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**VOCATIONAL EDUCATION
AND TRAINING IN GERMANY**
THROUGH PRACTICE AND THEORY TO SKILLED EMPLOYEE

VOCATIONAL EDUCATION AND TRAINING IN GERMANY

THROUGH PRACTICE AND THEORY TO SKILLED EMPLOYEE

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Content

- 6 | PRINCIPLES: DESIGN AND STRUCTURE**
- 22 | IMPLEMENTATION: TASK DISTRIBUTION AND LEGAL FRAMEWORKS**
- 28 | COSTS AND BENEFIT ASPECTS**
- 34 | DEVELOPMENTS**
- 40 | SOURCES**
- 41 | IMPRINT**

PRINCIPLES

- 6 |** Why is vocational education and training part of the social market economy?
- 7 |** How did vocational education and training come about in Germany?
- 8 |** How is the German training system structured?
- 9 |** What is a vocational education and training?
- 10 |** Which careers involve vocational education and training?
- 11 |** Who can complete vocational education and training?
- 12 |** How do school leavers find a training position?
- 13 |** What can young people who cannot find a training position do?
- 14 |** When is the transition system implemented?
- 15 |** What should a trainee expect in a company?
- 16 |** Who can train?
- 17 |** What is defined in the training contract?
- 18 |** What content is taught by the vocational school?
- 19 |** What tests do trainees have to take?
- 20 |** What career opportunities are opened by the vocational education and training?
- 21 |** What is a title of master craftsman for?

IMPLEMENTATION

- 22 |** What does the state do?
- 23 |** Why are unions necessary in the vocational education and training system?
- 24 |** What do companies do in the vocational education and training system?
- 25 |** How do the companies coordinate with each other?
- 26 |** Who has a say in the introduction of new training careers?

COSTS & BENEFIT ASPECTS

- 28** | How is the vocational education and training system financed?
- 29** | What costs exist for the company?
- 30** | Why is it worthwhile for companies to train?
- 31** | How expensive is vocational education and training for the state?
- 32** | What effect does vocational education and training have on youth unemployment?
- 33** | Why do school leavers choose a vocational education and training?

DEVELOPMENTS

- 34** | What influence does globalization have?
- 35** | What influence does the demographic change have?
- 36** | How do falling student numbers influence companies?
- 37** | How can vocational education and training and universities be linked?
- 38** | What is a dual degree programme?
- 39** | How do the requirements change through the digitalization?

Why is vocational education and training part of the social market economy?

A central promise of the social market economy is the broad participation of people in wealth. The free competition of the market economy leads to higher productivity of the society and growth in prosperity. The individual income of people – i. e. their personal share in productivity growth – depends on many factors: individual decisions, effort, talent, but also luck. Income inequality is generally accepted if the access to opportunities is considered to be equitable. The key to equal opportunity is the training system, as good training reduces the risk of unemployment and increases the average income.

Vocational education and training is a pillar of the German education system and takes on an important function in the social market economy. No formal restrictions to access are present for vocational education and training. Every student can apply for a training position, regardless if they have completed school, and which school they have completed. This removes barriers to the training system and enables a broad sector of the population to take a recognized vocational

qualification and thereby have a good chance on the labour market. High productivity and quality standards can thereby be ensured on all levels of the economy.

At the same time, the system of duality – vocational education and training in the vocational school and in the company – guarantees a close connection to the requirements of the economy. This enables a high degree of flexibility. If the requirements for employees change – for example through technological progress – this can be quickly integrated into the training. The vocational education and training system ensures a well-qualified skilled employee base and thereby the foundation for global competitiveness of the German economy now and in the future.

The vocational education and training system therefore serves the promises of the social market economy in two ways: it increases the well-being of society through its positive effects on the competitiveness of the economy. And at the same time, it enables many to participate in prosperity.

How did vocational education and training come about in Germany?

The historical roots of the vocational education and training system reach far back into the middle ages. As early as the 12th century, the first craft guilds started in commercial cities, as the predecessors to today's chambers (see also page 25). They created the training model "Apprentice – Assistant – Master" and regulated both the apprentice and the master craftsman training in the craft.

With the trade regulations, a kind of compulsory vocational education for workers under the age of 18 years was introduced for the first time in 1869. The most poorly trained young factory workers had to learn basic knowledge in reading, writing and arithmetic in the vocational school. This knowledge was needed as a result of the increasing industrialization, particularly in industry, which was dependent on skilled workers from trade. In the second half of the 19th century, the first industrial companies introduced vocational training.

In the Artisan Protection Act, the craft was given a new legal framework in 1897. Amongst other things, the dual principle of vocational training – practical training in

operation, theoretical teaching in vocational schools – was first prescribed and regulated by law. In addition, the right to be trained to the title of master craftsman was included.

With industrialization, the demand for commercial competencies also increased at the start of the 20th century. As companies found the qualification of merchants who had previously been trained in vocational schools as insufficient, they introduced the first commercial training careers. The term "Berufsschule" (vocational school) was introduced in Prussia in 1923.

With the Vocational Training Act of 1969, the regulations that had differed regionally up to that point were standardized. The law united the interests of the state, employers and employees. The Federal Ministry of Education and Research (then the Federal Ministry for Scientific Research) took over the leadership in the field of vocational training from that point. Simultaneously, the law provides for the close involvement of the social partners in all vocational training issues – a proven principle until now (see also page 26).

How is the German training system structured?

In principle, compulsory education exists for all children from six years of age, where at first all attend the four-year primary school together. In the subsequent "tiered school system", the educational paths branch out into different types of schools.

After high school, there are various opportunities to gain a nationally recognized vocational qualification: most students choose the path via university or vocational education and training. Almost half of young adults in Germany thereby achieve their professional qualification through the dual system. Whereas a university entrance qualification (for example, a high school diploma) is necessary for a university education, there are no formal entry criteria for vocational education and training. In the dual system, therefore, the different educational pathways after primary school partially meet again.

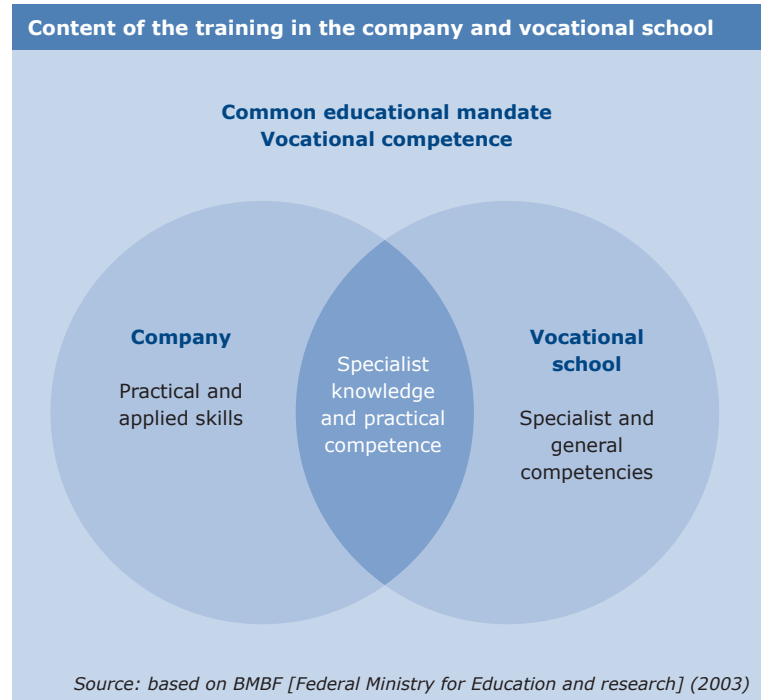
The German training system at a glance

age	Further education					Tertiary sector
	Further vocational training			Universities		
19	Dual system			Vocational schools	High school	Secondary sector II
18						
17	Special needs school	Haupt-schule (secondary modern school)	Realschule (secondary school)	Integrated compre-hensive school	Gym-nasium (High school)	Secondary sector I
16						
15	Primary school					Primary sector
14						
13	Daycare/kindergarten					Elementary sector
12						
11						
10						
9						
8						
7						
6						
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3						
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1						

What is a vocational education and training?

