

HISTORICAL BACKGROUND OF VOCATIONAL EDUCATION DEVELOPMENT IN FOREIGN COUNTRIES

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Learning is the engine of professional success

The article discloses the historical background of vocational training in different foreign countries, highlights its specifics and functioning trends.

Introduction. Educational programs in general and vocational ones in particular are focused on the processes of integration and globalization of countries. In this regard the vocational education systems of different countries acquire common features. However, each professional training system has its own specifics and functioning trends. Taking into account this aspect, it is of great importance to study and take into account the progressive world experience of vocational training.

Main part. The vocational training system, on the one hand, is one of the main institutions of human socialization and the formation of an active, creative personality, on the other hand, it ensures the reproduction and development of personnel potential of a society. Its formation has gone through a long historical path of development, starting from the Middle Ages to modern times, that contributed to the transition from an agrarian economy to an industrial society. As an essential component of the education system, the development of vocational training in different countries has been profoundly influenced by various historical, cultural, economic and social factors [1].

Some foreign countries have accumulated rich experience in vocational education, forming various vocational education models and systems. The most typical successful vocational education models abroad include the following: Germany's "dual system", the United States' CBE, Australia's TAFE, Singapore's "teaching factory" model, France's apprenticeship system and the United Kingdom's BTEC. Although their names vary, the essential

characteristics and core elements they encompass are basically the same [2]. Let's turn to the experience of professional education development in these countries.

The origin of German vocational education can be traced back to the guild apprenticeship system of the Middle Ages when craftsmen were organized into guilds and taught skills as apprentices laying the foundation for vocational education. From the end of the 18th century to the beginning of the 19th century with the advent of the Industrial Revolution German vocational education gradually shifted from handicrafts to modern industrial technology training and technical schools began to emerge teaching students the industrial skills they would need in the future. In the mid-19th century German vocational education gradually became institutionalized and in 1906 Munich established the "Vocational Training School" which was followed by the formal establishment of "Vocational School Compulsory Education" in the "German Compulsory Education Act" in 1938. Vocational schools were officially established at the legal level [3].

After World War II, the German economy faced reconstruction and recovery, with vocational education becoming a key factor. The introduction of the "Vocational Education Act" in 1969 further refined the "dual system." The "dual system" model is based on the concept of "equal emphasis on general and vocational education, different types". The essence of Germany's "dual system" is "skill logic and enterprise-school co-cultivation" [4]. Under this model enterprises and vocational schools

work closely together, with students receiving practical training in enterprises and studying theoretical knowledge in schools. This model has enabled Germany to cultivate a large number of high-quality technical workers, significantly promoting the leading development of industries such as manufacturing, allowing Germany to hold a significant position in global economic competition through its excellent industrial skills and high-quality vocational education system.

In the 21st century with the development of the society, the Federal Government of Germany has made multiple revisions and supplements to the Vocational Education Act. The most recent revision was on February 5, 2009. The German vocational education system has been continuously improving, forming a highly unified legal framework and standards, ensuring the high-quality development of vocational education. Now German vocational education has become systematic. The dual-system vocational education model has gained widespread recognition from all sectors of the German society and has become an object of study and reference for vocational education worldwide.

Germany has a rich historical and cultural heritage in the study of vocational education theory. Throughout German history, many world-renowned philosophers such as Immanuel Kant, Georg Wilhelm Friedrich Hegel, Martin Heidegger, as well as great scientific socialists like Karl Heinrich Marx and Friedrich Engels have emerged. The Germans excel in logical reasoning and critical thinking, and this traditional way of thinking has had a significant impact on the scientific research of vocational education in Germany. The German ideology has played a positive role in promoting the emergence of many theoretical achievements with distinctive characteristics of vocational education.

The development of vocational education in the United States is closely linked to the country's industrialization process. The origins of vocational education in the United States can be traced back to the colonial period, when apprenticeship was the primary mode of instruction, with young people learning manual skills under the guidance of their masters. This approach aligned well with the prevailing economic model dominated by agriculture and handicrafts, laying a foundational skill base for early social development.

With the advancement of the Industrial Revolution in the 19th century, factory production emerged, and the traditional apprenticeship system gradually became unable to meet the large demand for skilled workers in large-scale industrial production. In 1821 the first public vocational school was established in Boston, marking the beginning of public vocational education in the United States. In 1862 the Morrill Act was enacted, which provided

federal government funding to states to establish "land-grant colleges," focusing on agricultural and mechanical arts education, significantly promoting the modernization of American agriculture and industrial development and cultivating a large number of practical technical talents.

