DEVELOPMENT OF DUAL EDUCATION IN GERMANY IN THE HISTORICAL CONTEXT

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Abstract.

Relevance: it is designed with socio-economic requirements for finding ways to reform professional education in Ukraine, which requires taking into account Germany’s experience in the field of professional training of competitive personnel and introducing a dual form of education.

Aim: of the article was to reveal the basic historical preconditions for the emergence and stages of development of dual education in Germany, analyses its features to ensure its effective and organic implementation in the system of professional (vocational-technical) education of Ukraine.

Methods: theoretical (analysis, synthesis, interpretation, abstraction, generalization, analogy, comparison); combination of logical and historical, comparative historical methods; empirical (praximetric).

Results: were investigated the development of a dual system of education of Germany in the historical context: from medieval handicraft guilds to modern problems associated with the globalization of educational sphere, modernization and informatization of the economy and production. The main stages of development of dual education in Germany are also characterized: the creation of labour schools, the reform of labour (folk) school of G. Karushsteiner, disintegration of education during the economic crisis, the revival of a dual system of education and its problems in the era of globalization. The article provides the results of the analysis of historical and pedagogical studies of various authors, official normative legal documents that regulate the process of dual education in Germany, which allowed determining the patterns and peculiarities of its development.

Conclusions: Historical and pedagogical analysis of the peculiarities of the process of formation and development of the dual education system in Germany in different historical periods allowed to distinguish its features: practice-oriented, integrity, innovation, flexibility, intellectualization, dynamism, social orientation and individualization. Implementation of elements of the dual education system in educational systems of other countries should take place not only involving German experience of legislative, economic regulation of this system and participation of employers in it, but also consider its historical genesis.

Keywords: dual education of Germany; labour school; folk school; professional school; professional education; practical training; theoretical preparation.

Introduction. Dual education in Germany is a unique national educational system, due primarily to its history and stages of industrial development. In Germany, dual education is regulated mainly by three laws and one provision: the Vocational Training Act (BBiG); the Vocational Training Promotion Act (BerBiFG); youth law on labour protection (JArbSchG); profession regulations (HWO). Training regulations (Ausbildungsverordnungen) regulate professions that require special training.

The key to quality vocational education and training in Germany is its close connection with the economy, in particular the active cooperation of educational institutions with enterprises. It stimulated the rise of the general level of education of the population, as evidenced by the growing number of educated people in the country: in 1976 only 38% of the population had no vocational or higher education, in 2013 this figure fell to 15%. In addition, the contractual basis of dual education makes it possible to carry out training in the required
professions and provides almost 100% employment of young students.

It should be added that in Germany, two-thirds of students spend their time at work, which, in turn, provides it with the image of the country with the lowest unemployment rate. This fact testifies to the existence of an established mechanism of social partnership, which has been created and consolidated its positions over the years. Therefore, in order to import dual education to other countries and its quality implementation in vocational education and training institutions, it is necessary to study thoroughly its development in the historical context and taking into account the political, economic and social aspects.

The study of the development of dual education in Germany in the historical context and taking into account the political, economic and social aspects shows that it combined both the historical experience of the nation and the traditions of German pedagogical thought and the experience of the German labour school. This adds uniqueness to Germany's vocational education and training system and encourages scholars to do comparative research to understand better the possibilities and features of its implementation.

Sources. The stages of the emergence of dual vocational education in Germany have been studied in the works of such scientists as N. Abashkina, R. Arnold, J. Baumert, G. Belkovsky, H. Benner, I. Boychevskaya, K. Bucher, G. Gruner, K. Koenig, T. Kozak, A. Lipsmeyer, L. Melnikova, G. Fedotova, H. Fur, K. Stratmann and others. According to them, the history of the dual system of vocational education and training in Germany dates back to the early Middle Ages.

The results of the analysis of scientific works, which studied foreign systems of vocational education and training, showed the need for a thorough consideration of the experience of training workers in the dual form of education in Germany, in particular its features and development problems.

In view of the above, the relevance of this study is due to socio-economic requirements for finding ways to reform vocational education in Ukraine, which require consideration of Germany's experience in training competitive staff and the introduction of a dual form of education.

Aim: of the article was to reveal the basic historical preconditions for the emergence and stages of development of dual education in Germany, analyses its features to ensure its effective and organic implementation in the system of professional (vocational-technical) education of Ukraine.

