside your company or do you also deliver products and assemble furniture at the customer's site?	**2**	**2**
Are you responsible for planning the assembly at the customer's site?	**2**	**2**
Which materials do you use in your work? Do you know their specific characteristics? Do you choose materials you use yourself?		
Do you work on and process wood, wood materials and other materials manually and with machines?	**4**	
Do you know different tools? Can you sharpen and maintain them?	**5**	
Do you know different machinery and equipment? Do you know how to set-up, maintain and use the machines / equipment? Do you know how to identify faults?	**3**	
Are you responsible for fixing / removing faults? Do you know the regulations for the prevention of accidents when dealing with machines?	**2**	**2**
Are you able to use computer-operated machinery?	**2**	
Do you supervise the work process?	**3**	**1**
Do you supervise the work of others?	**2**	
Are you responsible for identifying faults and problems in the production process and optimising processes? Do you collect and interpret data?	**1**	**1**
Do you use hauling and transporting equipment?		**2**
Do you supervise the entire work process?	**1**	**1**
Do you know different measuring methods?	**3**	
Do you measure and evaluate measuring results?	**2**	
Do you produce stencils for the production of furniture	**2**	**1**

Are you able to apply / use technical documents (drawings, lists of materials, etc.)?	**6**	
Do you use sector- / company-specific computer programmes?	**1**	**1**
Which materials do you use in your work? Do you know their specific characteristics? Do you choose materials you use yourself?	**2**	
Do you know different tools? Can you sharpen and maintain them?	**5**	
Do you know different machinery and equipment? Do you know how to set-up, maintain and use the machines / equipment? Do you know how to identify faults?	**4**	
Are you responsible for fixing / removing faults? Do you know the regulations for the prevention of accidents when dealing with machines?	**3**	
Are you able to use computer-operated machinery?	**2**	
Do you supervise the work process?	**6**	
Do you supervise the work of others?	**4**	
Do you prepare padding and covering material?	**3**	
Do you produce timber joints?	**1**	**1**
Do you process wood and wood materials?	**6**	**1**
Do you join metal parts?	**2**	**1**
Do you process metal?	**4**	**1**
Do you process plastics?	**4**	
Do you know methods and instruments for the treatment of surfaces?	**5**	
Do you treat the surfaces of upholstered frames?	**2**	**1**
Do you produce stencils for cutting covering material?	**1**	
Are you responsible for estimating required materials?	**5**	
Do you hand-cut or punch out covering material?	**2**	

Do you know different furniture construction kinds? Are you able to produce different constructions?	**3**	**2**
Do you produce furniture parts with different kinds of wood / material joints?	**5**	
Do you select different fittings and assemble them?	**3**	
Do you assemble different parts such as roles, technical elements, fixtures for kitchen furniture, etc.?	**2**	**2**
Do you construct complete pieces of furniture out of the required elements, fittings and accessories? Are you able to join different pieces of furniture, e.g. wall units?	**3**	**1**
Do you know different methods and instruments for the treatment and sealing of surfaces?	**5**	
Do you treat surfaces, e.g. painting?	**5**	
Do you coat surfaces, e.g. with veneers, slides or laminates?	**5**	
Do you know the company-specific aims and methods of quality assurance?	**4**	
Do you check the quality of your work? Are you able to apply quality assurance checks?	**5**	
Do you control time and materials used and check if customer requirements are followed?	**4**	
Do you mark products for shipping?	**2**	**1**
Do you pack products for shipping?	**2**	**1**
Do you check the transport distances and the preconditions for work at the site, e.g. protection of existing furniture, power supply for electrical equipment?	**1**	**1**
Are you responsible for coordinating the assembly with other concerned parties (persons, companies, etc.)?	**2**	**2**
Do you assemble furniture to existing fittings / in buildings?	**3**	**2**
Do you know safety regulations for dealing with electricity?	**2**	**2**
Do you connect electrical equipment with existing connections?	**2**	
Do you know safety regulations for dealing with water and wastewater?	**2**	
Do you connect objects and fittings to existing circuits?	**2**	
Do you conduct checks of density and function?	**1**	**1**
Do you disassemble existing furniture and transport them?	**2**	**2**

Are you responsible for marking covering materials for further processing?	**1**	
Do you know upholstering techniques?	**5**	
Are you able to apply different upholstering techniques?	**6**	
Do you produce the form out of different form parts (e.g. foam)?	**4**	**1**
Do you produce mattresses?		**1**
Do you know different kinds of covering materials?	**6**	
Do you perform sowing, by hand or machine?	**2**	**1**
Are you able to upholster back or sitting cushions?	**5**	**1**
Can you design upholstered areas (e.g. through darts)?	**4**	**1**
Do you decorate upholstered furniture (e.g. through decorative pins)?	**2**	**1**
Do you assemble accessories such as roles, fittings, technical elements, speakers?	**4**	**1**
Do you know the company-specific aims and methods of quality assurance?	**5**	
Do you check the quality of your work? Are you able to apply quality assurance checks?	**4**	
Are you responsible for marking products for shipping?	**2**	
Do you mark products for shipping?	**2**	
Do you pack products for shipping	**1**	**1**

