



Strengthening international exchange and cooperation with labor unions in America in the field of apprenticeship/vocational training

A case study on apprenticeship/vocational education and training in the US States of Wisconsin, New York and South Carolina

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Foreword

The Unions4VET project has been promoting international cooperation between labor unions in the field of vocational training since 2015. The aim of the project is to improve the quality of vocational training and to strengthen the role of trade unions in the governance of vocational training through the transnational exchange of knowledge, experience and good practice.

Since the beginning of the project, meetings, workshops, conferences and projects with partner labor unions from Costa Rica, Greece, Italy, Latvia, Portugal, Slovakia, and the USA have been organised. In the next three years, the international labor union network will be deepened and expanded to other partner countries.

The basis for cooperation with the partner labor unions is in each case an analysis of the vocational training policy situation and challenges in the partner countries from a labor union perspective. This report on the vocational education and training system in the USA is based on secondary analyses and numerous expert interviews with US vocational education and training stakeholders and was prepared in 2019.

The Unions4VET project is jointly coordinated by the Confederation of German Trade Unions (DGB) and bfiw - Unternehmen für Bildung and funded by the Federal Ministry of Education and Research (BMBF).

Further information is available at www.unions4vet.de

The author of the report is Hermann Nehls. He was responsible for the DGB's vocational training policy for more than ten years. He also spent three years as a counselor for social affairs at the German Embassy in Washington DC.

Results at a glance

- At the beginning of the 20th century, important foundations for apprenticeship/vocational education and training were laid in some US states, which are still influential today. Wisconsin and New York still have a tripartite system that brings together employers, labor unions and state authorities. South Carolina has no comparable tradition. Vocational training in this state is developed closely to the immediate needs of companies, without the involvement of the unions.
- The reputation of apprenticeship/vocational training in the USA is low. The education system is geared towards an academic career. Many students fail at community colleges. Vocational education is not sufficiently perceived as an alternative educational path that enables a career without debt. There are regionally recognized training centers and training structures that break this trend.
- US and German companies that have settled in the USA differ in their understanding of vocational training. While US companies see vocational training as an investment which does not pay off, German companies tend to see vocational training as important in order to obtain an adequate skilled workforce. German companies must be differentiated between long-established SMEs and larger, internationally operating companies. These usually have their own in-house training.
- Registration under the training programs of the Department of Labor and training agencies at the state level is considered to be un-American and bureaucratic by many US companies. States that, like South Carolina, offer full support are increasing their participation in training programs.
- Labor unions are a mainstay of vocational training in the USA. They pay attention to quality and enable employees to hold their own on the labor market in the long term. Labor unions are called upon to play an active role in the development of new sectors such as industrial manufacturing and health and care for vocational training.
- Training programs in the USA lack external evaluation. The evaluation of performance is left to the companies. This limits the validity and transferability of the certificates awarded internally.
- Cooperation between companies and the community and technical colleges in Wisconsin and New York could be improved. The coordination does not function systematically. Curricula should be developed in close cooperation between employers, unions and the community and technical colleges. This applies in particular to the updating of existing curricula.
- It is recommended that projects should be developed to strengthen vocational training. Proposals include an exchange program with the state of Wisconsin, the development of a modern occupational profile for the industrial sector in cooperation with U.S. unions organized at Siemens USA, as well as support for the establishment of vocational training structures in the health and care sector.

1. Introduction

The purpose of the case study commissioned here by Unions4VET is to explore possibilities for international exchange and cooperation with labor unions in the US to improve the quality of apprenticeship/vocational education and training. The Federal Government is currently developing country programmes for vocational training cooperation in Italy and the USA. The results presented here are intended to help the Federal Government in Germany to develop the program for cooperation with the United States in the area of vocational education and training.

The three US states of Wisconsin, New York and South Carolina were examined as examples in order to gain insights into current challenges in the area of apprenticeship/vocational education and training and to identify possible cooperation. The selection of these states was not random. Wisconsin has the longest tradition among the 50 US states in apprenticeship/vocational education and training and in New York there is a lot of training capacity especially in the construction sector. South Carolina is currently considered the model state in terms of vocational training, but it has one special feature: compared to other states, South Carolina is characterised by a particularly anti-union policy. Important German companies like BMW and Bosch have settled here and developed their own training programs. The federal programs to strengthen vocational training are implemented very differently in these states.

There is no coherent vocational training system in the USA. The vocational training paths are diverse. There are different forms of training, combinations of learning locations, curricula and didactic implementation depending on the industry, occupational field and size of the company. Legal bases, responsibilities, examinations and financing are also regulated differently in the individual federal states.

Overall, it is repeatedly pointed out that there is a lack of a national/coherent strategy in the USA that gives priority to training young people¹. Although the US programs have been successful in implementing training programs, they have generally been geared only to the needs of specific companies or sectors such as manufacturing. Despite support from the U.S. Department of Labor, training opportunities remained limited.

The U.S. government intends to implement comprehensive reforms in the area of vocational education and training. Qualification levels are to be raised and young people's access to the labor market improved. Vocational education and training is to be expanded from the traditional building and construction trades to other sectors such as health and care, technology and industry.

¹ US Needs National Apprenticeship Structure, <https://www.industryweek.com/talent/us-needs-national-apprenticeship-structure>

Current reform efforts in vocational education and training in the USA repeatedly refer to the dual vocational training system in Germany, which is considered the gold standard (Newman and Winston, 2016)². The players involved are aware that a one-to-one transfer of the German vocational training system is not possible. Nevertheless, the extent to which fundamental elements of the German VET system such as the interaction between the education and employment systems (initial training and labour market), the strong involvement of the social partners, the steering of the VET system, valid examination systems and the design of training content can form the basis for a reform of VET in the USA is being discussed.

Document analysis and expert interviews conducted between April 29 and May 18, 2019, with representatives of business, unions, government, educational institutions, and academia in the three states of Wisconsin, New York, and South Carolina are essential data sources for the study. In each of the three states, 8 interviews were conducted with vocational training stakeholders. The interview partners were selected in consultation with the Department of Workforce Development in Wisconsin, chambers of commerce abroad, company management and the umbrella organisations of the individual labor unions. Siemens has locations in all three states and was therefore included in the interviews.

The results show that there are great differences between the states. While unions in Wisconsin and New York are an important pillar of the call, they play no role in South Carolina. Other findings, such as the lack of awareness and reputation of vocational education and training among parents, unclear responsibilities and the lack of external quality reviews, are consistent with other studies conducted to date (see Lermann, R., 2018).

It is proposed to organize exchange programmes with stakeholders from the state of Wisconsin to improve the quality of vocational education and training, to develop innovative job profiles with Siemens trade unions and to support the further expansion of vocational training.