In the vocational education and training system, school leavers are prepared for working life. Depending on the training occupation and preceding education, training lasts for two to three and a half years, and takes place – dually – in two locations: theory is learned in vocational schools, practice in the training company. The trainees spend about three or four days per week in the company. He is an employee in the normal workforce and is being introduced to the various work processes of the profession by his trainer. The teaching in the vocational school extends to the training in the company. It takes place one or two days per week in the so-called specialist classes.

The learning content is closely coordinated with the practical training in the company. Every successfully completed training leads to a state-tested vocational degree that is recognized throughout Germany.

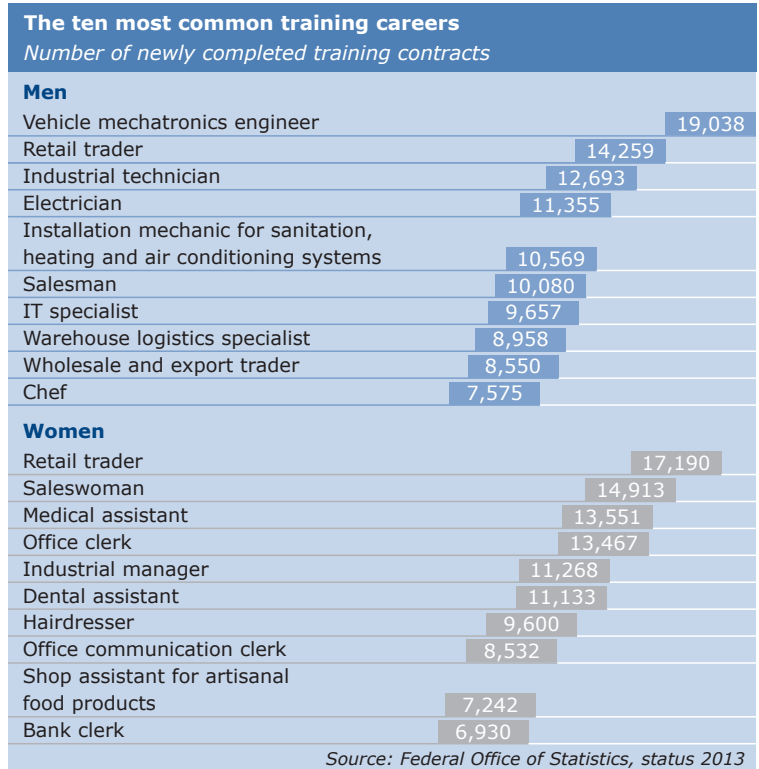


Which careers involve vocational education and training?

The dual vocational training, also previously known as "Lehre" now enables training in about 330 jobs in different branches, from the service sector to manual skills to the high-tech industry. In addition to highly specialized jobs such as custom tailoring, there are also careers spanning sectors such as office administrator.

Although there is a large selection of different training careers, about 20 percent of trainees choose one of the five most popular careers. The training career chosen by young people is not only strongly dependent on gender, but also on the type of school that they attended previously. In total, about 60 percent of the trainees were trained in the sectors of industry and trade.

The most popular career is retail salesperson.

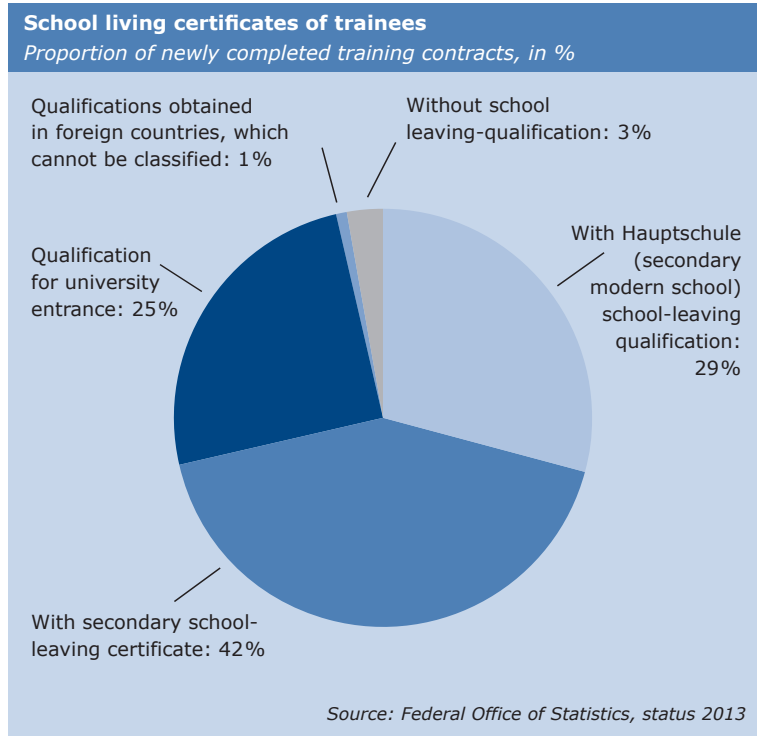


Who can complete vocational education and training?

Vocational education and training is legally open to every young person. Regardless of whether a young person has graduated from school and which school he or she attended, they can apply to companies for a training position. The companies have interviews and independently find their trainees. Young people who are practical and skilled in handcrafts can learn a qualified career through training. In this way, about 6 percent of trainees have no formal school leaving certificate.

In any case, there is no entitlement to a training position. The companies themselves decide how many training positions they will offer and which trainees they will employ. Particularly in economically difficult times, it is therefore difficult for lower performance students to find a training position. A transition system exists for them (see also page 13 and 14).

About 25 percent of trainees have obtained the university entrance qualification.



How do school leavers find a training position?

School leavers must find a training position by themselves. Before the actual search for a suitable company, there is therefore first the choice of career: about 330 different training careers are available (see also page 10). Information on all careers with regard to content, design and perspectives are provided on an Internet portal. In addition, there are offers of career advice interviews, student internships, Internet-based career search tests and different events by and with interns, which should help in the decision.

If the school leavers have decided on a career, they must apply to the companies for a corresponding training position. Apprenticeship exchanges from the Federal Labor Office and the chambers (see also page 25) give an overview of the companies that are looking for trainees for the respective training career. If the school leavers have decided on a company, they submit a written application, as with a normal job search.

The companies view the incoming applications and try to find the most suitable candidate for the position. In addition, they invite the applicants to interviews, assessment centers or trial days. These selection interviews also help school leavers to find the right training company for them. This selection phase is very important for the companies. They invest time and money to train their trainees and also hope to employ them afterward (see also page 30). For this reason, trainees are generally chosen very carefully.

If both the training company and the applicant decide on each other, this results in a training contract (see also page 17). During the trial period, both parties can once again critically examine whether they meet each others expectations. If not, the contract can be terminated. However, after the trial period there is a comprehensive dismissal protection for the entire duration of the training.

