3.2. THE PROBLEM OF ENSURING THE QUALITY OF VOCATIONAL EDUCATION AND TRAINING IN GERMANY IN CONTEMPORARY SCIENTIFIC DISCOURSE

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The study analyzes the current state of research on the issue, the legal and regulatory framework, terminology, models, methods, and technologies for quality assurance in vocational education and training in Germany. It also substantiates directions for ensuring the quality of vocational (vocational-technical) education and training in Ukraine, taking into account Germany's positive experience. The system for ensuring the quality of vocational education in Germany is one of the most effective and well-developed in the world, and its experience can be useful for many countries, including Ukraine. The key components of this system are dual education, program accreditation, continuous updating of qualifications, and close cooperation with employers. An important factor in the effectiveness of quality assurance in vocational education and training is public-private partnership, which enables the system to adapt to changes in the labor market and contemporary demands.

Keywords: *vocational (technical) education, quality of vocational (technical) education, quality assurance of vocational education and training in Germany*

3.2. ПРОБЛЕМА ЗАБЕЗПЕЧЕННЯ ЯКОСТІ ПРОФЕСІЙНОЇ ОСВІТИ І ПІДГОТОВКИ В НІМЕЧЧИНІ У СУЧАСНОМУ НАУКОВОМУ ДИСКУРСІ

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Проаналізовано стан дослідженості проблеми, нормативно-правову базу і термінологію, моделі, методи і технології забезпечення якості професійної освіти і підготовки в Німеччині, обґрунтовано напрями щодо забезпечення якості професійної (професійно-технічної) освіти і підготовки в Україні з врахуванням позитивного досвіду Німеччини. Система забезпечення якості професійної освіти в Німеччині є однією з найбільш ефективних і добре розвинених у світі, і її досвід може бути корисним для багатьох країн, зокрема для України. Основними компонентами цієї системи є дуальна освіта, акредитація програм, постійне оновлення кваліфікацій і тісна співпраця з роботодавцями. Важливим чинником ефективності забезпечення якості професійної освіти і підготовки є державно-приватне партнерство, що дозволяє адаптувати систему до змін на ринку праці та вимог часу.

Ключові слова: *професійна (професійно-технічна) освіта, якість професійної (професійно-технічної) освіти, забезпечення якості професійної освіти і підготовки в Німеччині.*

Around the world, quality and efficiency are becoming key in the educational policy of states and are becoming a top priority of international strategies in the field of vocational education and training. The relevance of the study of the problem of ensuring the quality of vocational education and training in Germany is due to the growing demands on the competence of specialists in the globalised labour market, the integration of digital technologies into the educational process and the need to adapt to rapid economic and social changes.

The study of German experience is important for improving the vocational education system in other countries, including Ukraine, which is in the process of reforming its education policy in line with European requirements. Germany's active involvement in the development and improvement of the vocational education system at the international level, as well as its support for the reform of vocational education in Ukraine, is evidenced by the visit of the Federal Minister of Education and Research of Germany, Bettina Stark-Watzinger, in February 2023, during which she visited the Kyiv Higher Vocational School of Construction and Design and learned how the institution operates in response to the challenges of russian military aggression. The information report on this diplomatic event states that in 2020, Ukraine launched the EU4Skills: Better Skills for Modern Ukraine programme, under which in 2022 the German Society for International Cooperation provided assistance to 58 hubs based on VET institutions, psychological support, and took measures to purchase 18 buses for VET institutions (Cabinet of Ministers of Ukraine, 2023).

With the support of the above-mentioned programme, a qualitative study was commissioned by the German Society for International Cooperation (GIZ) to plan and implement the national campaign of the Ministry of Education and Science of Ukraine to reform vocational education, in which the author of this text participated as an expert. The results are presented in the subsection "Implementation of a qualitative research project on educational reform in Ukraine within the framework of the EU4Skills programme (online case study)" of the collective monograph 'Hybrid education: models, world practices, Ukrainian implementation" (Liman, I., Semenets-Orlova, I., Polishchuk, E., Romanova, G., Khyzhnyak, O., Ivashchenko, A., Klochko, A., Lebed, N., Tashkinova & O., Zhabin, S, 2023, p. 249–258).