1.1 Reporting structure

The general economic, social and labor market policy context of the USA, the framework conditions for the reform of vocational education and training in the USA, is described in the section 3. Section 4 provides an overview of the status of US unions and their role in vocational education and training. Section 5 explains vocational education and training in the US and its regulatory basis. Section 6 contains socioeconomic contexts for the three states under study: Wisconsin, New York, and South Carolina. The most important topics for which cooperation appears to be useful are described in section 7.

² Newman S. K., Winston, H. (2016); Reskilling America: learning to labor in the twenty-first century, New York

2. Socio-economic framework conditions

The US economy is currently being attested stability and recovery. The financial crisis of 2008-2009 hit the labor market hard, with the unemployment rate rising to 10 percent. This looks different now: In June 2019, the unemployment rate was 3.7 percent and the number of unemployed was 6 million³. However, in order to assess the US labour market, other indicators such as hidden reserves (hidden unemployment) and people working part-time for economic reasons (so-called "underemployed") must be taken into account in addition to the unemployment rate. The unemployment rate has fallen mainly because the labor force has shrunk and the employment rate has continued to decline over the same period. Currently, the percentage of Americans of working age who are participating or seeking employment is 62.9 percent - despite the upswing.

A breakdown of the official unemployment rate shows that two groups are particularly affected: Young people (between 16 and 19 years of age) are over-represented at 12.7 percent and the unemployment rate among ethnic minorities such as Afro-Americans (6.0 percent) is clearly higher than average. In 2018, 79.14 percent of the workforce in the US were employed in the service sector, 19.44 percent in industry and 1.42 percent in agriculture.

In terms of social policy, the USA is in a critical situation. Inequality of wealth and income, and thus the gap between rich and poor, has widened even further since the financial and economic crisis. Income inequality in the USA is higher than in other developed economies. Cross-country comparisons of income inequality are often based on the Gini coefficient, a widely used measure of inequality. The Gini coefficient in the US was 0.391⁴ in 2016 (based on gross income and on a scale of 0 to 1), according to the Organisation for Economic Cooperation and Development (OECD). This was the highest value among the G-7 countries. The inequality goes hand in hand with varying access to education. Children from wealthier families have even better access to social capital today. In comparison, the starting conditions for children from poor families have deteriorated significantly since the 1950s. The 'American Dream' is in crisis. The Census Bureau⁵ has calculated that in 2017 the official poverty rate was 12.3 percent (39.7 million). Poverty is a much more likely fate for African-Americans and Latinos in the United States than for other population groups.

A particular problem is the aging of the workforce, which is accompanied by a decline in manufacturing jobs. Between 2000 and 2016, the proportion of older people (over 55 years of age) active in the manufacturing industry rose from 13 to 27 percent in California, for example. In Indiana, the number of over-55 rose from 13 to 24 percent of manufacturing jobs. Over the same period, manufacturing jobs in California fell by 36 percent and in Indiana by 24 percent⁶.

³ Bureau of labor statistics: <https://www.bls.gov/news.release/empst.nr0.htm>

⁴ OECD: <http://www.oecd.org/economy/united-states-economic-snapshot/>

⁵ U. S. States Census Bureau (2017): <https://www.census.gov/data/software.html>

⁶ U.S. Bureau of the Census, 2017

Labor productivity in the USA is growing only very slowly. Since 2000, production per worker has increased by less than 2 percent per year. Over the last five years, productivity growth has averaged less than 1 percent per year, even in manufacturing. At the same time, unemployment figures in the USA have fallen sharply⁷.

Against the backdrop of globalization and digitization, U.S. companies are demanding a workforce with more literacy, numeracy, social and problem-solving skills. Surveys of companies have shown that the USA does not have a sufficient supply of qualified workers to promote economic growth. Policy makers are therefore called upon to create conditions that encourage citizens to prepare for technically oriented skilled jobs.

3. Labor unions

According to the Bureau of Labor Statistics⁸, there were 14.7 million labor union members at the end of 2018, or 10.5 percent of all employees. The number of trade union members has thus fallen by almost 10 per cent since 1983 (20.1 per cent).

FIGURE I

As union membership declines, income inequality rises

Union membership and share of income going to the top 10%, 1917–2015

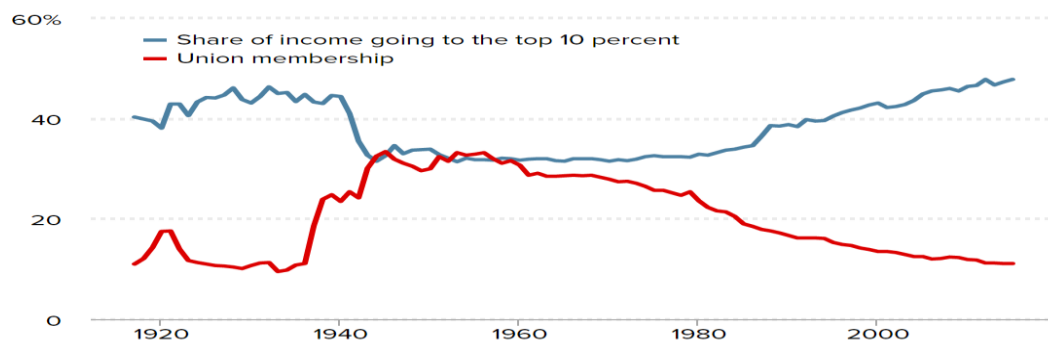


Chart Data

Sources: Data on union density follows the composite series found in Historical Statistics of the United States; updated to 2015 from unionstats.com. Income inequality (share of income to top 10 percent) data are from Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States, 1913–1998," Quarterly Journal of Economics vol. 118, no. 1 (2003) and updated data from the Top Income Database, updated June 2016.

Economic Policy Institute

⁷ Sprague, S. (2017). Below trend: The U.S. productivity slowdown since the Great Recession. *Beyond the Numbers*, 6(2). Washington, DC: Bureau of Labor Statistics.

⁸ Bureau of labor statistics (Januar 2019); <https://www.bls.gov/news.release/union2.nr0.htm>

Trade union membership in 2018 will vary widely, depending on the industry and state. Most striking is the difference between the public and private sectors. While 33.9 percent of public sector employees are members of a labor union, this applies to only 6.4 percent in the private sector. In absolute figures, 7.2 million public servants are unionized and only 7.6 million in the private sector - although the number of employees there is about five times as high. North and South Carolina had the lowest unionization rate at 2.7 percent, Hawaii (23.1 percent) and New York (22.3 percent) the highest. According to the Department of Labor, the median full-time earnings of a unionized worker in 2018 was USD 1051 per week (2013: USD 950), compared to USD 860 (2013: USD 750) for non-unionized workers.