F. **Alteration of qualification:** Trends, transformation and future development of qualification

Main Trends in future development of Skils and Competences

Referring to future trends there are very few valuable predictions to be made.
Some focal points however can be distinguished:

- There will be more older workers. They mainly had a traditional education. They and the companies they work for can benefit of additional education in the form of courses to improve their functioning in new conditions.
- New products will be developed in the context of ecological awareness, cradle to cradle principles and new lifestyles.
- There can be an increasing demand for high quality furniture from upcoming economies.
- In the course of the coming years the price of wood as of raw material could easily go up higher if ecological measures are effectuated and regulations are respected. This will change production methods and choices for other materials.
- From upcoming nations like e.g. so-called BRICS- countries (especially China) the competition in a global market will continue to exist. Therefore more innovation products, quality, technics and processes are required.
- There will be more environmental rules and regulations to respect, forcing changes in production methods and price levels.
- A long-term decline in the demand for skilled craftsmen and unskilled laborers is to be foreseen due to further automation in the furniture production. Robots will be introduced more and more in mass production. A future increase in economic growth will not necessarily lead to higher demand in personnel. Employers will tend to develop more lean and mean manufacturing.
- New materials like plastics, stone, metal, glass, bamboo, cardboard, sheet materials demand knowledge and skills that are different than the traditional scope on wood as a material. Some of these materials were already introduced in furniture sector many years ago, but as mainly man-made raw materials they evolve permanently and offer new possible applications and the need for new technical skills.
- Changes in construction techniques, like the use of glues of many different kinds, ask for specific knowledge and skills.
- The use of new materials with new properties and the focus on health, environment and safety in the furniture sector asks for trained workers that can control these demands.

Haupttrends: Qualifikationen und Qualifikationsbedarfe

- *Knowledge of and making use of light-weight methods of construction*
- *Knowledge of and making use of new materials*
- *Handling standardised prefabricated components*
- *Knowledge of complex machine controls and how to operate them*
- *Standardisation of components made of wood*
- *Making use of materials for standardised mass production*
- *Knowledge of composite materials and their use in the wood industry / carpentry trades*
- *Knowledge of efficient use of resources*
- *Knowledge of efficient use of material*
- *Knowledge of efficient use of energy*
- *Current information and communication technologies*
- *Knowledge of controls used in production processes*
- *Knowledge of design*
- *Presentation and communication abilities*
- *Problem solving competence*
- *Customer oriented*

- E-skills will have to be permanently updated. They are covering a whole range of applications, from management, supply control, furniture design, work drawings, machine operating, accountancy, administration and publicity.
- Demands from clients become more and more individualized. Clients want more influence on functions and forms of the products the order. Production series will become smaller and 'unique products' are more and more in demand. This demands flexibility in production and thus a more flexible attitude from the workers.
- Elderly people and singles provide upcoming markets with specific demand.
- Commercial and communication skills will become more important, not only in the acquisition part but also and not in the least on production levels.

Current and future qualifications at a glance

Part 2: Trends and evaluation of expert interviews (July-Sept. 2013)

CABINET MAKER		
Current Qualifications		
Knowledge	**Skills**	**Competences**
Technical Know-How in general (**1**)	Ability of using software programs: CAD-presentation- and construction tools like e.g. Vectorworks (**1**)	Competence in software programs: CAD-presentation- and construction tools like e.g. Vectorworks (**1**)
Electrical and electronical know-how (**1**)	Ability of using software programs: CNC-machine program tools like e.g. Woodwork CNC (**2**)	Competence in software programs: CNC-machine program tools like e.g. Woodwork CNC (**1**)
Knowledge of different materials science (**1**)	Ability of using Microsoft office programs like Excel and Outlook (**1**)	Knowledge about different customer wishes relating components with different optics but with same components behind the surface. "The same elements with a pretty face." (**2**)
	Safe handling with electricity in the firm and at the customers home/firm (**1**)	To work in teams (teamwork) (**1**)
	Ability to use joints and filling material (**1**)	Ability of independent work (**1**)
		Problem solving skills (**1**)
		Mathematical understanding (**2**)