The quality assurance system for vocational education in Germany is one of the most developed in the world, characterised by a high level of

integration between education and industry, a focus on training highly qualified specialists and ensuring their ability to adapt to changes in the labour market. In the field of vocational education, Germany has a long tradition of combining theoretical knowledge and practical experience, and great attention is paid to ensuring the quality of education and compliance with both labour market and social standards, which is implemented through close cooperation between educational institutions, enterprises and government agencies.

The interest of scientists in ensuring the quality of vocational education in Germany is driven by high graduate employment rates and, accordingly, low youth unemployment compared to other EU member states, as well as the desire to adapt educational processes to the challenges of the modern labour market and social transformations.

In the field of vocational education in Germany, the issues of quality assurance have been studied by T. Deisinger, L. Deitmer, P. Kamarainen, S. Manning, M. Mudler, E.-S. Sarv, D. Bridges, S. Alle, R. Alexander, P. Broadfood, E. Wolf, M. Coles, M. Young, etc. Among domestic researchers, O. Borodienko, S. Leu, O. Melnyk, N. Opushko, L. Pukhovska, V. Radkevych, O. Radkevych, O. Samokhval, and others have paid attention to this issue.

In Germany, the term Berufsbildung is used for vocational education and training, which is mostly used in connection with basic vocational education and training and is clearly associated with the dual apprenticeship system. Its official translation: Vocational education and training (VET) (Radkevych et al., 2018b, p. 55, 56).

Studies show that the concept of quality varies depending on the context of individual national education and training systems, but the common feature is that the vocational education and training system meets the needs of the environment in which it operates (Radkevych et al., 2018a, p. 45). In particular, the EU quality assurance concepts include measures aimed at ensuring that education and training meet the expectations of stakeholders.

Modern reforms of vocational education in Germany are primarily focused on ensuring high quality training that meets the requirements of the national and international labour market. They also promote the development of a culture of continuous education among the population and provide state support for young people at the stages of vocational training and employment. Analysing the trends in the development of vocational

education in Germany, O. Samokhval (2020) identifies three areas of reform of German vocational education: social (encouraging the population to obtain educational degrees to ensure a high level of education in Germany; involving the population in lifelong learning as a guarantee of successful employment and self-development of future professionals); economic (Germany's assistance in the employment of young people at home and abroad in cooperation with EU member states; attracting industrial and commercial partners). The researcher states that, realising the importance of vocational education for the future economic growth of the country, Germany is constantly working to improve the state and quality of vocational training of future professionals.

The justification of national systems of quality assurance in education requires the study of relevant models of education, which are formed on the basis of historical traditions, peculiarities of governance, mechanisms of education regulation, etc.

Based on the classification by place of study, the Classifier of the German Institute for Labour Economics (W. Ichhorst, Nuria Rodriguez-Planas, R. Schmidl, K.A. Zimmermann) (Radkiewicz et al., 2018b, p. 59) contains five models of vocational education and training systems: 1) vocational schools; 2) vocational training centres; 3) traditional apprenticeships; 4) a dual system combining education in an educational institution with on-the-job training; 5) non-formal vocational training.

According to another classification of the Berlin University of Technology, (G. Wolf-Dietrich) (Radkevych et al., 2018b, p. 59), the following models of vocational education in Europe are identified: 1) traditional apprenticeship; 2) vocational schools; 3) market-oriented; 4) dual.

The VET system in Germany consists of three sectors (Solga et al., 2014, p. 3):

1. The well-known dual system - a combination of work-based learning and school education (apprenticeships).
2. Full vocational training programmes based on schooling - mainly for middle-level white-collar workers (especially in healthcare, social work and media, which are predominantly female professions, e.g. nurses, kindergarten teachers, medical assistants).
3. The pre-vocational training sector, known as the “transitional system”, includes programmes that do not lead to vocational qualifications.