Methods: theoretical (analysis, synthesis, interpretation, abstraction, generalization, analogy, comparison); combination of logical and historical, comparative historical methods; empirical (praximetric).

Results and discussion. The institutional, legal, economic, and cultural foundations of dual education in Germany were laid in the last 20 years of the nineteenth century and the first 20 years of the twentieth century. (Greinert, 1993; Stratmann and Schlösser, 1990), but students learning in the workplace has a very long history.

The beginning of the development of dual vocational education and training in Germany, scientists date back to the reign of Charles Velukuy. Then there was an orderly and legally regulated vocational training, which young people aged 12 to 18 years, had the opportunity to receive. They came to the master to study as his students. The training period usually lasted four years. The master shared knowledge with students and provided the hone of their skills.

In terms of craft activities, professional training and education was carried out on the basis of methods of repetition, imitation and formation of skills and abilities to perform complex operations. This type of training was the first stage in the formation of the dual system of vocational education in Germany, although it was represented only by its practical component.

In the twelfth century in all sectors of the German economy commodity-money relations spread due to the emergence and development of cities, which contributed to the separation of crafts from agriculture. At the same time, artisans became the owners of certain means of production, which led to the development of artisan apprenticeship. Students worked with their master-craftsmen in the store or travelled with master-merchants to trade in goods. Students usually followed the so-called principle of Imitatio Majorum, which refers to the consistent observation, imitation, autonomous implementation and configuration. This training involved instilling in students the skills to perform certain operations and their understanding and entry into the social role through the profession. However, as we understand, the systematic transmission of theoretical knowledge to students was virtually absent. Such training, typical for many countries at that time, was called «dogmatic.»

It was not able to meet the needs of practice, so the student workshop, which emerged in the Gothic era, becomes a kind of solution to meet practical needs.
The Gothic era (mid-thirteenth century), which is characterized by the creation of principalities, urban development, the creation of military-trade unions and the widespread use of writing materials, had a great influence on education. During this period the second component of the dual system of vocational education and training, the theoretical, was outlined in student workshops. Under such conditions, the development of society caused changes in education: not a banal observation of the master and imitation of his actions, but the study of theoretical information.

During the Renaissance (around 1400), the teaching of the craft was made impossible by the lack of theoretical training with using new technologies. Thus, vocational education in Germany has been enriched by another component - advanced training. It was held by other masters, often abroad, where new styles and ideas were adopted. This made it possible to accumulate the experience of different countries, and for its transfer in professional practice there was a “professional school” - a new place of realization of the theoretical component of dual vocational education and training.

In the XV-XVI centuries in different regions of Europe political structures – states – appeared and, accordingly, the process of economic competition between them begins. The German state during this period has achieved global economic development. Cities gained freedom and autonomy, which led to the transformation of artisans into owners of means of production, the emergence and development of associations of artisans in unions. It should be added that these unions were created on a professional basis, and were designed to protect the interests of artisans. Such events created in Germany the appropriate circumstances for the “maturation” of urban crafts and craft training. Craft schools were established to provide workers’ qualifications. During this period the vocational education and training became an important tool for the state to recognize its independence and gain economic influence.

At the same time, city merchants and artisans managed to open guild and craft schools for their children, in which they taught in their native language. These schools had the task to help children in their future trade business and in the development of various crafts. Students were taught to read, write, count, for which they used methods of imitation, repetition and formation of skills and abilities to perform complex operations. However, theoretical training in the workplace was given very little time.

It should be noted that studying the process of craft education in Germany from its inception to the XV-XVI centuries, we can mostly trace the process of forming the content of the practical component of the dual system of vocational education and training. With the advent of states in Europe, a need for an organic combination of practical and theoretical components appeared. However, the educational institutions available at that time provided practical training mostly, and very little time was given to the theoretical component in the workplace.

In the system of vocational education and training in Germany, the theoretical component began to be established in the early XVI century due to the emergence of religious Sunday schools. In these schools, students learned to write, read, count, and the word of God. But education in these schools still was not compulsory. It should be emphasized that artisan unions already understood the importance of students’ acquisition of systematic theoretical knowledge, and therefore, this fact was reflected in the guild statutes of many existing at that time the duchies. The training of the craft took place according to the strict rules of the guild statutes – this is the so-called “training of masters” – according to the classical model “student – apprentice – master”.