At the beginning of the 20th century, the Smith-Hughes Act further regulated and strengthened vocational education in the USA. This act clearly defined the federal government's financial support responsibilities, delineated the field of vocational education, and established a relatively complete framework for vocational education systems, significantly enhancing both the scale and quality of vocational education [5]. After World War II, the U.S.A economic structure underwent transformation, and technological revolutions gave rise to new industries. Community colleges flourished, offering flexible and diverse courses with low admission barriers and affordable tuition, providing associate degree programs and various vocational training programs such as medical care and computer technology to meet the needs of different populations. At the same time, vocational education became increasingly closely aligned with enterprises, with companies participating in curriculum design and internship base construction, achieving deep integration of education and practice.

Entering the 21st century, American vocational education has moved towards diversification and internationalization. On one hand, online education and distance learning have emerged, with an increase in interdisciplinary programs to cultivate versatile talents. On the other hand, active international exchanges and cooperation have been carried out, attracting students from around the world and exporting educational models and standards, continuously expanding its influence internationally and consistently supplying suitable talents for economic development and industrial upgrading in the United States and globally.

Vocational education in Australia has a unique trajectory of development, its roots can be traced back to the colonial period. At that time, based on the traditional British apprenticeship system, vocational skills transmission in Australia was mainly carried out in families and small workshops, providing human resources support for the initial development of agriculture and simple handicrafts.

After the gold rush of the mid-19th century, the economic structure of Australia gradually changed, with increased demand for industrial and infrastructure construction, and the requirements for skilled workers were also rising. In its early stages, vocational education was known as technical education (TE), primarily consisting of government-funded training institutions and schools such as mining schools, technical schools, and workers

‘schools, aiming to enhance the skill of Australia’s front-line workforce [6]. This laid the foundation for the initial vocational education system.

In the 1960s and 1970s the economy in Australia was rapidly developing and it faced global competitive pressures, making the traditional vocational education model increasingly inadequate. The government began to prioritize vocational education and implemented large-scale reforms. In March 1973, Australia established the Australian Technical and Further Education Council, and vocational education was renamed “Technical and Further Education” (TAFE). Since then, the Technical and Further Education College has become the primary institution implementing higher vocational education in Australia [6]. In 1974, the “Cogan Report” was released, emphasizing the importance of TAFE, which promoted the integration and development of TAFE colleges, making them the core force of vocational education in Australia. TAFE colleges offer a wide range of courses covering agriculture, business, engineering, and more, adopting a teaching model that combines theory with practice, providing a large number of practical talents for various industries.

By the 1990s due to economic globalization and technological progress vocational education was further transformed in Australia. In 1992 the National Training Framework (NTF) was established, unifying standards, qualifications, and curriculum systems for vocational education, enhancing its standardization and interoperability. At the same time, the involvement of industry enterprises in vocational education deepened, ensuring that vocational education was closely aligned with market demands through participation in course development and provision of internship opportunities.

In the 21st century, Australian vocational education continues to innovate, actively introducing modern information technology and developing online courses and distance education to meet the needs of different learners. It also collaborates extensively with international vocational education institutions, conducting teacher-student exchanges and joint programs, gradually enhancing its influence in the field of international vocational education, continuously contributing to Australia’s economic prosperity, social stability and global educational cooperation and exchange.

The vocational education system in France has a long history, tracing its development back to the 19th century. In the early 19th century vocational education in France was primarily focused on handicrafts and apprenticeships. Young people learned specific skills and trades by following their masters. While this model was effective, it lacked consistency and scale. With the development of

the Industrial Revolution, the demand for skilled workers increased. In the 1850s, France began establishing technical schools, which aimed to train workers with professional technical knowledge and skills. For example, the École des Mines de Paris was founded in 1854. By the end of the 19th century the French government began to emphasize the systematic development of vocational education. In 1886 France enacted the Vocational Training Act, stipulating that the state and local governments should establish vocational training centers. These centers provided short-term vocational skills training the young people to meet the needs of industry and society.

After World War II the French economy rapidly recovered and developed, leading to an even greater demand for high-quality labor. In 1959 France enacted the “Vocational Education Reform Act”, further refining the vocational education system. That law established a dual-track system for vocational education, combining school education with enterprise training. In 1965 the creation of the “Technical Bachelor’s Degree” continued to develop and improve the French vocational education system. In 1969, France established a framework for the classification of education levels, that aimed at meeting the needs of social and economic development and appropriate training with different occupational positions [7]. In 1971 the “Modernization of Vocational Training Act” further emphasized the flexibility and adaptability of vocational education.