Both dual and purely school-based vocational education and training programmes are highly specialised and provide full qualifications, which are

confirmed by state-issued certificates. It is important to note that these two sectors train specialists for different professions. That is, the choice of the sector of study is determined by the profession for which a person is studying. In other words, in Germany, the two sectors are not alternative study paths for the same profession as in Denmark (Solga, 2014, p.27).

In contrast to these two sectors, pre-vocational training programmes do not lead to a professional qualification. They usually last one year (sometimes from a few months to two years). Some of them include practical on-the-job training, but most are entirely school-based. It is rare to find a job immediately after graduation in Germany, as in most federal states education (general or vocational education) is compulsory until at least the age of 18.

The authors of the monograph "Quality Assessment Systems of Vocational Education and Training in the European Union" (Radkevych et al., 2018a, pp. 140–142) emphasize several specific features of the development of Germany's quality assurance system in vocational education and training. These include the legislative regulation of standards, curricula, and program updates; the independence of accreditation for education providers and programs; the autonomy of quality assurance systems in the federal states of Germany; and the key role of employers in ensuring the quality of workforce training. In particular, vocational education and training (VET) quality in Germany is governed by the Vocational Training Act (BBiG) and the Crafts and Trades Regulation Code (HWO). These laws set standards for educational institutions, instructors, curricula, and examinations, which are reviewed every two years to stay aligned with technological advancements. Compliance with these requirements is monitored by local educational authorities as well as specialized quality assessment bodies. Despite the fact that each region may have its own characteristics in vocational training, the national standard for upper-secondary vocational education in a specific profession remains unified across the country (Radkevych et al., 2018b, p. 71).

The accreditation of education providers and programs is carried out by private certification bodies operating in accordance with state-defined criteria. The Federal Ministry of Education and Research (BMBF) funds independent evaluations of educational institutions. The Federal Institute for Vocational Education and Training (BIBB) and the German Institute for Adult Education (DIE) administer an online platform that supports lifelong learning and enables annual labor market monitoring.

Each federal state of Germany has its own system for ensuring the quality of vocational education, which includes both external and internal evaluation. External control is carried out by inspection bodies, while internal evaluation focuses on the continuous improvement of quality based on national and European standards, including EQAVET. The annual report of the German Federal Ministry of Education contains data on the quality of VET and is used to make political decisions regarding the further development of the educational system.

Regional branches of the Chambers of Commerce and Industry are responsible for organizing final exams for vocational education students. Although the tasks for the final exams are developed by competent institutions at the national level, regional branches independently determine the extent of their use. In some federal states (Länder) of Germany, centralized written final exams have been introduced for students of initial vocational education at the school level. The Ministry of Education of the respective federal state coordinates the process of developing assessment procedures, within which teachers create task variants. After reviewing these proposals, the Ministry forms the final version of the assessment sheet for all participants in the program with the same specialization (Radkevich et al., 2018a, p. 93).

The active involvement of employers in ensuring the quality of workforce training is primarily implemented in Germany's dual education system. Employers are involved in developing educational standards, programs, and creating modern workplaces. The Federal Association of Employers (BDA) plays a key role in shaping VET policy, while control over vocational education institutions is carried out by craft and trade chambers.

The Federal Government is responsible for organizing vocational training in enterprises, while vocational schools fall under the responsibility of the federal states. However, ensuring the quality of vocational training within the dual system is a shared responsibility of both enterprises and vocational schools. Nevertheless, the primary responsibility for the training process lies with the enterprises (Hippach-Schneider & Huismann, 2016).

In Germany, employers and trade unions jointly define the requirements for worker qualifications within the framework of relevant standards. In practice, any cooperation in the field of vocational education is based on achieving consensus: no regulatory act related to vocational

education or further training can be adopted if it contradicts the position of even one social partner. Therefore, reforms in this area are either initiated by social partners or must have their full support (Hippach-Schneider & Huismann, 2016). Employers who take on trainees are responsible for setting training goals, complying with the Vocational Training Regulations, providing training resources, conducting medical examinations, organizing off-the-job training activities, signing vocational training contracts, registering candidates for exams, etc. At the same time, trainees must complete training tasks, adhere to the internal rules of the enterprise, take care of its interests, maintain confidentiality of trade secrets, keep necessary records, undergo medical examinations, etc. (Hippach-Schneider & Huismann, 2016).