Collective bargaining that covers an entire industry is not common in the US. Even collective bargaining in very small "bargaining units" (e.g. individual branches of a supermarket chain) is a complicated and often lengthy process.

In the USA there is no dual system of employee representation in the division of labour between works council and union as in Germany; only the unions negotiate working conditions on the individual factory floor or in the individual office. Some US unions exist only at the plant level. At company level, shop stewards are elected by the union assembly. They are considered to represent the unions. In the USA, non-unionized people cannot stand for election.

The main units of union activity in the USA are the locals. They collect fees from members and often carry out the central tasks of a union: Wage negotiations, grievance procedures and publicity campaigns. Locals can operate autonomously, but most join the major national unions. Originally, these were organised along the lines of the industrial and professional union. Nowadays, however, almost all the large unions are organised on a cross-professional and cross-industry basis. Unlike in Germany, the conclusion of regional collective agreements is rare. The most typical form of collective agreement is the company collective agreement. It is negotiated by the local associations with a company and applies to all or a part of the workforce, usually defined by the activity.

US unions are an important player in vocational training in the US, particularly in the construction industry. In this sector, unions can use collective agreements to control access to the profession and thus to the skilled labor market. In other sectors, especially in industrial manufacturing, vocational training has not been the focus of union activity to date. Against the background of declining membership and weakening influence, US unions are looking for new opportunities for trade union involvement.

4. Apprenticeship/vocational training in the USA

4.1 Vocational training in college

The most important institutions in the USA offering technical and vocational training (usually two-year courses) are community colleges and technical colleges. They are the responsible institutions of the states with a variety of different programs. As an academic approach to career-oriented skills development, they are funded with large grants and charge only low tuition fees. They offer basic vocational training for high school graduates⁹ as well as training and continuing education programs for adults, and focus on teaching technical theory. Practical vocational training courses are usually not provided for, or not systematically. Companies complain that the standard of training is usually too low and often not relevant to practice.

In 2018, approximately 5.5 million students attended a community college. For many US Americans, they are the linchpin for gaining access to the job market with qualified jobs. But the success is evaluated very critically: Data from the National Center on Education¹⁰ show that only 13 percent of community college students graduate after two years. The college system in the USA is characterized by broad access but by a low graduation rate¹¹.

4.2 Vocational training in companies (apprenticeship programs)

There are no national or federal standards or a uniform definition for vocational training ("apprenticeship"). The term "apprenticeship" is used in many different and confusing ways. There are both time-based models and competence-based programmes that are offered within or outside the company. Against the background of the lack of industry-wide recognised standards for vocational in-company training, many short-term programs are called "apprenticeship", but are more similar to internships or cooperation programs (coop programs).

As a rule, US companies provide training on their own, i.e. without government support. In order to promote quality and transparency in vocational training, the Department of Labor (Office of Apprenticeship) and State Apprenticeship Agencies (SAA) encourage employers, unions or other institutions to develop training programs and provide training based on minimum standards such as a training plan, 12 months duration of training and payment of a training allowance.

⁹ In Germany an US-American High School Diploma is generally recognized as a middle school leaving certificate (Realschulabschluss) or, in combination with additional examinations, as Abitur (general university entrance qualification).

¹⁰ National Center on Education and the Economy: <http://ncee.org/2013/05/statistic-of-the-month-comparing-community-college-completion-rates/>

¹¹ Newman, K.S. & Winston, H. (2016). Reskilling America, Metropolitan Books.

Vocational training providers can register with the Department of Labor or, at the state level, with the SAA. In 2018, a total of 585,000 trainees¹² were registered in 23,400 recognized programs with 162 million workers. The majority, 166,626, were in the construction sector and 98,435 in the military. The next largest group is in the industrial sector (15,630 people). The training places registered with the DoL Office and the SAAs of the states account for only 0.36 percent¹³ of the working population. Nevertheless, the number of registered trainees can be seen as an indicator for the development of a vocational training system in the USA¹⁴.

Number of trainees registered in training programs :

National Registered Apprenticeship Results

Fiscal Year	Active Apprentices	New Apprentices	Total Completers	Active Programs	New Programs
2008	442,386	132,782	51,386	24,285	1,525
2009	420,140	110,707	50,493	26,622	1,456
2010	387,720	109,989	51,212	25,961	1,807
2011	357,692	130,391	55,178	24,967	1,409
2012	362,123	147,487	59,783	21,279	1,750
2013	375,425	164,746	52,542	19,431	1,540
2014	410,375	170,544	44,417	19,260	1,623
2015	447,929	197,535	52,717	20,910	1,898
2016	505,371	206,020	49,354	21,339	1,701
2017	533,607	191,563	64,021	22,488	2,369
2018	585,026	238,549	71,789	23,441	3,229

Joint Apprentice Committees (JACs), in which employers and trade unions are represented, exist mainly for training programs in the construction industry. Employers and labor unions play a central role in this area in financing training and selecting the appropriate training. One of the largest training centres of this kind is "local 3, IBEW"¹⁵, which is located in New York.¹⁶

¹² This figure includes the United Services Military Apprenticeship Program (USMAP), 2018 98,500 trainees.

¹³ <https://www.statista.com/statistics/191750/civilian-labor-force-in-the-us-since-1990>;
https://www.doleta.gov/oa/data_statistics.cfm und eigene Berechnung.

¹⁴ Active apprentices: Total number of apprentices; New Apprentices: Newly registered trainees; Trainees who have successfully completed an examination; Active programs: Total number of training programs; New Programs: Newly registered programs.