What can young people who cannot find a training position do?

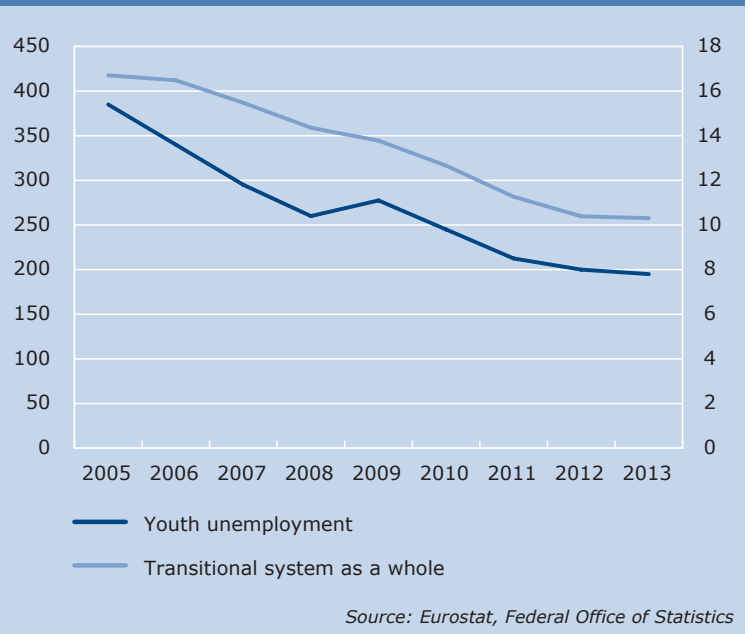
Young people, who do not find a training position and have not yet completed their obligatory schooling period of nine to ten years, must participate in training measures organized by the state (see also page 14). These do not lead to a vocational qualification, but should promote the preparedness for training. The measures themselves are extremely diverse: for example, a school leaving certificate can be gained through training routes or basic vocational training can be completed.

In economically difficult times, companies have to make cutbacks and offer fewer training positions.

Young people then find it harder to find a training position. The number of people who have to take part in the transition system is correspondingly higher. For this reason, there is a significant connection between the number of young people in the transition system and the economic situation.

With the economic growth, the number of young people in the transition system decreases.

Young people in the transition system and youth unemployment of 1,000 people (left scale), in % (right scale)



When is the transition system implemented?

An important objective of the training and career market policy is to enable young people to have a seamless transition from school to training and then to the career. Even if this is successful in most cases, not all students are able to find a training position immediately. The transition system represents a solid and immediate alternative for them.

The measures, which usually last for one year, do not lead to a vocational qualification, but should create the conditions for a successful vocational training and introduce students to the working world. The specific design is therefore geared toward the particular requirements: career training routes teach IT and media competence and give language and job application training among other things. In addition, a (higher) school qualification can be obtained or an eligible basic career training can be completed.

The measures of the transition system are targeted towards school leavers who often have difficulty finding a training position. Their effectiveness – fast integration into the training market – is contentious though. Particularly during times of high unemployment, the system takes on a secondary function: it protects young people from the experience of early unemployment (see page 32). This protection is particularly valuable in economically strained times. However, the participant numbers in the transition system must be constantly monitored: the objective must be to introduce the school leavers to a training position as soon as possible.

Due to the demographic change (see page 35) and particularly also due to the good economic position of Germany, the participant numbers have been declining for years. But there is still much to do: despite the transition system, almost one in every eight young people between 20 and 29 has no vocational qualification (2012).

What should a trainee expect in a company?

The main part of the training takes place in the company with which the trainee has a training contract (see also page 17). They therefore pass through different training modules following a fixed plan. While the individual stations are defined individually, training content, time sequences and tests are regulated nationally in so-called training ordinances (see also page 22).

Within the framework of the operational part of the training, the trainee gets to know the company, the work processes and the day-to-day-work. Under guidance, they take over the same activities as their trainer.

The trainer/trainee ratio varies strongly between sectors and company sizes.

In this way, not only company and sector-specific knowledge is conveyed, but the trainees also gain important work experience for their later entry into a career.


Trainer/trainee ratio in different training sectors		
<i>Ratio between trainer and trainee</i>		
	Trainer	Trainee
Industry and trade	1	3.1
Home economics	1	2.9
Public service	1	2.0
Trade	1	1.7
Agriculture	1	1.6
Freelance professions	1	1.2
In total	1	2.2

Source: Federal Office of Statistics, status 2011

Who can train?

Companies must meet criteria defined by the state in order to be permitted as a training company. The provisions therefore differ between the suitability of the company as a training facility and the professional competence of the trainer. In principle, the company must be able to convey the skills and knowledge specified in the Training Ordinance (see also page 22). It must also provide trainees with a job that is equipped for the purpose and where relevant work stages for the career can be learned and practiced. The necessary technical devices and equipment (such as tools, machines, maintenance and servicing equipment) must be up to date in terms of technology. If a company cannot teach a skill specified in the Training Ordinance, for example because a certain machine is not installed in the company's production, a training association is possible. In this case, the trainee learns the relevant skill in another training company.

The skills are taught in the company by a trainer. He is responsible for training the young people and often takes on an educational function in addition to the professional guidance. He must therefore meet certain vocational and personal requirements, for example he must not have a criminal history. He must be at least 24 years old and have studied and passed the training career himself – or be able to teach the required skills based on long-term work experience. In addition, he must be able to independently plan, conduct and inspect the training content. He must prove these skills through written and practical tests. The acceptance of this test and the final approval of the company as a training company is done by the responsible chambers (see also page 25).



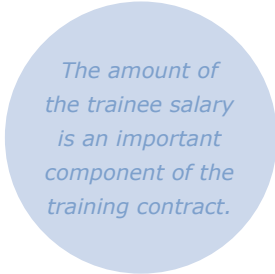
*About 21 percent
of all German
companies train.*

What is defined in the training contract?

The training contract is concluded between the companies and the trainees. The important content of the contract is generally negotiated by the social partners of the sector. In addition to the job description and the qualification to be reached, it also contains the amount of the trainee salary, the number of holidays and the length of the trial period. The salary is normally graduated and is oriented to the progression of the training. With progressive training, the trainee can continue to become more integrated into the normal production processes and therefore receives a higher salary.

The exact amount of the salary is generally determined by a tariff and differs by sector. On average, trainees receive about €800 per month. In the first year, the range is between about €374 (hairdressing) and €879 (some careers in industry, metalwork and technology). In the third training year, the salary rises to values between €511 (interior decorator) and about €1300 (different craft professions).

In addition, the exact duration of the training and the training plan is determined in the training contract with the different training stations. The comprehensive dismissal protection is particularly worth mentioning. This applies as soon as the trainee has completed the trial period, which can be between one and four months. While dismissal without notice is possible during the trial period, only important reasons can lead to dismissal by the company after this. On the other hand, the trainee can also end the training contract with a four week notice. This broad dismissal protection prevents the company from dismissing their trainees during economically difficult times, before their career training can be completed.



The amount of the trainee salary is an important component of the training contract.

What content is taught by the vocational school?

The practice-oriented part of the training in the company is expanded by the teaching in a vocational school. It is obligatory for all trainees and takes place over the complete duration of the training. Depending on the career and training year, trainees have between eight and 12 teaching hours on one or two days per week. Particularly in training careers with only a few trainees, it can occur that the vocational school is far away from the training company. The daily commute is therefore difficult for students, so teaching often takes place in a block in these cases. The trainees go to school for up to eight weeks at a time.