Moving into the 21st century, French vocational education has placed greater emphasis on international alignment, enhancing cooperation and exchange with other countries to boost its international competitiveness.

French vocational education has evolved from the traditional handicraft apprenticeship system to a modern diversified and systematic educational framework undergoing multiple stages of reform and improvement. This process reflects the changing demands for vocational education in response to France’s socio-economic development as well as the government’s continuous efforts in promoting the development of vocational education.

The history of vocational education in the UK can be traced back to the guild system of the Middle Ages. At that time, craftsmen passed on their skills through apprenticeships, which typically began around the age of 14 and involved signing a contract with their master for 5–9 years of learning. From the mid-15th century onwards, the apprenticeship system became more standardized. The Apprenticeship Act of 1563 stipulated that one could not enter the workforce without completing a 7-year apprenticeship under a master. During the Industrial Revolution, these regulations were somewhat relaxed. By the mid-

19th century, the apprenticeship system had expanded from the trades to new industries such as engineering and shipbuilding [8].

With the advent of the Industrial Revolution, the demand for skilled workers and engineers in the UK increased significantly. To meet this demand, technical schools began to rise. These schools offer professional training in fields such as mechanics, chemistry, and architecture. In 1889 the Technical Instruction Act was promulgated, and the government began to fund the construction and development of technical schools.

At the beginning of the 20th century the British government further strengthened its intervention in vocational education. In 1902 the Balfour Education Act was passed, and Local Education Authorities (LEAs) were established to be responsible for managing various educational affairs including vocational education. In 1918 the Fisher Education Act included vocational education in the compulsory education system and established the Board of Education Advisory Council on Technical and Vocational Education.

After World War II, vocational education in the UK entered an era of diversification and lifelong education. In 1964 the Robbins Report on Higher Education proposed that higher education should be open to all eligible people, which promoted the development of polytechnics. In 1988 the Education Reform Act was passed, introducing the National Curriculum, which included vocational education content. In 1992 n polytechnics were upgraded to universities, further promoting the integration of vocational education and higher education.

Entering the 21st century, the British government continued to promote vocational education reform. In 2009 the document “Skills for Sustainable Growth” was released, emphasizing the improvement of the skill level of the labor force to meet the needs of economic development. Modern Apprenticeships have become an important form of vocational education. It combines workplace learning and classroom training, covering different levels from junior to senior. In 2017 the Apprenticeship Levy was implemented, requiring large enterprises to invest in apprentice training, further promoting the development of vocational education [9]. It has laid a solid talent foundation for the continuous development of the UK in multiple fields such as manufacturing, service industry and creative industry, ensuring that the UK always maintains a certain influence on the global economic stage.

Singapore vocational education system has a long history, closely linked to the country's economic transformation and social needs. In the 1950s, in response to economic development needs, the Legislative Council passed an ordinance establishing the Singapore Polytechnic. Initially, the

Singapore Polytechnic was a comprehensive English vocational school primarily focused on arts and sciences with educational standards comparable to today's secondary vocational education. However, it was formally the first specialized institution of higher vocational education in Singapore [10]. In the early 1960s, after Singapore's independence, it faced severe unemployment issues and challenges due to a weak industrial base. To address these problems, the government began to prioritize vocational education by establishing technical schools and institutes of technology (ITE) to train technical workers and intermediate-skilled personnel.

At the end of the 1970s Singapore carried out a comprehensive vocational education reform, addressing four key areas: dual-track integration, mutual recognition of certificates, increased investment and improved teacher quality, to establish a long-term mechanism for the development of vocational education, thoroughly reversing societal underestimation of vocational education and ushering in a new era of vigorous vocational education development. In 1979, the Singapore government established the Technical Education Council (TEC) to plan and develop technical education nationwide. In 1992, TEC was reorganized into the Institute of Technology Education (ITE), becoming the core institution of vocational education in Singapore. ITE offers a wide range of courses covering multiple fields such as engineering, business, information technology, design, and media, aiming to provide students with practical skills and vocational training.

At the dawn of the 21st century, with the changes in the global economic environment and the rapid development of technology, Singapore has further strengthened the reform of vocational education. The government launched the “Skills Future” program, encouraging lifelong learning for all citizens to enhance their professional skills. This program not only covers vocational education institutions but also involves enterprises, industry associations and community organizations, forming a comprehensive vocational education ecosystem. Today, Singapore's vocational education system is highly mature, not only meeting the needs of domestic economic development but also attracting international students to study, becoming one of the global models of vocational education.