¹⁵ International Brotherhood of Electrical Workers

¹⁶ Local 3: <https://www.local3ibew.org/>

5. Regulatory framework

5.1 Legal basis

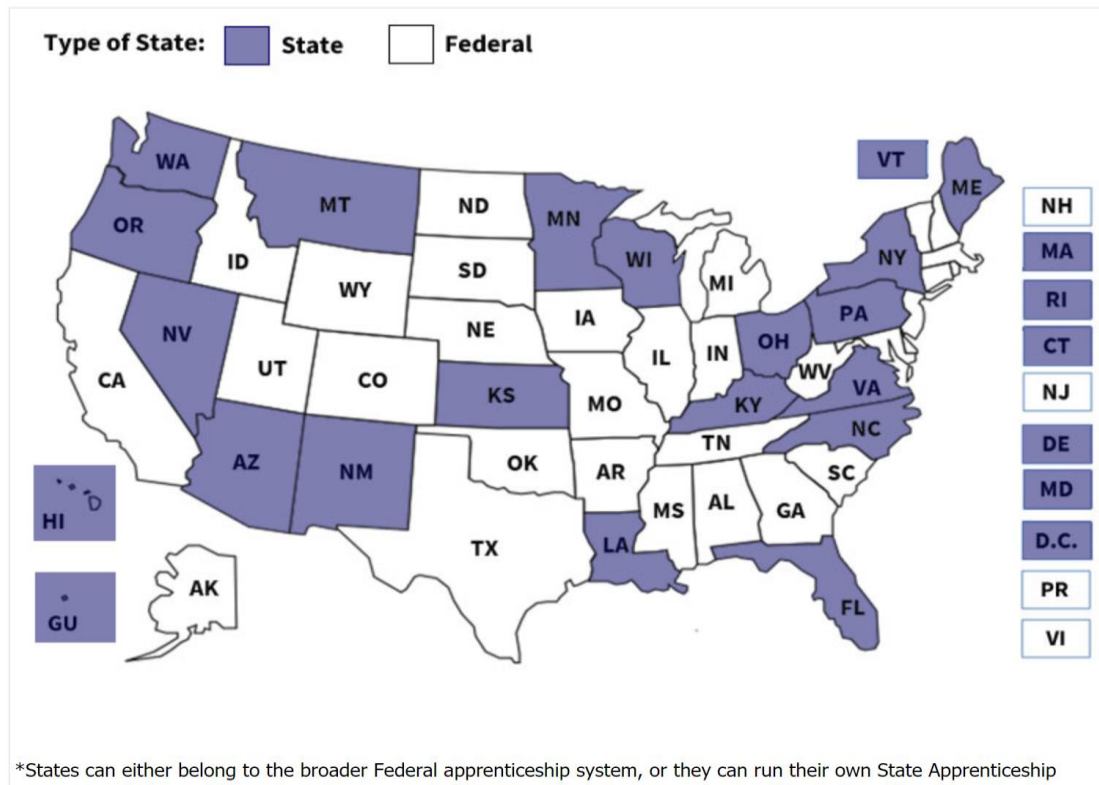
In 1937, the US Congress passed the National Apprenticeship Act (also known as the Fitzgerald Act)¹⁷, the principles of which are still valid today. The Act empowers the U.S. Department of Labor to "formulate and promote the promotion of labor standards necessary to protect the welfare of apprentices, to extend the application of those standards by encouraging their inclusion in apprenticeship contracts, to bring employers and employees together in the formulation of apprenticeship programs, to cooperate with government agencies involved in the formulation and promotion of apprenticeship standards, and to cooperate with the Department of Education in the Department of Health, Education and Welfare." In addition, the Secretary of Labor is empowered to "publish information on existing and proposed labour standards for apprenticeship" and "appoint national advisory committees".

A training program that is eligible for approval and registration by a registration agency must meet certain standards. For example, the program must have an organized written plan (program standards) that contains the working, training and supervisory conditions for one or more trainees in an apprenticeship occupation and is signed by a "sponsor" who undertakes to implement the training program and to meet the required standards. A distinction is made between a time-based approach (at least 2,000 hours), the competence-based approach or a mixture of time-based and competence-based approaches (hybrid approach). The competence-based approach measures the acquisition of skills through the successful demonstration of the acquired skills and knowledge by the individual trainee, which is verified by the program sponsor. Upon completion of training, a trainee receives a certificate that is acknowledged throughout the industry.

In 2008, the U.S. Department of Labor adopted new regulations for the training system¹⁸. Since then, federal states have been allowed to set up training agencies and carry out the registration process. The prerequisite is that the state has passed a state training law that meets the requirements of the National Apprenticeship Act. Currently, 26 states have set up state training agencies with a State Apprenticeship Advisory Committee consisting of representatives of employers, employee organizations and other public members. In all other states, the program is managed by the Federal Government.

¹⁷ Labor standards for the registration of apprenticeship programs, <https://www.ecfr.gov/cgi-bin>

¹⁸ Department of labor: <https://doleta.gov/OA/pdf/FinalRule29CFRPart29.pdf>



A separate component of the registered training programs is the United Services Military Apprenticeship Programme (USMAP). Through this program, the U.S. Coast Guard, Marine Corps and Navy have become program sponsors of registered training programs in nearly 100 professions.

5.2 The Registered Apprenticeship Program of the Department of Labor

The Department of Labor (DoL) has set up a "Registered Apprenticeship Program" (RAP)¹⁹ in order to increase the number of training places available. Companies are to be motivated by financial incentives for training and to meet minimum standards for in-company training programmes. From the point of view of the DoL, the program can be seen as a milestone in the development of a coherent training system in the USA. The first regulations for conditioned apprenticeship training can be found in the Apprenticeship Act passed in Wisconsin in 1911, which was strongly oriented towards German vocational training.

Companies and labor unions are to be encouraged to register with the DoL Office of Apprenticeship or, in 26 US states, with the Department of Labor as part of the RAP programs.

¹⁹ <https://www.dol.gov/apprenticeship>

In doing so, they commit themselves to adhere to defined standards such as a minimum training period of 12 months and the payment of a training allowance.

The federal budget allocates approximately USD 30 million annually to the Office of Apprenticeship (OA) to monitor the registration process, collect information on trainees and issue certificates. The funding of the DoL's training programmes is only a small part of the overall budget. The total budget for the fiscal year 2019 is USD 9.4 billion, of which the training programs account for a total of USD 200 million.

It is repeatedly pointed out that the authorities supervising the training system at the federal and state level are understaffed. In some states, only one or two people are responsible for implementing the training programs. Enterprises that provide training usually have to bear not only the cost of on-the-job training but also the cost of the corresponding schooling. Some states offer small tax credits or use federal funds for other workforce development programs, such as those funded under the Workforce Innovation and Opportunity Act (WIOA), to help fund training²⁰.

The Obama administration had promoted career-oriented education and training by expanding community colleges for years. In the years 2014 to 2016, the RAP was better funded. The goal was to double the number of trainees registered in 2013 (then 375,000) within five years.

The new approval of the Workforce Innovation and Opportunity Act 2014²¹ included an emphasis on sectoral strategies. Local government, employers, labor unions, community colleges and local organisations are to work together in a working group to promote training and skills and regional economic development through partnerships.

To promote vocational training in occupations outside the construction industry, the U.S. Department of Labor began promoting public-private partnership projects in late 2015 as part of the American Apprenticeship Initiative (AAI).

The Trump government has continued this policy and raised the target once again: The aim is to create a total of five million apprenticeships in the US. The President signed an Executive Order²² in 2017, which includes an "Industry-Recognized Apprenticeships" with lower standards compared to the RAP. The success of the Executive Order is critically evaluated by experts; the program would hardly have created any new training places²³.