In contemporary scientific discourse, particular attention is given to Germany's dual education system, its regulatory mechanisms, the cooperation between educational institutions and enterprises, as well as the influence of European educational standards on its development.

The German dual system originated from the craft sector and its craft guilds in the nineteenth century, and throughout the twentieth century, it remained the main form of training organization in the industrial manufacturing sector. In the second half of the twentieth century, service sector professions were incorporated into the dual system, but to a much lesser extent than working-class professions, for which training primarily takes place in a school-oriented system (Solga et al., 2014, p. 21).

The legal framework of the dual system of vocational education in Germany is thoroughly analyzed by N. Opushko (2022). The researcher notes that the dual form of vocational education is a strategic direction of the German government's activities and is therefore regulated by laws on vocational training (BBiG), on promoting vocational training (BerBiFG), the Youth Employment Protection Act (JArbSchG), the Vocational Regulations (HWO), and others. Although the focus is on higher vocational education, a general trend is identified, such as the heterogeneity and inconsistency in some aspects of dual training, which is related to differences in the approaches of different federal states.

In the field of secondary vocational education, according to German legislation, the subjects of training in the dual system are subject to the requirements of both the Federal Vocational Education and Training Act and

the State School Act, which obliges students under the age of 18 to attend vocational school until its completion. Additionally, important legal acts for the development of vocational education include the Vocational Education Promotion Act, which regulates the development and statistics of vocational education, the Constitutional Act on Enterprises, which grants their representatives the right to participate in the management of vocational training, and the Regulation on the Protection of Minors at Work, which defines provisions for the protection of students and young workers.

A significant role in the training of specialists in craft professions is played by the Vocational Regulations, which regulate the conditions of vocational training and the use of Vocational Training Contracts. These contracts are concluded between students (or their parents in the case of minors) and employers, and become legally binding after signing. The contracts specify the terms of training, stages and duration of training, the probation period, the amount of wages, and other important conditions. Vocational training must be conducted according to the curriculum, with the provision of necessary training resources to students, and adherence to the educational principles of the training process. Instructors and production training masters are required to carry out vocational training in accordance with approved standards and ensure the safety of students. Students, in turn, must diligently complete professional tasks, adhere to the established order, use tools and equipment safely, and ensure the confidentiality of business secrets of the enterprise where they are undergoing training (Radkevich et al., 2018b, p. 80–82).

Vocational training in the German dual system is organized according to the Regulations on the Organization of Vocational Training, which is developed through close cooperation between entrepreneurs, trade union representatives, and researchers, including the Federal Institute for Vocational Education. These regulations serve as both the legal and didactic foundation for carrying out vocational training in designated professions at enterprises. According to the Vocational Education and Training Act, they describe the following: the name of the profession, training duration, the characteristics of professional skills and knowledge, the typical curriculum, as well as the requirements for taking exams.

The typical curriculum defines the structure and order of training, based on which each enterprise creates its own plan and programs that ensure

a uniform level of preparation for specialists in a particular profession. The duration of training is determined by the complexity of the profession and can range from two to three and a half years, with the possibility of shortening or extending the training period upon the enterprise's request to the relevant authorities, such as the chambers of commerce, craft chambers, or agricultural chambers. The activities of the chambers also include supporting vocational training through advising trainers and trainees, as well as organizing interim and final exams.

Training in vocational schools is based on a "framework curriculum," which includes the goals and content of education, divided into various "fields" of study. The aim of vocational education is to develop technical, social, and personal competencies that enable future professionals to carry out their professional activities independently. The vocational school curriculum consists of 60% of the time dedicated to specialized subjects and 40% to general education subjects. The vocational school complements the practical training by expanding students' knowledge in the humanities and social sciences.