The content of the teaching is structured into two parts: firstly, job-related, theoretical principles that are coordinated to the requirements of the respective training career (two thirds of the teaching plan) and secondly general subjects such as German, math, politics, economics and social studies, foreign languages, religion and sports (one third of the teaching plan). In German,

the vocational students practice communicating effectively precisely verbally and in writing – an important condition for working in a later career. The content of the vocational teaching is determined (see also page 22) in the corresponding framework teaching plan.

The teaching is organized into so-called “learning fields”: professional content and competences are not processed in the blocks, but based on real situations in working life. This didactic structure helps vocational schools to incorporate the individual needs of individual students better. This is an advantage as they have a very broad target group – former students from all German school types.

The content of the teaching is regularly tested and recorded in certificates. Progression to the next year takes place regardless of the grades. The training can only be extended and the school year repeated in consultation with the training company.

What tests do trainees have to take?

Comprehensive final exams take place at the end of each training, in which the learning content of the whole training is tested. Depending on the training career, students are tested both in writing and verbally. The tests are uniform nationwide and take place at the same time and with identical tasks. These tests are organized and conducted by the so-called “chambers”, for example the Chambers of Crafts or the Chambers of Industry and Trade (see also page 25).


The failure rate in the final test is very low at about 10 percent. If the final test is not passed, it can be repeated up to two more times; after this, it is conclusively considered as failed.

Upon successfully passing the vocational education and training, the graduate receives three certificates: one from the vocational school, one from the training company and the final certificate recognized by the state.

The vocational school certificate documents the performances in the theoretical part of the training. It requires sufficient school performances. In principle, it is not an essential requirement for a vocational qualification, but the graduate only has access to continued schooling with the vocational qualification.

The reference from the training company describes and evaluates the performances of the trainee during the training in the company. It is comparable with an employer’s reference and verifies the practical experience gained.

The leaving certificate is issued by the responsible chamber. It is recognized by the state and enables the graduate to apply to companies throughout Germany. The German vocational degrees have a very good reputation abroad as well.



About 9 of every 10 trainees pass the final test at the first attempt.

What career opportunities are opened by the vocational education and training?

The vocational education and training system offers young people various further development possibilities after graduation. It is closely connected with the whole training system. In this way, a higher qualification can be gained after the vocational qualification and some years of experience in the career: depending on the training career, e.g. master craftsman, technician, business administrator or marketing expert. This qualification allows graduates to run their own business and train apprentices themselves. The qualification level is often comparable to a bachelor degree at a university. About every fifth trainee in Germany gains this kind of qualification and therefore opens themselves up to career opportunities that are often only available to college graduates in other countries.

Every fifth subsequently completes a further training as a master craftsman.

Those who wish can apply for an access authorization for a university course after the vocational education and training (providing that they have not already completed their high school diploma). For this purpose, either the title of master craftsman, at least three years of career experience or attendance at a qualified school are required. In Germany, many college students have completed a vocational training before the start of their studies: in 2011, 17 percent of the first semester students had completed a vocational training. The number was even higher at universities of applied sciences: here it was almost every second student.

A vocational education and training is an alternative to university and at the same time offers access to an university programme. For this reason, it is also an important guarantee of the permeability of the German training system.

What is a title of master craftsman for?

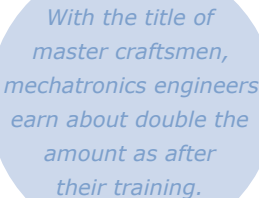
Graduates of the vocational education and training have the option to gain the so-called title of master craftsmen through further training – or depending on the vocational qualification, as a technician, business administrator or marketing expert. Participants must pass several tests in order to be able to prepare themselves in master training courses. In addition to in-depth specialist knowledge, knowledge in business administration, law and vocational education.

The qualification, which has demanding content, is recognized and protected by the state and awarded by the chambers. This ensures uniform, high quality standards nationwide. At the same time, it is often the condition for being able to run your own company and train apprentices yourself (see page 16). For this reason too, it is inseparable with vocational education and training, because it ensures the transmission of knowledge and experience: former trainees become master craftsmen, who train new trainees. At the same time,

the further training content in business administration and law promote the step towards independence. Many of the small and medium-size companies, making up the majority of the German economy were founded by master craftsmen.

Depending on the career, the preparation courses cost between €4000 (butcher and hairdresser) and €10,000 (electrician). The examination costs of the chambers are an additional approx. €750. The further training as a master is therefore relatively cost intensive and time-consuming, but at the same time enables more personal

responsibility and therefore a significantly higher income. In this way, it is a worthwhile investment. The state promotes further training as a master craftsman, for example by providing loans at particularly affordable conditions.



With the title of master craftsmen, mechatronics engineers earn about double the amount as after their training.

What does the state do?

The state mainly gives vocational education and training a legal framework via three channels: the Vocational Training Act, the Training Regulation and the framework teaching plan.

The Vocational Training Act establishes nationwide framework conditions for conducting the vocational training. Among other things, it regulates the obligations for trainees and trainers, the general conditions for companies in order to train, the recognition of training careers, the remuneration of trainees and the examination system. It guarantees quality standards and thereby promotes the nationwide (and international) acceptance of the qualifications.

The Training Regulation is the legal framework for the operational part of the training. It is individually designed for each training career and contains the career designation, the recognition by the state, the duration of the training, the skills and knowledge to be taught and the examination requirements. In addition, it determines a

training framework plan and therefore provides a time and professional structure of how the content must be taught during the training.

The framework teaching plan describes the obligatory learning goals and learning content for the vocational teaching in the vocational schools. Every training career has an individual framework teaching plan. Due to the different experiences and training levels the trainees have, the framework teaching plan is intentionally kept general and flexible. The content of the curriculum may therefore vary between states.

In order for the two parts of the training in the company and the vocational school to dovetail coherently in content and time, the organizers must work closely together. It is therefore important for the expertise of the companies and unions to be incorporated in the design of the framework. They are best able to estimate which learning content is necessary and which training goods must be reformed and which training careers must be recreated or eliminated (see also page 26).

Why are unions necessary in the vocational education and training system?

The Vocational Training Act specifies that employers, employees and the state set the framework conditions for the vocational education and training together. The unions take on several important functions here.

In collective negotiations, they establish guidelines for the training contracts with employer associations. Among other things, they agree on decisions on the amount of training remuneration, the number of holidays and the length of the trial period. The temporary employment of trainees after the training can also be a part of the collective negotiations (see also page 17).

In addition, unions can submit proposals for further and new development of training careers in the same way as companies, and are incorporated in the subsequent development process (see also page 26).

Also in the practical implication and quality assurance of the training in the company, unions make an important contribution by taking on an advisory function for the works councils. These monitor the training practice, are contact partners for young people, resolve conflicts and report on grievances.

Every trainee can be a member of a union. Their membership gives them automatic legal protection in work, training and social law, and they can be advised by their union. The monthly membership contribution amounts to 1 percent of the gross income.

The largest German unions are IG Metall with 2.3 million members and the Vereinte Dienstleistungsgewerkschaft Ver.di with 2.2 million members. In total, around 20 percent of Germans are unionized.

What do companies do in the vocational education and training system?


Companies play an essential role in the vocational education and training system. In accordance with their need, they provide training positions, pay the training salary and are responsible for teaching the practical training content in the companies. They assume the responsibility for their trainees to learn the qualifications defined in the Training Ordinance during the training, and to pass the final test at the end.