²⁰ see Future of manufacturing United States: Policy developments on apprenticeship, Author: Robert I. Lerman (Urban Institute, Washington D.C), Eurofound reference number: WPFOMEEF18025 Eurofound.

²¹ Workforce Innovation and Opportunity Act (2014): <https://www.doleta.gov/WIOA/Docs/Final-Rules-An-Overview-Fact-Sheet.pdf>

²² Presidential Executive Order Expanding Apprenticeships in America (2017), <https://www.whitehouse.gov/presidential-actions/3245/>

²³ Politico, (June, 20th 2019), <https://www.politico.com/story/2019/06/20/trump-apprentice-program-1373205>

6. Information on the States Wisconsin, New York, and South Carolina

6.1 Wisconsin

In 2017 Wisconsin had a population of 5.8 million people, 2.86 million of whom were employed. The average age was 39.5 years and the average household income per year was USD 59,305. The population of Wisconsin is 81.2 percent white, 6.86 percent Hispanic and 6.25 percent African-American. Historically, there are close ties between Germany and Wisconsin. Almost half of the inhabitants are descended from German immigrants.



The main occupation is agriculture. At the same time, Wisconsin has a strong industrial base. Harley-Davidson has its headquarters in Milwaukee. In 2018, only 8.1 percent of employees were union members, compared to 20.9 percent in 1989. Since 2015 Wisconsin has been one of the so-called Right-to-Work States²⁴, with union membership below the US average.

Wisconsin is considered one of the 50 US states to be exemplary in vocational training. It has its own law on vocational training. The Wisconsin Apprenticeship Advisory Council consists of 20 members, with equal representation of employers and unions, and is chaired jointly by a representative of the employers and unions. The council also includes representatives from the education sector and public members. The Board advises the Department of Workforce Development on matters related to vocational education and training in Wisconsin, including the introduction of laws, rules and standards.

The work of the Department of Workforce Development is supported by the Department of Labor with a grant of USD 5 million over the period 2015 to 2020. The grant will support 1,000 new apprentices in 12 professions in the advanced manufacturing, healthcare and information technology sectors.

²⁴ Right-to-Work laws prohibit labor unions from negotiating collective agreements that include demanding contributions from non-union members

6.2 New York

In 2010, New York State, the third largest U.S. state, had a population of 19.3 million, the number of working people in 2016 was 9.1 million. The average age is 38 years, the population of New York is 57.2 percent white, 18.4 percent Hispanic, 17.5 percent African-American and 8.2 percent Asian.



Industry plays a major role in the medium-sized cities (Buffalo, Rochester, Albany). The most important industrial branches are mechanical engineering, vehicle construction and electrical engineering. In New York City, the service sector is by far the most important economic sector. Compared to other US states, New York has the highest number of union members at 22.3 percent.

New York, like Wisconsin, has a law on vocational training²⁵. On the basis of this law, the New York State Department of Labor (NYSDOL) is providing a Department of Labor grant of up to USD 3.7 million as part of the program to promote vocational training. The aim is to expand training in Registered Apprenticeship (RA), with a focus on disadvantaged population groups. As in Wisconsin, vocational training is to be promoted particularly in the areas of advanced manufacturing, healthcare and information technology.

The New York Training Council consists of three representatives of the labor unions, three of the employers, one representative of the public sector (public sector) and the chairman, who is appointed by the governor as the representative of the government for three years. Traditionally, the building & construction trades, which are represented on the Training Council through IBEW, account for the largest share of vocational training in numerical terms.

²⁵ New York State consolidated Laws, labor: <https://labor.ny.gov/formsdocs/app/NYSCLArticle23.pdf>

6.3 South Carolina

In 2017, South Carolina had a population of 5 million people and an active population of 2.2 million. The population of South Carolina is 63.6 percent white, 26.8 percent African-American and 5.69 percent Hispanic.



South Carolina's economy has experienced an upward trend in recent years, attracting a high and growing percentage of foreign investors, including large German companies such as BMW and Siemens. More than 80 percent of jobs are in the service sector. South Carolina has been a right-to-work state since 1954 and is considered one of the most anti-

union states in the USA. South Carolina has the lowest rate of union membership at 2.6 percent.

Unlike Wisconsin and New York, South Carolina does not have a law on vocational training. Thus, the Department of Labor (federal) is formally responsible for vocational training in South Carolina. Apprenticeship Carolina, a division of the Technical Colleges, founded on the initiative of the Chambers of Commerce and Industry, provides employers with free information and technical support for registered training programs. Like Wisconsin, South Carolina has also received a USD 5 million grant in 2015 to expand vocational training. In 2016, the grant was increased by a further USD 900,000.

6.4 Training ratio

The education rates²⁶ of the examined states Wisconsin, New York and South Carolina vary considerably. South Carolina has the highest training rate of 0.9 percent, which is far above the US average of 0.36 percent. At 0.38 percent, Wisconsin is slightly above the US average, while New York is far below at 0.2 percent. Compared to Germany, these education rates are very low. In 2018, Germany had 1,330,764 trainees and a working population of 44.8 million, which means a training rate of 3 percent. If only those employees subject to social insurance contributions in 2018 (32.87 million) are taken as a basis, the training rate is 4 percent. However, the comparison is misleading because training in the USA is based on a training period of only 12 months, whereas in Germany it is usually three years, which means that the degree to which vocational competence is acquired varies greatly.

²⁶ Number of trainees in relation to the total number of all employees.

2018	Total number of apprentices	Total number of apprenticeship programs	Employees In Mio.	Training ratio In Percent
Wisconsin	11.124	1020	2,9	0,38
New York	18.337	790	9,1	0,2
South Carolina ²⁷	20.763	1054	2,2	0,9
All states	585.026	23.441	162	0,36

Quelle: doleta.gov/OA/data/statistics.cfm and calculation on my own

7. Particularities and challenges of vocational education and training in the USA

7.1 The importance of historical roots

The roots of vocational training in the USA go back to the 19th century. Immigrants from Germany in particular contributed to the fact that the first structures of vocational training in the business sector gained a foothold in the USA. The interview partners answered the question of why Wisconsin is repeatedly cited as a model state for vocational training in the USA with a reference to its historical roots: "It's primarily historical".

The regulations for vocational training in Wisconsin go back to the "apprenticeship law"²⁸ passed in 1911, which can be regarded as the high point of the development of a vocational training system at that time. The purpose of the law was to create a framework for vocational training in order to maintain a sufficient number of qualified workers in Wisconsin and to secure the rights of workers, especially with regard to occupational safety. Vocational training in Germany served as a model. The framework also included cooperation between the Wisconsin state authorities, employers and unions.²⁹ To this day State Apprenticeship Advisory Committees set standards for apprenticeships in Wisconsin, including curricula.