In brackets = number of entries ***(N = 5)***

F. Alteration of qualification: Trends, transformation and future development of qualification

CABINET MAKER		
Future Qualifications		
Knowledge	**Skills**	**Competences**
Stronger knowledge base about CNC technics (**4**)	Increasing use of computer based software programs: CAD presentations and constructions tools (like Vectorworks) (**3**)	To extend and deepen knowledge about software programs like CAD presentations and constructions (**3**)
Knowledge about environmentally friendly natural-production (**2**)	Increasing use of computer based software programs: CNC programs like Woodwork (**4**)	To extend and deepen knowledge about software programs like CNC programs (**3**)
Knowledge about communication (**3**)	Be even more capable of recognizing patterns (with the help of computer) in the work (like from previous work done before) and continue it (**1**)	Drawing programs (**1**)
Knowledge about combination materials (e.g. wood and textile, wood and metal) (**1**)	Ability of customer communication (**2**)	Teamwork (**1**)
Knowledge about surface technologies, like high polish, finishings (**2**)	To build steps/stairways (**1**)	The willingness of more flexibility work (**2**)
Knowledge about light technology (**1**)	Working with more machinery, e.g. CNC (**1**)	Note: More pedagogical knowledge of trainers in dealing with trainees (**1**)
Knowledge over work materials like aluminum, glass, glass replacement (**1**)	Working with new materials e.g. glues and coatings (**2**)	
Knowledge of Design (**1**)		
Computer knowledge (**1**)		
Knowledge about electricity and technic (**2**)		

In brackets = number of entries ***(N = 5)***

F. Alteration of qualification: Trends, transformation and future development of qualification

UPHOLSTERER		
Current Qualifications		
Knowledge	**Skills**	**Competences**
General computer skills (**1**)	To check material lists (**1**)	Handling with metal (**2**)
	To assess qualitatively upholsterer materials (**2**)	Handling with wood (**2**)
	To build model structures via computer based programs (like CAD) (**1**)	Handling with leather (**2**)
	To have a good sense of proportion (**2**)	To work in teams (teamwork) (**1**)
	Be able to use different kinds of sewing technics (**1**)	Communication skills (**3**)
		The principle ability to learn (**2**)
		Artisanal fitness (**1**)
		The willingness of creative work (**1**)
		The approach to do qualifications (**1**)
		The willingness of more flexibility work (**1**)
		The willingness of more flexibility work (**1**)

*In brackets = number of entries **(N = 7)***

F. Alteration of qualification: Trends, transformation and future development of qualification

UPHOLSTERER		
Future Qualifications		
Knowledge	**Skills**	**Competences**
Technical know-how in general (**5**)	To install motors (for example in chairs) (**4**)	To deal with different kinds of components, like folding parts of chairs, sides or adjustments (**3**)
Knowledge about electronics and sensors (**3**)	To install speakers (**1**)	Mathematical understanding (**1**)
Increased knowledge about metal processing (**3**)	To install docking stations for technical equipment like MP3-player, smartphones, chip cards (**1**)	Enthusiasm for technology (**1**)
Knowledge about reusability of materials (**4**)	To install cup holders (with cooling or heatable functions) (**1**)	Understanding for the interplay between wood and metal (**1**)
Advanced knowledge about leather and cotton, textile fabrics (**1**)	To install technical massage functions (**1**)	To fit in machines ergonomically (**1**)
Technical know-how in general (**5**)	To install fittings (**1**)	To deal with customers (counseling sessions, behavior of communication) (**1**)
Knowledge about electronics and sensors (**3**)	To able to use a digital angle instead an analogue one (**1**)	Different working times (**1**)
	To produce good and understandable product inserts (**1**)	Different working times (**1**)
	Ability of eliminating small disorders on machines (**1**)	
	To install motors (for example in chairs) (**4**)	
	To install speakers (**1**)	
	To do computer based communication with supplier firms (**1**)	
	Working with computers (**1**)	

*In brackets = number of entries **(N = 7)***

Annex

EXPERT – INTERVIEWS

Cabinet maker Germany

5 Interviews from 4 Companies

Company	Qualification / Position
(1) Tischlerei U. Romanowski Gmbh & CoKG	1) Tischler
(2) Tischlereri Feinschliff	2) Tischler
(3) TS Tönsing	3) Ehemaliger Azubi – jetzt Anstellung als Tischler
(4) WILKHAHN (Bad Münder)	4) Ausbilder Tischler und Holzmechaniker
WILKHAHN (Bad Münder)	5) Tischlerin

Upholsterer Germany

7 Interviews from 3 Companies

Company	Qualification / Position
(1) W. Schillig Polstermöbelwerk (bei Coburg)	1) Polsterer / Betriebsrat
	2) Abteilungsleiter / Polsterer
	3) Polsterer
	4) Industriemeister, Fachrichtung Polsterei
	5) Ausbilder Polsterer
(2) WILKHAHN (Bad Münder)	6) Meister / Polsterer
(3) Reitsport und Polsterei Rößler	7) Sattlerin / Polsterin

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