Vocational education in China has a long and rich history, deeply intertwined with the nation's social, economic and technological evolution. In ancient China, vocational education took on an informal yet practical guise. In an agrarian-dominated society, agricultural knowledge formed the bedrock of the economy. Skills such as soil cultivation, crop selection, and the use of natural fertilizers were passed down within families. For example, in rural areas, fathers would teach their sons the best times

to plant different crops based on the local climate and soil conditions. This family-based knowledge transfer ensured the sustainability of agricultural production, which was vital for the survival and growth of the population.

Handicrafts were another significant aspect of ancient vocational education. The master-apprentice system was the cornerstone of skill acquisition in crafts like pottery, silk weaving, and carpentry. A young apprentice would enter the workshop of a master craftsman, often at a young age. Over a period of several years, the apprentice would acquire not only the technical skills but also the work ethic and cultural traditions associated with the craft. For instance, in the production of fine porcelain, apprentices would spend years learning the delicate techniques of shaping clay, applying glazes and firing in kilns. This system not only preserved traditional handicrafts but also contributed to the development of a prosperous domestic and international trade, as Chinese handicrafts were highly sought after in the global market.

The late Qing Dynasty was a period of great upheaval for China, marked by the encroachment of Western powers. In response to the military and technological superiority of the West, the Qing government launched the Self-Strengthening Movement. As part of this effort, modern vocational education was introduced. The establishment of the Fujian Mawei Shipyard School in 1866 was a landmark event. This school was designed to train professionals in shipbuilding, naval engineering, and navigation. The curriculum was a blend of Western style technical knowledge, including mathematics, physics, engineering principles, and practical training in ship construction. Languages like English and French were also taught, as they were essential for accessing international maritime knowledge and technology. The graduates of this school played a crucial role in the development of China's modern naval and shipbuilding industries, laying the foundation for China's entry into the modern industrial age.

After the 1911 Revolution, which overthrew the Qing Dynasty, a new Republican government continued to reform the education system. Vocational education was given more prominence. A more comprehensive vocational education framework was established, aiming to provide a diverse range of vocational training. This included industrial skills such as mechanical engineering and textile manufacturing, commercial knowledge for the emerging business sector, and agricultural improvements to modernize farming methods. The goal was to meet the emerging needs of a developing nation and to foster economic independence and self-sufficiency.

After the foundation of the People's Republic of China in 1949, the country was in a hurry to

industrialize. Vocational education became a key driver of this effort. The government established numerous vocational schools and technical institutes across the country. These institutions focused on training workers for key industries such as heavy industry, energy, and transportation. For example, in the steel making industry, vocational schools trained technicians and workers in blast furnace operation, steel rolling techniques, and quality control. In the energy sector, students were educated in coal mining, power generation, and oil refining technologies. Training of the workers was essential for building the basic industrial infrastructure of the new country.

The reform and opening up policy, implemented in 1978, brought about a profound transformation into China's economy. The booming manufacturing and service sectors demanded a more highly skilled workforce. To meet this demand, the government introduced a series of laws to promote vocational education. The "Vocational Education Law of the People's Republic of China" was enacted in 1996. That law provided a legal basis for the development of vocational education and standardizing aspects such as school management, curriculum design and teacher qualifications. It also ensured stable funding for vocational schools, which was crucial for improving the quality of vocational training.

In the 21st century, with the acceleration of globalization and the rise of high-tech industries, vocational education in China has undergone further significant upgrades. The focus has shifted from traditional manufacturing skills to emerging fields such as information technology, artificial intelligence and new energy. Vocational schools now offer programs in software development, data analytics and renewable energy technologies. The government has been actively promoting the integration of vocational education with industry. Through initiatives such as vocational education parks and school – enterprise cooperation models, students can gain practical experience in real world industrial settings. This integration ensures that the skills taught in classrooms are in line with market demands, making vocational education graduates highly competitive in the job market.

In modern times vocational education has become one of the strategic development priorities of Chinese education, roughly equal in size to general education. The system of vocational education has been constantly enriched and improved, the schooling policy and training model have been constantly innovated and developed, and relevant theoretical research has flourished, playing a pivotal role in China's socialist modernization.

Conclusion. Summing up the scientific literature in the problem studied, we can notice that throughout

the history of vocational education development, countries and regions have all progressed along their own paths: whether it is the open community colleges that form the backbone of higher vocational education in the United States, or the highly rigorous school-enterprise cooperation in Germany, or the school-centered approach in France, etc. They all display common characteristics of their later stages of development: diversification – various forms of educational institutions, diverse professional programs, different stakeholders and varied course formats. Studying foreign experience of vocational training allows you to choose the optimal strategy for its implementation.

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