About a quarter of trainees are younger than 17 years old at the start of the training. The responsible trainer in the company therefore often takes on an educational function. For example, they require their trainees to visit the vocational school.

The provision of training positions is voluntary, at the same time trainees may only be trained in suitable training centers. In addition to sufficient equipment, training personnel that are particularly personally and

professionally qualified are also needed (see also page 16). Therefore at least one specialist working in the company must have gained a qualification in addition to one as trainer. The skills and knowledge necessary for this are defined by the state. The willingness of a company to train is motivated among other things by access to highly qualified junior staff after the training (see also page 30).

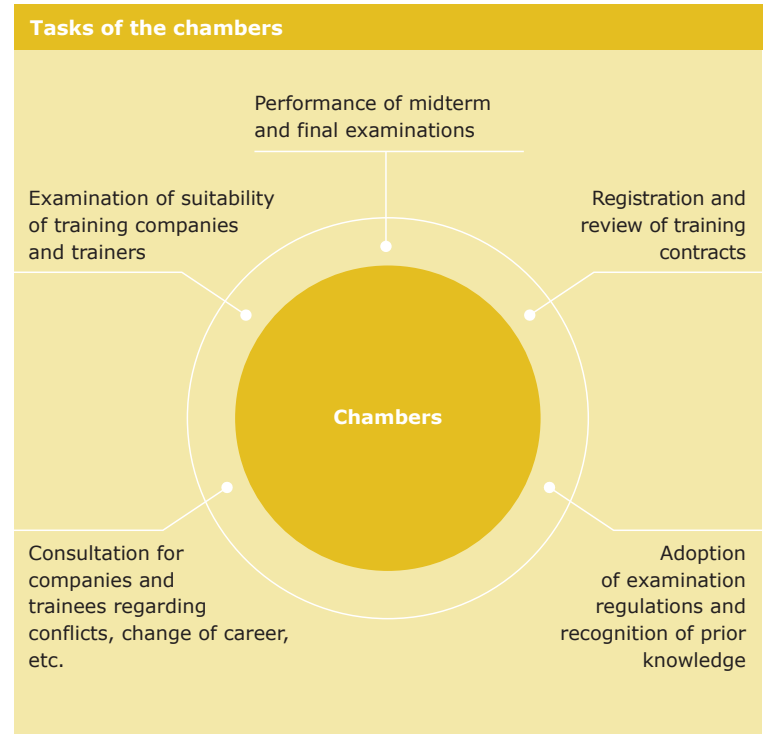
On average, one in every five companies in Germany is involved in training. About two thirds of trainees are trained in large and medium-sized companies. On the other hand, the involvement of small and very small companies in vocational education and training has been decreasing for years.



Two thirds of trainees are directly employed by their company.

How do the companies coordinate with each other?

All companies are organized into so-called chambers according to their sector or professional category. The membership is obligatory for every company or every freelancer. The chambers lobby on behalf of their members vis-à-vis the state. In the vocational education and training, they have an important organizational role. They advise, serve and monitor the company training, register the training relationships and conduct the examinations. In addition, they decide on and monitor the suitability of the training company and trainer. With the chambers, the companies independently ensure the quality of the training in the companies. There by a greater proximity to the practice is also ensured in the implementation of the vocational education and training.

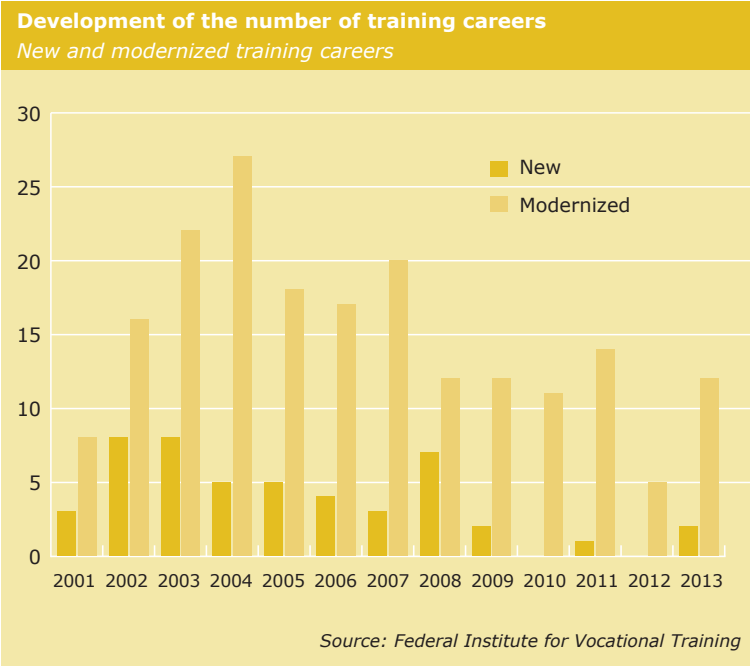


Who has a say in the introduction of new training careers?

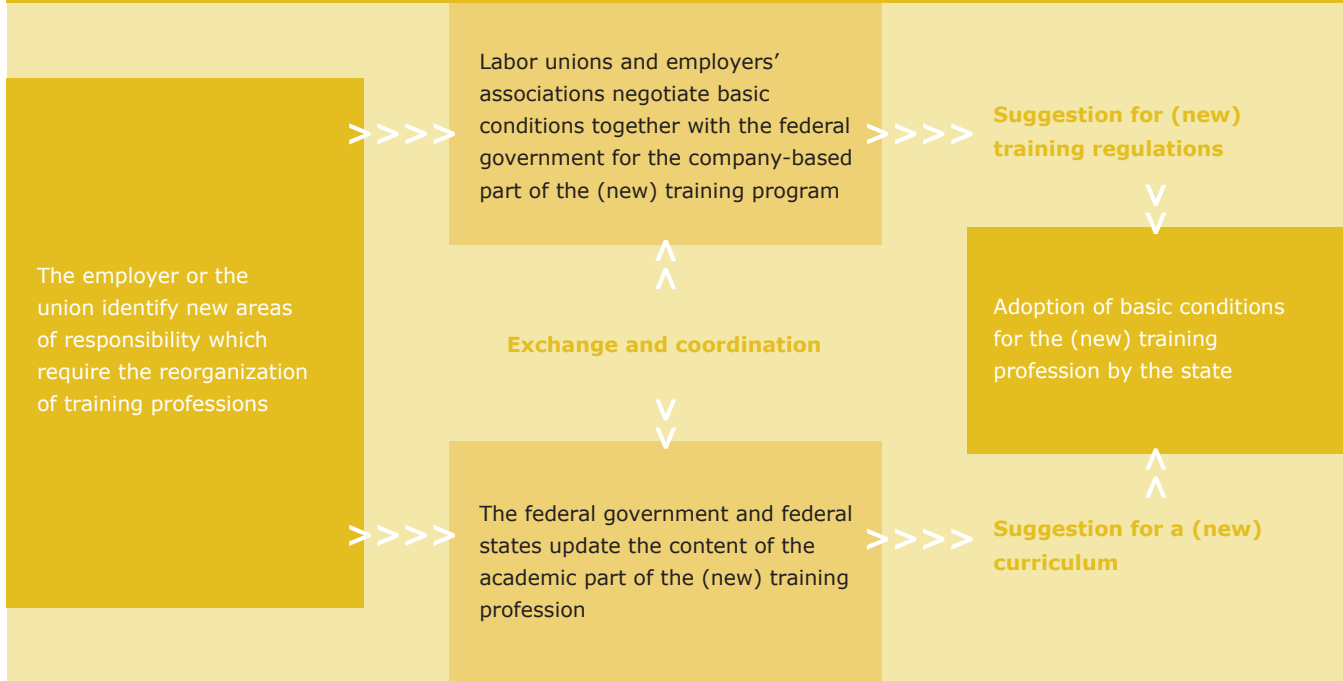
Every training career has an individual legal framework in the form of the Training Regulation and the framework teaching plan (see also page 22). This works through a fixed procedure, which ensures the incorporation of the implementing actors (companies, unions and vocational schools). If the training careers no longer meet the requirements of the job market, they can be reformed or removed using this procedure. At the same time, new careers can be created through this procedure.