An important aspect is the possibility of updating the curriculum content in accordance with changes in technical and technological requirements that arise in the respective industries. Vocational training consists of studying general professional subjects in the first year of training, while specialized training takes place in the second and third years. Additionally, ensuring the professional mobility of specialists within the European Union is an important element of this system.

Training at enterprises is based on standards that define the set of competencies, minimum training requirements, and exam requirements for the final exams. Industry-specific practical courses allow students to acquire skills working in real production conditions, which fosters their independence and responsibility for task completion. Vocational training includes the development of social skills, such as the ability to work in a team and achieve a common goal, which facilitates the transition to the real labor market.

Innovative teaching methods aimed at developing future professionals' independent working skills are actively implemented in vocational schools, particularly through project-based learning. During project activities, students independently solve complex practical tasks, often working in

groups. Educators strive to make the theoretical part of the training as close as possible to real production situations, for example, by using the case method (Kulalaeva et al., p. 33).

Instructors at vocational schools closely collaborate with production training masters to coordinate curricula and prepare for exams, as well as participate in vocational education committees and examination boards. Production training masters are responsible for the quality of practical training, providing students with tasks that correspond to the level of their training course (Radkevich et al., 2018b, p. 102–103).

The relevant and important issue is the implementation of the experience of Germany's dual vocational education in Ukraine. T. Deissinger (2015) notes that there are fundamental arguments that effectively make it impossible to "copy" the German system of initial vocational education, and he points out that it is unreasonable to attempt to transfer the German experience to both industrialized and developing countries without considering these factors. The researcher suggests that even a vocational training system that closely resembles the German apprenticeship model would likely function differently and have different consequences if implemented in another country, considering cultural and historical specifics. First and foremost, this is related to a key feature of the German system: the involvement of business in both industry and education. In this context, the development of Public-Private Partnerships (PPP) is a necessary condition for the implementation of dual education in Ukraine.

V. Radkevich (2024) emphasizes that dual education in Germany is the result of institutional cooperation between government bodies and the private sector. The creation of an effective system that meets the needs of the country's economy is facilitated by the activities of the Federal Institute for Vocational Education and Training (BIBB), which develops standards, educational and training programs, and coordinates their implementation in collaboration with companies that provide students with opportunities to gain practical experience directly in the workplace. Considering the experience of ensuring the quality of VET in Germany, the system of evaluation and quality control based on PPP in Ukraine should be flexible, multi-level, dynamic, and adaptable to changes in the labor market. Joint development of quality standards, integration of theoretical and practical training content, as well as the active implementation of digital tools and data

analysis, contribute to strengthening the quality of vocational education and ensuring its relevance to the current economic challenges.

The implementation of the Hamburg model as an experiment was carried out in the Baltic states and Hungary (Priedulena, n.d.). The results obtained were generally assessed as positive, although a number of issues were identified, including: businesses being less interested in contributing to the costs of education, particularly during periods of significant unemployment; the limitations of current workplace training, such as a limited number of job positions for young workers and the need for a significant amount of time for practical training; and a high degree of bureaucratization.

Thus, ensuring the quality of vocational education in Ukraine requires comprehensive changes in the educational system, including the implementation of the dual education system, the development of collaboration with enterprises, the improvement of vocational education standards, as well as the creation of a monitoring and certification system. Taking into account the positive experience of Germany in these areas will help improve the quality of vocational training in Ukraine and ensure that educational programs meet the current labor market demands.

Taking into account the positive experience of Germany, several key areas can be identified for improving the quality assurance system of vocational education in Ukraine. First and foremost, it is necessary to establish mutual recognition of qualifications between Ukraine and EU countries, particularly through the harmonization of national educational standards with international ones. It is also important to intensify efforts to improve the regulatory framework that governs the models and mechanisms of cooperation between vocational education institutions and businesses, as well as to create conditions for motivating and involving social partners in the practical training of future specialists within the dual education system. Furthermore, the development of public-private partnerships plays a significant role as a factor in ensuring quality: this includes the development of quality standards, adaptation of educational programs to labor market needs, modernization of the material and technical base, strengthening the dual component, and improving the professional level of educators.

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