²⁷ ApprenticeshipCarolina calculates the number of apprentices in South Carolina in August 2019 up to 31.882 in 1013 apprenticeship programs.

²⁸ United States Department of Labor, Apprenticeship; <https://www.doleta.gov/OA/history.cfm>

²⁹ On the occasion of the research for an exhibition on the 100th anniversary of the "apprenticeship law" in Wisconsin, an apprenticeship contract was found that was co-signed by employers and unions under the guidance of the State of Wisconsin.

New York had already passed a law in 1871 according to which all contracts with apprentices had to be drawn up in writing and the obligations of the employer and the apprentice had to be specified³⁰. To this day, high quality vocational training is mainly to be found in the construction and electrical trades. "local 3" in New York is one of the most prominent examples.

In South Carolina such historical roots could not be found. In the discussions it was made clear that it was above all the Chamber of Commerce that gave the decisive impetus for the development of training structures such as 'Apprenticeship Carolina'³¹. German companies like BMW, Siemens and Bosch Rexroth play an important role in South Carolina. These companies are very familiar with the dual training system in Germany and use many elements such as training regulations in the US context. A major difference to the vocational training system in Germany is that labor unions are not involved and the training does not end with an examination by an independent examination board. The examinations are conducted internally.

7.2 Perception / Awareness of the vocational training

Vocational training plays hardly any role in public perception. A human resources manager of a large industrial company in Wisconsin formulated this very clearly. No matter how many training programs you set up, the truth for the industrial sector is that nobody really knows these programs. Above all, she said, there was "no mechanism to get to the students, to the parents, to the schools. Training programs do not have a good reputation, they do not have any recognition, there is no desire on the part of students or young people to participate in these programs. They do not even know about them, not even a rejection, just nothing. And it frustrates me to talk about new programs because there is so much already, but it doesn't work".

There is a great deal of mistrust, especially among parents, as to whether in-company vocational training offers children good prospects. "The trades are not the glamorous career" - craftsmanship is not the glamorous career. Parents do not want their children to become pipe fitters. This understanding seems to be deeply rooted in the US society. It is therefore not surprising that the education system is geared towards achieving an academic degree.

A German company in Wisconsin, which offers high-quality vocational training, reported that it is very difficult to find qualified workers. Parents are often an obstacle. They want their children to earn money quickly, training takes too long. In many cases, vocational training is not known at all in US schools. Finding suitable trainees is the most difficult part for the company.

³⁰ Münch, J., u.a. (1989), Berufsbildung und Bildung in den USA, Bedingungen, Strukturen, Entwicklungen und Probleme, Berlin.

³¹ Apprenticeship Carolina; <https://www.apprenticeshipcarolina.com>

The situation is quite different for the training center of the union International Brotherhood of Electrical Workers (IBEW), local 3, in New York. Every year, up to 300 new training positions are filled. The number of applications is 10,000, and getting a training place at this institution is often described as harder than getting a place at Harvard. Whoever has completed an apprenticeship here can be sure that he or she will get a well-paid job afterwards.

7.3 Differences between German and US companies

The question to interviewees whether and what differences they see between German and US American companies was repeatedly answered by pointing out different corporate philosophies. German companies tend to plan for the long term, while US companies predominantly pursue short-term goals. Most US companies are forced to present quarterly profit and loss statements to shareholders, so there would be no room for investments in training.

At the same time, it is pointed out that German companies in the USA have to be distinguished according to their size and the length of time they have been established in the USA. SMEs have often been in the US for more than 30 years and would have adapted very well. As a rule, these companies do not train apprentices. They see training, like US companies, as an investment they do not want to make. Larger companies such as BMW, Siemens, Triumph and Stihl see it differently. They are dependent on qualified specialists and are prepared to provide resources for them. These companies invest specifically in training, because they are dissatisfied with the previous knowledge that young high school graduates bring with them.

In addition, a German company in Wisconsin made a simple calculation: to qualify unskilled workers costs about 200,000 USD, and a business training course costs about 63,000 USD for two years. "You should look on the long run", you have to think long term. Another interviewee from Wisconsin pointed out that US companies are often not able to cover a complete training program. Smaller companies, in particular, do not cooperate in an alliance because they are afraid of losing workers to larger companies.

A large US technology company, which is currently setting up a 12-month training program, gave a very pragmatic reason for participating in the training program in an interview: Training would be the most cost effective solution a company can find. Low salaries are paid and one would be very flexible with regard to the training content - "we liked that very much".

Apprenticeship Carolina sees German companies as a good basis for setting up training programs. In contrast to US companies, these companies have a much better understanding of training and it is easier to convince them of the benefits of training.

In this context, the "Industry Consortium for Advanced Technical Training" (ICATT)³², a training program of the German Chamber of Commerce (AHK) in Midwest for German and US companies, deserves special mention. It manages, promotes and supervises high-quality training programs and is considered one of the most ambitious training programs in the USA in this area. The examinations are conducted by the AHK in Chicago. As in Germany, examination committees are responsible for this, with one important difference: employee representatives are not involved, this place is taken by company experts. ICATT currently serves a total of 63 companies, two thirds of which are US companies that are not unionized.

7.4 Registration for apprenticeship

Companies and labor unions participating in the Registered Apprenticeship Program have to meet special standards such as a minimum training period of 12 months and the payment of training allowances. In the interviews it was emphasized that the monitoring of standards is handled very differently.

New York is considered particularly strict. For example, a major training program in the construction sector was not registered because the remuneration was below the statutory minimum wage of USD 15. Only when the company agreed to increase the remuneration, the registration was carried out. Without the USD 15, the program would not have been recognized or registered. Every three months, the company carries out checks to see whether the agreed training content is actually being provided and whether there are any complaints from the trainees. Companies in New York know that they are checked regularly. That would be one reason why some companies prefer to move their headquarters to Pennsylvania, for example, a state known for less stringent controls.

In Wisconsin, the good cooperation between training companies and the registration facility, Wisconsin's Department of Labor, was repeatedly mentioned in discussions. The training conditions were also examined very closely, but the main aim was to support companies with offers to "look for solutions".

³² ICATT: <https://www.icattapprenticeships.com>

7.5 Trade union involvement in training programs

In Wisconsin, labor unions, especially in the construction sector, have for decades been regarded as "apprenticeship advocates", as clear proponents of education. They would know very well how training works, they would have routine. Companies would not have so much experience in this area. If at all, they would have just one or two training courses in ten years, while labor unions train 40 per year.