The impulse for innovations generally comes from unions, professional associations or companies. A coordination committee with representatives of the states and the federal government decides on whether the procedure will be introduced. With a positive vote, state actors, representatives of the unions and the employers' associations develop the Training Regulation and the framework teaching plan. In principle, decisions take place in consensus.

194 training careers were reformed since 2001, 48 were newly created.



Procedures for coordinating the legal framework conditions

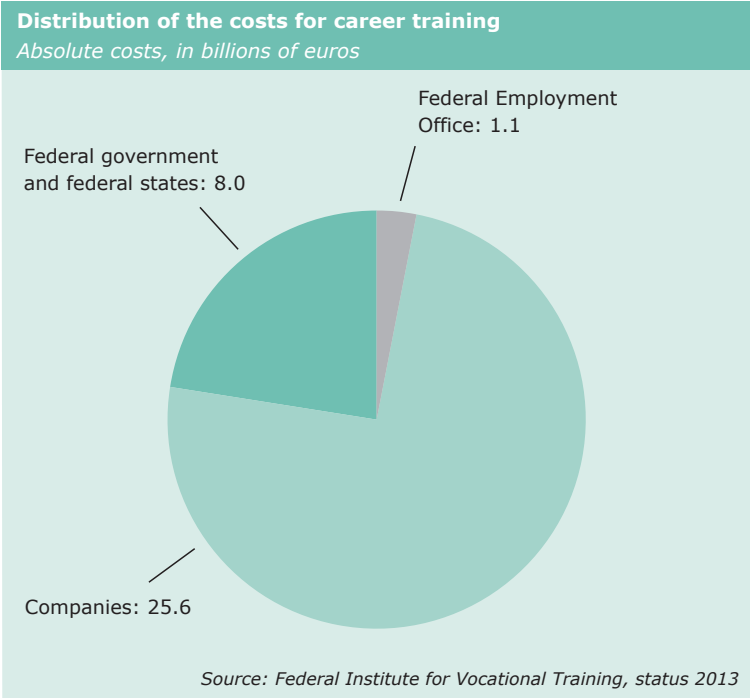


How is the vocational education and training system financed?

Similarly to the distribution of responsibilities with regard to organization and implementation, the costs of the vocational education and training are also distributed among the actors concerned (federal government, states and economy). About two thirds are provided by the economy, a quarter by the federal government and states and the rest by the Federal Employment Office.

The Federal Employment Office provides for the active and passive labor market policy in Germany. It is mainly financed by contributions from employees subject to insurance contributions. In addition, the Federal Employment Office they receives a state subsidy.

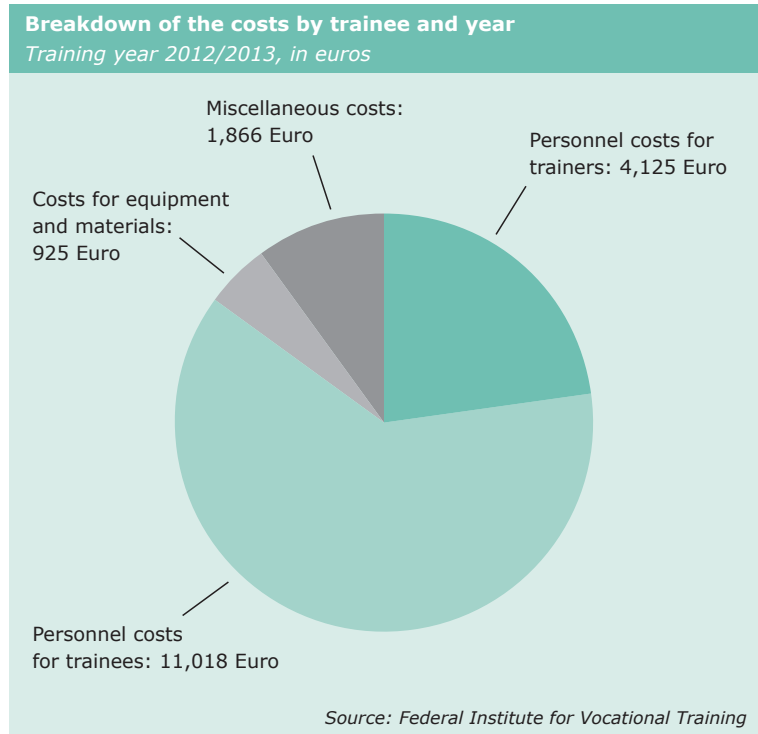
About 7 percent of the state training budget goes into vocational education and training.



What costs emerge for the companies?

The companies finance the practical part of the training. This includes the personal costs of the trainee, the cost for the workplace, the training workshop and the in-house training. But also indirect costs such as chamber fees must be added.

On average, a trainee costs a German company €17,933 per year. At about 62 percent, the training remuneration makes up the largest share of the cost. As the trainees work full-time in the company for 3 to 4 days, of course there are also profits that offset these costs. On average, a trainee generates €12,535 per year. The net costs are therefore significantly lower at €5,398 per year (2012/2013).



Why is it worthwhile for companies to train?

For the company, there are good reasons to invest in the vocational education and training system regarding despite the costs (see also page 29). A major advantage is their voice in the content of the training. As they can participate in the decision on the skills and knowledge that will be taught, the trained skilled employees meet their requirements and needs. As it is increasingly difficult for companies to recruit skilled employees with the desired profile on the external job market, securing the skilled employee base is a major reason for companies to train.

In addition, companies can improve their personnel selection through the vocational education and training. In the course of the 2 to 3 year training, they get to know their trainees very well and can better evaluate whether they will be suitable for the company and the team. This reduces the risk of a poor appointment. At the same time, they can save on the costs of personnel recruitment (and placement, selection interviews,

assessment center etc.) and time intensive processing if they employ their trainees into the workforce after the training.

Good training by the company also has a significant binding force. The young people feel part of the company and most would like to be employed there. This not only has a positive impact on their working motivation as later employees, but also increases their loyalty to the company. They often stay longer in the company, and the fluctuation of staff is reduced. This has positive effects on productivity.