Industrialization had changed the nature of labour, which led to a new stage in the development of the dual system of vocational education and training. Craft apprenticeship, due to the unjustified narrow specialization and low level of qualification of future workers, had ceased to meet the country's needs for qualified personnel. The most common methods of observation and simulation at that time had low quality, and the development of the professional level of training required changes. Attempts have been made to change the form of student learning: the introduction of compulsory attendance for theoretical knowledge. This contributed to the emergence of curricula and the emergence of the foundations of didactics of vocational education. The development of industry was seen by artisan workshops as a threat to “social laws”, so they considered it was necessary to prevent the “danger of destruction” of the foundations and traditions of handicraft production. At the same time, craft was the main factor in craft professional education: ideological motives prevailed over professional ones; training was aimed at developing not so much professional as socially significant.
personality traits, in particular the formation of social responsibility in students.

Despite the fact that Germany in the eighteenth century departed from the medieval attitudes in the field of vocational education and training, reorientation, demanded by industrial development, did not happen. Therefore, the system of vocational education and training in the country functioned until the first half of the nineteenth century on the basis of already existing craft principles, practically without taking into account industrial and technical ones.

During the Renaissance, real schools appeared, which made it possible to launch a new model of education that created competition for the guild method of teaching. The curriculum contained only those subjects whose study provided better preparation of students for practical activities. In addition, the craft program provided students with a series of operations required to obtain the final product. During the study of the craft, the main attention was paid to the fact that students in the process of work acquired the skills of visual-motor coordination, mastered the basic qualities necessary for each type of activity.

Development and implementation of the idea of real education and preparation of young people for practical activities in the late XVIII century characterized by the emergence of a special type of school for the poorest sections of the population, the so-called industrial school (from the Latin. Industria – diligence), which taught only the craft, educating an obedient and diligent worker. Mental education was limited to reading skills, and education was provided by conversations on religious topics to develop patience and diligence. This negative trend was caused by the intensified development of manufacturing in Germany, which required numerous workers. The following figures testify the spread of this type of school: in Bohemia in 1798 there were 674 industrial schools, in Westphalia – 231, in Prussia almost all garrison schools became industrial, in Bavaria in 1807-1808 there were 450, in Württemberg in 1822 – 342 schools (Abel, 1960).

Until the middle of the XIX century, industrial schools were gradually disappearing. This was due to the replacement of manufacturing by a machine industry that produced many goods and had lower human costs. In addition, at the beginning of industrialization, attempts to stimulate the development of handicraft production and raise the level of education of the population were made. Mandatory attendance at Sunday schools was regulated as a method of combating illiteracy. From 1820, professional educational and training institutions were established. In addition, due to the emergence of new technologies and forms of labour organization, advanced industries in Germany have initiated large-scale reforms in the system of vocational education and training.

In January 1871, the German Empire was created by uniting German cities under the leadership of O. Bismarck, who headed the government of the Kingdom of Prussia and the North German Union (Toropov, 2002). The completion of German unification created a single internal market, contributed to its strong economic growth and transformation into the world's second industrialized power. In view of this, the requirements for intellectualization and integration of production activities in enterprises had increased, which, in turn, raised the issue of professional development of workers.

Due to the rapid development of science and technology and the associated complication of production in the late XIX - early XX centuries in Germany, the question of purposeful training of qualified personnel for various areas of economic life became acute. Existing since the sixteenth century public schools, which taught literacy, morality, obedience and discipline, did not take into account the needs of industrial life and the so-called middle class. Thus, at the end of the XIX century among teachers – supporters of the labour school, a new direction emerged, which was more in line with the spirit of the time.

In 1876, the German economist, sociologist and politician K. Bücher developed the concept that reorganized public schools (Volksschule) must have so-called training workshops, which indicated the concentration of vocational education in schools and workshops. In 1878, an attempt to update the system of vocational education and training was made, namely to move the training of workers from the sphere of production to special training workshops, in which the educational process took place under the guidance of masters. However, the model of training workshops became widespread only in the twenties of the XX century. This happened due to the dual principle of vocational education that was formulated by G. Kershensteiner: practical training is carried out in production, theoretical classes – in vocational school. G. Kershensteiner implemented the reform of the labour (folk) school, setting as its main goal: civic education of youth; integration of theory and practice in teaching; understanding of social laws and processes for their application in one's own life; understanding the feasibility, order,
division of functions, as well as the need to adapt to the environment. This led to the opening of an additional level of professional education – the eighth grade and training not only the profession skills, but also teaching the theoretical foundations of professional knowledge. G. Kershensteiner's reformist idea, which was to create vocational schools for the training of artisans by analogy with high schools, which traditionally trained future university students, solved several pressing public and state problems (Toropov, 2002). On one hand, the recognition of the importance and thoroughness of vocational training by citizens and future students of vocational schools was ensured, and on the other hand, the problem of labour force training and efficiency and productivity was solved.