In Wisconsin, training contracts in the construction industry are concluded between three partners, "three-way-contract": the trainee, the employer and the regional union, local union. Typically, interested parties apply to a union for training and are then trained at a union training center, which is jointly funded by contributions from employers and unions. The local unions cooperate with community or technical colleges. The local unions conclude cooperation agreements with 10 to 15 companies that participate in the training network. There is no such cooperation in the industrial sector.

Companies that are not unionized in Wisconsin and wish to register for training in the construction sector do so through the Associated Builders and Contractors of Wisconsin (ABC)³³. The association has approximately 850 members.

The industrial sector, "manufacturing", is often non-unionized. An exception are companies in the automotive industry. Labor unions have a different role in the manufacturing sector than in the construction sector. They are operating unions, which have little to do with training.

The AFL-CIO has launched an initiative called "The Industrial Manufacturing Technician apprenticeship" (IMT)³⁴ for training in a high-quality industrial profession. This is an 18-months training course with a duration of 3,000 hours. The training is designed to qualify students to set up, operate, monitor and control production facilities; improve manufacturing processes and plans to meet customer requirements; understand manufacturing as a business system that integrates multiple disciplines, processes and stakeholders; and manage time and materials efficiently and safely. The IMT training framework reflects the increasing qualification requirements in industrial manufacturing.

The US's best known and most ambitious union training center is located in New York at "local 3". Local 3 has five registered training programs. The largest number of programs are in the construction sector. Local 3 is one of the largest training centres in the USA and is jointly financed by companies in the industry and IBEW. In addition, there are numerous other training centres for the construction sector in New York, which are financed by social partners and organised by labor unions. The labor unions are also members of the New York Apprenticeship and Training Council, but they only represent the construction industry, the industry is not represented there.

³³ Associated Builders and Contractors of Wisconsin: <https://buildyourcareerwi.org>

³⁴ Working for America Institute, Apprenticeship and work-based learning;
https://partners.aflcio.org/system/files/4_wbi_imt_apprentice_cs_062316.pdf

Labor unions in the health sector have begun to engage in training. This includes in particular the H-CAP program, the Healthcare Career Advancement Program³⁵. H-CAP programs are institutionalised partnerships between employers, trade unions and universities to promote education and training in the health care sector. This also includes registered apprenticeship programs. Such programs are new to the US healthcare system. The Service Employees International Union (SEIU) is an important partner in the H-CAP network.

In South Carolina, unions play no role in company training. Labor unions are a "No Go" in South Carolina.

7.6 External evaluation/testing

Wisconsin has many elements that are very similar to the German apprenticeship / vocational and education system. But there is one major difference: there is no external examination system independent of the companies. The Department of Labor in Wisconsin says that it is a "missing piece". US companies would believe that they themselves know best who is qualified for a job. You don't need any special testing to do that. Training programs in the USA are usually time-based. At the end, trainees receive a certificate issued by the individual companies. The usual exams are held in the community colleges and technical colleges.

A German company based in Wisconsin, which is part of the ICATT network, follows the German examination system. There is an examination board, Exam Board, which is made up of external representatives of various companies. Employee representatives or labor unions are not involved. The examinations are held at a neutral location, usually a community college.

A large US industrial company based in Milwaukee/Wisconsin is in favour of an audit association with other companies. The examinations should be standardized and conducted independently of the training companies. This company is not concerned about losing qualified employees to other companies. The jobs would have to be of high quality and attractive, which would be the best protection against losing qualified employees. The company, which is itself unionised, expressly supports the participation of trade unions in company vocational training.

In the interviews in New York, the question of examinations was not seen as particularly in need of reform by the interviewees. In the construction sector, internal examinations with subsequent certification are carried out at the one-tier training centres. Companies in the industrial sector that provide training at all have internal assessment procedures. A need for a reform of the examination procedure could not be identified here.

³⁵ Healthcare Career Advancement Program: <https://hcapinc.org/>

As already mentioned, training companies in South Carolina are often supported by Apprenticeship Carolina in training matters. This is especially true of German companies based in SC such as BMW and Bosch Rexroth. Interviews and visits to the training workshops in these companies showed great similarities with well-organized training workshops in Germany.

Bosch Rexroth has referred to its own internal examination procedures with regard to examinations. These are very demanding, he said, and graduates often receive awards for good performance. Great care is taken to ensure that performance is also checked after individual training phases, with clear consequences: If the required number of points is not achieved, the apprentices have to end their training at Bosch Rexroth ("If they don't make the grades, they are out"). BMW Spartanburg also conducts internal examinations in close cooperation with the Munich headquarters. The training management here can imagine examinations in cooperation with other companies to see how good the trainees are in comparison with trainees from other companies.

7.7 Cooperation between schools and the working world

The vocational and education system in the USA is very fragmented. There is no structurally anchored cooperation for players from schools and universities, the world of work (employers, unions) on the one hand and from the state at the federal, state and municipal levels on the other hand. In contrast to other developed industrial countries, the USA has no mechanisms that require cooperation between the various actors. The interaction between the actors can be described as polycentric. The offers are organized by a variety of privately or publicly financed institutions.

This description of the vocational and education training system was basically confirmed by the interlocutors. For example, there is no coordinated cooperation between companies and community and technical colleges in Wisconsin. It was repeatedly pointed out that the school system is not networked with the world of work and is not part of a "one space". Lack of cooperation is also reported in New York. Companies usually turn to the state to establish cooperation with suitable community or technical colleges. It has also been reported that companies enter into partnerships with colleges on an individual basis if they have the impression that they are providing the content they need.

In South Carolina there are close networks with community / technical colleges at the regional level. Representatives of large companies meet weekly in so-called Coop rounds to evaluate the performance of individual trainees. This influence extends to such an extent that teaching staff that appears to be unsuitable has to be replaced under pressure from companies. Particularly noteworthy is the "Apprenticeship Carolina", an institution that provides services in the area of training³⁶. Companies are supported in the implementation of training programmes, including cooperation with community and technical colleges. Apprenticeship Carolina receives funding from the State of South Carolina and the Department of Labor.

Well-functioning cooperation in the construction industry was reported in both Wisconsin and New York. In this area, structures between employers and unions have been developed over decades, including close cooperation between companies and community colleges.

7.8 Vocational training at Siemens USA

At Siemens USA, there is no uniform vocational training system in place to date. It is up to the individual branches whether training is provided. In New York, talks were held with unions and management of the Siemens Painted Post and Olean branches. Both branches are unionized.

Siemens Painted Post, formerly Dresser Rand, has a long tradition in training. The training had been terminated after a long strike in the 2000s and the company had tried to recruit qualified workers through the labor market, but failed. On the initiative of the labor union IUE-CWA, the training program was reintroduced. It was important to have a unionized company to support the reintroduction of training. Without labor union representation, this would not have been possible, "we wouldn't have a say".