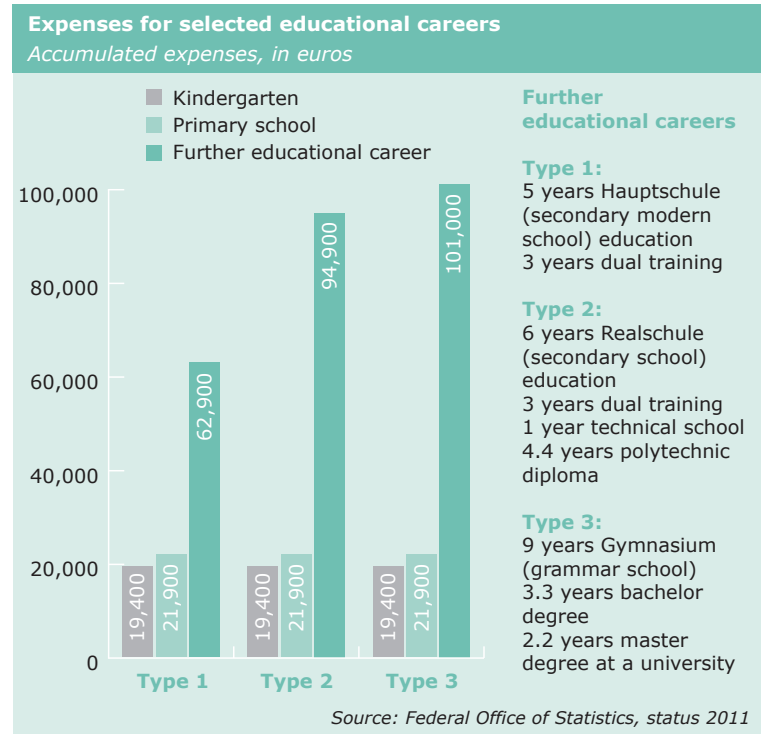
The demographic development in Germany poses the risk of an increasing lack of skilled employees (see also page 35). The vocational education and training system increases the benefits to the company and therefore also their willingness to provide sufficient training positions.

How expensive is vocational education and training for the state?

The federal government and states bear the costs of the vocational schools, which includes investments in addition to expenses for personnel, premises and teaching material. In addition, the federal government and states found a special training program during economically strained times (see also page 13 and 14).

The vocational education and training is relatively cheap for the state in comparison to other full-time school training systems such as the university system. The state spends about €2,700 per year per vocational student. In comparison, the yearly expenses per university student are significantly higher at about €8,200 (2011).

With \$ 10.3 billion per year, the state invests about 7 percent of the total education budget in the vocational education and training system.



What effect does vocational education and training have on youth unemployment?

The vocational education and training system makes a smooth transition from school into a career easier for young people. As the training careers are coordinated to the requirements of the company, it is ensured that the qualification of the graduate is also in demand on the job market.

School reports particularly document on the theoretical knowledge of the graduate. Young people usually cannot prove the ability to integrate themselves into the hierarchy of a company, work in a team and implement theoretical knowledge in practice. For this reason, companies often prefer applicants with job experience, whose suitability can be estimated better on the basis of employer references.

Vocational education and training can remove or at least reduce the barriers in the first job search. School leavers collect practical experience during the training, which can be recorded in employer references. In addition, a close contact between students and the economy is created through the company part of the training. For

young people, the transition between training and entering a career is made easier in this way. About two thirds are even employed directly by their training company.

In economic crises, the job market is particularly difficult for young people. If dismissals are necessary, companies first dismiss employees with a short length of service. At the same time, they do not recruit any new employees. Vocational education and training can reduce this risk. The comprehensive dismissal protection (see also page 17) of the trainees after the trial period prevents youth unemployment from immediately increasing in economic crises and a “generation without professional qualifications”. At 7.1 percent, Germany had the lowest youth unemployment rate in Europe in 2014 and lay far below and the EU average of 21.2 percent.

Unemployment has a particularly strong effect on the further course of an employment career and therefore usually leads to high subsequent costs. These subsequent costs can be reduced by the vocational education and training system, so it is a worthwhile system for the whole society.

Why do school leavers choose a vocational education and training?

For trainees, the vocational education and training system offers very good job market perspectives due to the high quality qualifications recognized by the state.

On average, two out of every three trainees are employed by the training company as soon as the training is completed. The hiring behavior of the company varies depending on the company size. With the size of a company, the need for new skilled employees also increases. This has a positive effect on the probability of hiring.

With an average of about €800 per month, the training compensation gives young people an early and high degree of financial independence. In comparison with higher education – resulting in high costs for students at first – the vocational education and training is an attractive alternative.

Very good development possibilities after vocational education and training open up a career route that may lead to higher salaries than a university course. The average annual salary of a master craftsman or technician is €42,000 and therefore about €8,000 over that of a journalist with a completed university degree and two years of work experience. The unemployment rates of master craftsmen/technicians and academics are almost identical at 2.9 and 3.0 percent for men and 3.7 and 4.0 percent for women.

At the same time, good earning opportunities reduce the risk to graduates of working in the low-income sector (less than two thirds of the median income). While 40.7 percent of the working population without vocational training work in the low-income sector, this is true with only 17.6 percent of those with a vocational education and training qualification. For graduates who subsequently complete a vocational training to the title of master craftsmen, the risk falls to 4.8 percent and is therefore at about the level of university graduates.

What influence does globalization have?

In the course of global economic relationships, knowledge of foreign languages and intercultural competences is an important competitive factor for many companies; foreign experience is increasingly a job requirement. In order to stay attractive for young people in the future, the vocational education and training system must become more international.

The Vocational Training Act (see also page 22) allows almost a quarter of the training to take place abroad. Achievements abroad can be credited to trainees in Germany. However, until now only 4 percent of trainees use this option. In comparison, a third of German students go abroad within the framework of their studies.

Obstacles include different training content and examination regulations and associated difficulties with the mutual recognition of professional qualifications. In addition, there is often a lack of sufficient knowledge

of foreign languages by the trainee. Currently, foreign languages only play a subordinate role in the Training Ordinance and the framework teaching plans.

In order to further promote the internationalization of the vocational education and training, different promotional programs were developed by the federal government and the European Union. In this way, the programme "Erasmus +" promotes cross-national overseas stays in the form of job experience, training periods and further development measures.

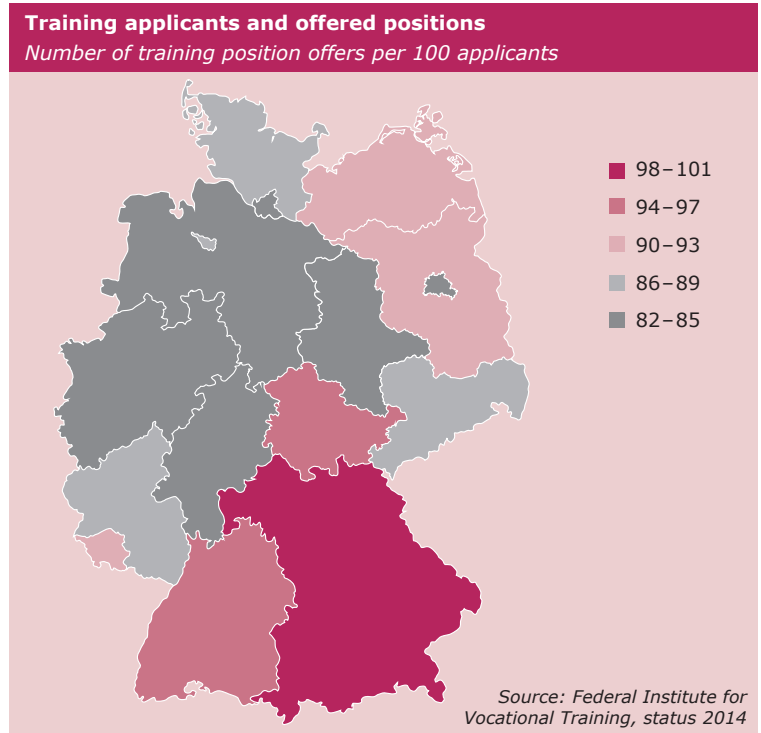
At the same time, a growing number of companies ensure a recognition of their trainee's achievements abroad through their own programs. In parallel, entire vocational training courses with an international focus have been introduced (for example training as a European secretary, as a European foreign language correspondent or European businessman).