In the 90s of the XIX century, a better combination of practical and theoretical components of the dual system of vocational education and training appeared, as the German manufacturing industry had experienced a shortage of skilled workers. Therefore, vocational schools were opened at enterprises. These institutions combined the acquisition of working specialties by students at school and their work in manufacture. Initially, these were the so-called «student corners», and in 1906 the first factory school (Werkschule) was established (Khyzhnyak, 2019).

Mechanization of labour and jobs, the high cost of industrial equipment and the complex nature of production processes had created the preconditions for a vocational school to become a place of education and training of future skilled workers. Only in the early twentieth century day schools were introduced instead of religious Sunday schools (evening) (Khyzhnyak, 2019). This contributed to the purposeful acquisition by students of a certain amount of theoretical knowledge, which was an integral part of dual vocational education.

In the early twentieth century in Munich, G. Kershensteiner introduced a new, practice-oriented type of school for which the profession was the centre of attention. Thus, in the 1900/1901 academic year, the first vocational schools for butchers, confectioners, chimney sweeps, hairdressers and hairdressers were established in Munich (Khyzhnyak, 2019). They became an example of a new, professionally divided type of school that complemented industrial training. The main task of such schools was general labour training. In addition, there was a clear line between the theoretical and practical components of vocational education and training. These schools were provided with their own laboratories and workshops, school gardens, drawing and drawing rooms, kitchens and more. It should be noted that, according to G. Kershensteiner (1954), the load of theoretical training should be at least 7-9 hours a week, and theoretical training should not be carried out late in the evening.

It should be emphasized that the start of the consolidation of dual vocational education and training of students for the needs of specific industries (Kutscha, 2006) was the publication by the German Committee for Technical Education in 1919 the first systematized curricula of various vocational schools. Two components of the dual system of education and training – practical and theoretical training of students – had finally been balanced and approved at the state and legislative levels: the Statement on the regulation of the student education system was adopted at the XX Congress of German Trade Unions (Büchter, 2013). However, the official year of birth of the dual system of vocational education and training is considered to be 1938. This year in Germany the general compulsory education in vocational schools was introduced at the legislative level and the concept of “dual system of vocational education” was justified in the scientific sphere.

The political crisis of the first quarter of XX century affected the economies of European countries, including Germany. This slowed down the development of vocational education and training systems. The relationship and coordination of enterprises with vocational schools began to recover only after 1945. At the same time, practical education began to dominate the production, and educational material was mainly focused on the production content of the enterprise.

In the early 60s of the twentieth century, significant changes in the field of educational policy were due to scientific and technological progress. The recovery-legislative period in vocational education began, which lasted from 1961 to 1989. Its characteristic features were: renewal of the system of primary vocational education and legislative and regulatory support: adoption of the Law “On the Unified Socialist Education System” and the Law “On Vocational Education”, Improvement of vocational training programs, official recognition of the dual education system in Germany (Kozak, 2017).

The further period of modernization of vocational education continues to this day and is characterized by changes and updates of all curricula and programs; modernization of professional training of high school students at
enterprises, its rationalization and strengthening of state influence.

Despite the support of the state and employers, the establishment of vocational centres and the high employment rates of young people in Germany compared to other countries, we must recognize certain problems inherent in the dual system of vocational education and training. They are generated by: the rapid growth of new high-tech industries and, as a consequence, the need to quickly update the content of vocational education and training; the development of Internet technologies and technologies in general, based on electronic control systems, require highly intelligent professionals with a high level of theoretical training, as well as gradually displacing human labour in manufacture; the beginning of the recession in industrialized countries, which affects the reduction of jobs, the demand for skilled workers in the labour market and the demand for significant resources of enterprises for their training.

The era of globalization has become another challenge for the German system of vocational education and training, as according to A. Pleshakova (Pleshakova, 2018) every fifth German inhabitant has a foreign origin. This has exacerbated the problem of preserving identity and demonstrated that, along with legislative and economic mechanisms to support the functioning of the dual system of vocational education and training, the human factor remains decisive.