The training programs are very demanding. The minimum duration of training is 6,000 hours for a painter and 12,000 hours for an electrician / infrastructure systems. As a rule, older colleagues from the company who want to change careers apply for the training. In this respect, it is more of an in-house continuing education programme. The labor union interlocutors emphasised that there is a good relationship with the business management, and that they are all pulling in the same direction when it comes to training ("The labor relations-hips with the other side has been pretty great").

The interlocutors at Siemens Painted Post point out that the workforce is aging, so it would be very important to maintain the high level of qualification by providing more training. The government in New York seems determined to strengthen education, but there is a lack of good cooperation between employers, academia, labor and government. The challenge would be to bring these actors together.

³⁶ Apprenticeship Carolina: <https://www.apprenticeshipcarolina.com>

Siemens Olean does not yet have its own training program. There are plans to develop training programs in cooperation with a technical university that are adapted to the needs of the company.

8. Summary of the results

Vocational education and training in the USA faces many challenges. It is underfunded; the number of participants is very low; it is concentrated in a few sectors; employers often do not see it as their responsibility to participate in training; there are no independent evaluation systems for trainees and no standards for trainers; instead of national framework conditions, complex and confusing regulations prevail at the level of the federal government of the US states; and last but not least, vocational training is not attractive or little known among employers, employees, schools and parents.

There is no coherent (vocational) training system in the USA. The (vocational) training paths are manifold: Depending on the industry, occupational field and company size, there are different forms of training, learning location combinations, curricula and didactic implementations. There are also differences in the legal bases, responsibilities, examinations and financing of the individual federal states. There is no consistent and uniform approach to the creation of a US vocational training system.

The U.S. government intends to implement comprehensive reforms in the area of vocational education and training (Lerman and Rein, 2015). Qualification levels are to be raised and young people are to be given better access to the labor market. The Department of Labor (DoL) has set up a "registered apprenticeship" program (apprentice-ship.gov) to increase the supply of training places. Companies are to be motivated by financial incentives for training and to meet minimum standards for vocational training courses. From the perspective of the DoL, the program can be seen as a milestone in the development of a coherent training system in the USA. The implementation of the program varies greatly between the individual states. The case study analyses different reasons.

In the reform of (vocational) training in the USA, reference is repeatedly made to the dual vocational training system in Germany, which is considered the gold standard (Newman and Winston, 2016). The actors involved seem to be aware that a one-to-one transfer of the German vocational training system is not possible (Euler 2013). Nevertheless, the extent to which fundamental elements of the German vocational training system such as the interaction between the education and employment systems (training and labour market), the involvement of the social partners, the steering of the vocational training system (Rauner 2009), valid examination systems and the design of training content can form the basis for a reform of vocational training in the USA is being discussed.

US employers are generally very reluctant to take action: they shy away from regulation, high costs and rely on employees' own responsibility to obtain appropriate qualifications. With their own training centers, the unions are an important pillar of vocational training. They pay attention to quality and enable employees to hold their own on the labor market in the long term. They are called upon to play an active role in the development of new sectors such as industrial production and health and care for vocational training.

A major challenge is the focus on community colleges. Politicians favour academic education for vocational training as well and provide high subsidies for public two-year programmes at community colleges. These schools, with nearly 7 million students, are often considered a suitable place to acquire vocational qualifications.

Educational programs in the USA lack external evaluation. The evaluation of performance is left to the companies. This limits the validity and transferability of the certificates awarded internally. The cooperation between companies and community and technical colleges could be improved. Coordination does not function systematically.

9. Recommendations

It is proposed to develop bilateral cooperation at two levels. On the one hand, the importance of US federal structures should be taken into account. It is apparent that the implementation of specific cooperation projects requires the participation of the US states. Furthermore, it is proposed to develop bilateral cooperations at the level of companies located in Germany and the USA. As a third project, the expansion of vocational training in a sector such as the health and care sector should be supported.

1. Bilateral cooperation with the State of Wisconsin

The State of Wisconsin has a long tradition of vocational training. In 1911, the first US law on apprenticeship training was passed here, which was strongly based on the tradition of vocational training in Germany. To this day, there is close cooperation between employers and unions with jointly funded training centers. Wisconsin is also the state that most consistently applies the Department of Labor's Registered Apprenticeship Program.

Discussions with stakeholders in vocational training such as the Workforce Development Board in Madison, Technical and Community Colleges, human resources managers from Harley Davidson in Milwaukee, among others, and representatives of the labor unions have confirmed the great interest in an exchange with Germany. An exchange with vocational training managers from Germany with the various players from Wisconsin is proposed. The exchange should serve to develop a long-term dialogue and cooperation.

The intensive cooperation should help to strengthen the vocational training system in Wisconsin. Relevant cooperation partners such as the AHK Chicago and the German Consulate of Commerce are on site and can accompany this process.

Topics / Issues to be covered:

- Forms of cooperation (governance) between players in vocational training;
- Implementation of internships in companies;
- Cooperation between learning venues: e.g. better interlinking of the two learning venues through further development of content, institutions and personnel (coordination of training content, curricula, presentation of training methods);
- Examinations and certification: e.g. implementation of standards, improvement of quality, increase in mobility through better comparability of degrees;
- Vocational training in the health and care sector;
- In-company training partnerships of small and medium-sized enterprises in which the partners pool training resources and competences.

2. Bilateral cooperation with Siemens unions in the USA and Germany

Against the background of the demographic development and the difficulty of finding suitable qualified workers, there is currently a debate on how vocational training can be strengthened at company and enterprise level. This can be confirmed from talks with employees and personnel managers in Siemens companies located in the USA. The unions organized in Siemens USA companies have expressed an interest in developing a modern job description such as mechatronics technician for Siemens companies in the USA through bilateral exchange (joint workshops, conferences).

Topics / Issues to be addressed / covered:

- Development of a key issues paper for the job description "mechatronics technician"
- Pilot development of regulatory tools (based on training regulations), curricula (company and community college);
- Exams and certification: e.g. implementation of standards, improvement of quality, increase of mobility through better comparability of degrees.

3. **Bilateral cooperation with New York in the health and care sector**

The health and care sector is a rapidly growing sector. Registered call training is new in this sector. At regional level, employers and trade unions finance joint training funds.

In discussions with health and care unions in New York, it was pointed out that the expansion of vocational training in this sector is important to ensure the quality of work and open up career opportunities.

Issues / Topics to be addressed / covered:

- Comparison of training in the health and care sector in Germany and the USA;
- Designing vocational training to improve the quality of work;
- Analysis of collective agreements with regard to career opportunities through training and further education;
- Examinations and certification: e.g. implementation of standards, improvement of quality, increase of mobility by better comparability of qualifications.

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