What influence does the demographic change have?

A persistently low birth rate with a simultaneously increasing life expectancy leads to a declining and aging population. This so-called demographic change can also be noticed in the number of school leavers: it is forecasted to decline by almost 20 percent by 2025. The number of potential first-year trainees is therefore decreasing. But the number of training positions offered has also been declining since the reunification.

At the same time, both the number of open training positions and the number of unsuccessful applicants have increased. The reason for this is that the supply and demand of training positions vary widely both regionally and also between different training careers. For this reason, a successful search for training positions will also depend on the mobility of young people.

In the nationwide average in 2014, about 93 offered training positions were available for 100 applicants.



How do falling student numbers influence companies?

The reduction in the number of school leavers has a large impact on the market for training positions: in the past, companies could generally select the most suitable from a variety of applicants. Nowadays, training positions often remain unfilled because no suitable trainees can be found.

In order to combat this “lack” of training applicants, the federal government and the companies have started to systematically increase the pool of potential training applicants: on the one hand, by better integrating and promoting previously disadvantaged young people, for example weaker students or young people with a migration background. On the other hand, strong appeals are made to people who have not started a training course immediately after school. The proportion of trainees who are more than 24 years old at the start of training continues to increase: nowadays, they represent almost 10 percent of all first-year trainees. Young mothers and fathers are also increasing in importance as a new target group. In 2001, almost half of young mothers under 24 years of age and a third of young

fathers did not have a vocational qualification and were not in training. This should become easier for them through the offer of part-time training, the reconciliation of familial responsibilities and training.

This expansion of the target groups leads to an increasing heterogeneity of trainees. This brings new challenges to companies and vocational schools. They must take on a stronger educational function than before. This task is made more difficult by the increasing average age of trainees. In order to support the companies in this, the model of an “assisted training” is currently being tested. Companies are supported with trainees requiring assistance by professional pedagogical preparation and support by a third provider.

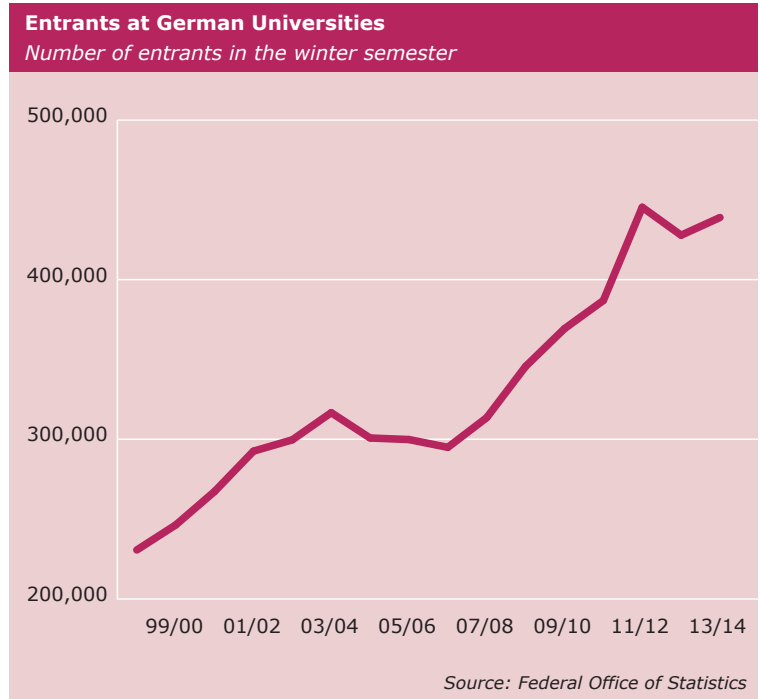
At the same time, the companies must continue to ensure high quality of the vocational education and training, despite greater differences in performance of trainees. This is the only way for vocational education and training to remain attractive for strong school leavers in the future.

How can vocational education and training and universities be linked?

In Germany, a trend towards university studies has been observed for a long time: despite a sinking number of school leavers, first-year student numbers in Germany continue to increase. The vocational education and training system increasingly competes with universities for school leavers.

Therefore in recent years, the attempt was made to dovetail the vocational education and training system better with the college system, in order to increase the permeability between both systems. On the one hand, initiatives have been started by the federal government, which should simplify entry into vocational education and training for school leavers. On the other hand, with the introduction of "dual degree programmes" (see page 38), the success factors of practical vocational education and training – close collaboration between companies and the educational facility – are increasingly being transferred to the University system.

In the last 15 years, the number of first-year students has almost doubled.



What is a dual degree programme?

A dual course is a university course with firmly integrated practice phases in a company. Learning takes place in two locations, in the same way as vocational education and training: theory is taught at the university, practice in the company. The learning content is therefore closely coordinated. While there are no formal access criteria for vocational education and training, students at dual degree programmes must have the university or university applied sciences qualification. In addition, they must find a training company in which to complete the practice phases. They sign a training contract with the company (see also page 17), which regulates the salary level among other things.

In principle, dual degree programmes offer two models for initial professional training. The dual degree programmes integrating the training combines a recognized vocational training with a university course. This study phase therefore replaces attendance at the vocational school, in which the student can achieve both a university degree and also a qualification in the respective training career in about four to four and a

half years. The practice integrated dual course is comprised of longer study phases at the University and practical blocks during semester breaks. This practice integrated form of the dual course lasts for about three to three and a half years and leads to a university degree – but no qualification in a training career. In addition, graduates of a vocational education and training or people interested in studies with several years of job experience have the option of a career integrated dual degree programme without the necessity of a university entrance qualification.

The dual degree programme combines a strong practical orientation with theoretical training level and therefore gives a response to the constantly increasing numbers of high school graduates. As an alternative to normal studies, this is increasingly in demand with students. High school graduates from nonacademic households opt for a dual degree programme particularly often.

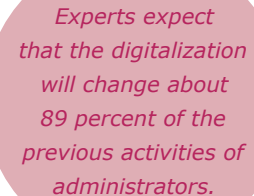
How do the requirements change through the digitalization?

Large areas of our life are increasingly becoming digitally recorded and saved: data is becoming the resource of the future. New business deals are being created, old ones are being reformed and made more efficient. Innovation cycles become faster and products are being coordinated more and more individually to fit customer demand. For this reason, completely new requirements are linked to the production process: flexibility and quick adaptability increase in importance.

The digital change in the economy changes the activity fields of many careers and brings about new job profiles. In this way, for example the careers of IT specialist, media designer, mechatronics engineer and systems electronics specialist have gained in importance. Other careers will continue to disappear from the scene. In order for vocational education and training to continue to be able to be the foundation for a stable occupational career, the competences taught in the training must be reconsidered and reformed.

Lifelong learning, interdisciplinary thinking and action, IT and media competence, but also skills in handling of machines and networked systems increase in importance. It must be assumed that they will be used in almost all careers in the future, teaching them must therefore be more strongly integrated into the training. In addition, training ordinances and framework plans must be reformed (see also page 22).

The adaptations of the vocational education and training to the digital age are only just beginning. Their consistent development will be decisive for the sustainability of the system.



Experts expect that the digitalization will change about 89 percent of the previous activities of administrators.

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For reasons of readability, no distinction has been made between male and female forms; all forms apply equally to both genders.



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