German migration policy in recent years has been a test of strength for the dual system of vocational education and training. This raised the following issues: cultural adaptation of refugees; the need for Native German cultural dominance to ensure the sustainability and traditions of dual education; education of gender equality; minimizing the influence of national migrant communities for the effectiveness of the process of adaptation of migrant students.

To solve the problems of youth employment, training and retraining of skilled workers, dual education is recognized as the best because it is able to: provide a high level of their professional qualifications, sufficient theoretical training, as well as to form social responsibility of future professionals. In addition, the prospects for its application are based on the actual focus on real production, as well as the balance of industrial and theoretical training.

Conclusions. The study, conducted on the basis of the comparative-historical method, as well as the analysis of domestic and foreign scientific sources and regulatory framework, made it possible to draw the following conclusions.

The emergence of a dual system of vocational education and training in Germany (early ninth century) was characterized by a complete denial of theoretical training.

The emergence of Gothic student workshops and vocational schools during the Renaissance, as well as the organization of craft schools and the emergence of religious Sunday schools in Germany in the early seventeenth century, contributed to the establishment of a theoretical component of dual education.

The historical period of development of dual education in Germany from the XVIII century to the beginning of the XX century is expedient to divide into three stages:
- XVIII century – formation and development of real and industrial schools, the dominance of the idea of education and training of law-abiding artisans and harmoniously developed citizens;
- the end of the XVIII - XIX centuries - the emergence of an industrial school, which taught only crafts, educating an obedient and diligent worker, the introduction of compulsory attendance at Sunday schools;
- late XIX - early XX century - creation of additional schools and development of the system of dual vocational education and training, consolidation at the scientific and legislative levels of the balance of theoretical and practical components of the dual system of vocational education and training.

According to the results of the analysis of the historical stages of development of dual education in Germany, the following features can be distinguished: practical orientation, integrativeness, innovation, intellectualization, flexibility, dynamism, social orientation and individualization.

The prospect of further research is a comparative analysis of borrowing the dual education system of Germany by foreign countries and designing a model of its implementation in Ukraine, as well as studying current problems of the dual education system and ways to solve them in Germany and Ukraine.


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Розробка: зумовлена соціально-економічними вимогами до пошуку шляхів реформування професійної освіти в Україні, що потребують урахування досвіду Німеччини в сфері професійної підготовки конкурентоспроможних кадрів і запровадження на цьому підґрунті дуальної форми здобуття освіти.

Мета полягає у розкритті основних історичних передумов виникнення та етапів розвитку дуальної освіти в Німеччині, аналізі її особливостей для забезпечення її ефективного та органічного впровадження в систему професійної (професійно-технічної) освіти України.

Методи: теоретичні (аналіз, синтез, інтерпретація, абстрагування, узагальнення, аналогія, порівняння,); поєднання логічного й історичного, порівняльно-історичних методів; емпіричні (праксиметричні).

Результати: досліджено розвиток дуальної системи освіти Німеччини в історичному контексті: від середньовічних ремісничих гільдій до сучасних проблем, пов’язаних із глобалізацією освітнього простору, модернізацією та інформатизацією економіки й виробництва. Також охарактеризовано основні етапи розвитку дуальної освіти Німеччини: створення трудових шкіл, реформа трудової (народної) школи Г. Кершенштейнера, дезінтеграція освіти в період економічної кризи, відродження дуальної системи освіти та її проблеми в епоху глобалізації. Представлено результати аналізу історико-педагогічних досліджень різних авторів, офіційних нормативних правових документів, що регламентують процес дуальної освіти Німеччини, що дали змогу визначити закономірності та особливості її розвитку.

Висновки: Історико-педагогічний аналіз особливостей процесу становлення і розвитку дуальної системи освіти у Німеччині в різні періоди її історії дозволив виокремити такі її особливості: практикоорієнтованість, інтегративність, інноваційність, гнучкість, інтелектуалізацію, динамічність, соціальну спрямованість та індивідуалізацію. Впровадження елементів дуальної системи освіти в освітні системи інших країн повинно відбувається не лише з урахуванням досвіду, накопиченого ФРН в галузі законодавчого, економічного регулювання цієї системи і участі роботодавців в ній, а й поєднання з дослідженням її історичного генезису.

Ключові слова: дуальна освіта Німеччини; трудова школа; народна школа; професійна школа; професійна освіта; практична підготовка; теоретична підготовка.

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