



PUBLIC-PRIVATE PARTNERSHIP IN THE FIELD OF VOCATIONAL EDUCATION: A DEVELOPMENT ROADMAP

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Abstract

Relevance. Public-private partnership in the field of vocational education is a crucial tool for modernizing the system of training future professionals, particularly in the context of globalization and rapid technological change. It enables the attraction of investments, the improvement of the material and technical resources of vocational education institutions, the implementation of innovative technologies, and the adaptation of the content and forms of the educational process to meet the demands of the modern labor market. In the context of vocational education reform in Ukraine, public-private partnership fosters the integration of the private sector into the professional training of qualified specialists and supports sustainable development of the state, national economy, and society.

Purpose: Based on research results, the article aims to identify and substantiate the key components, content, and structure of the development roadmap for public-private partnership in the field of vocational education.

Methods: The study involves analyzing scientific sources, legislative and regulatory documents, and empirical data on the development of public-private partnerships in vocational education to determine the state of the issue. Theoretical analysis and synthesis, as well as generalization of viewpoints on the researched problem, were used to identify and justify the main components, content, and structure of the development roadmap for public-private partnership in vocational education, followed by summarizing the conclusions.

Results: The key components of the development roadmap for public-private partnership in vocational education have been substantiated, which include the stages of cooperation between public and private entities, such as the legal regulation of the involvement of public and private partners in the professional training of future qualified specialists; the formation of institutional mechanisms for interaction between partnership participants; the creation of a flexible system for evaluating and monitoring the quality of vocational education; the stimulation of investments in improving the material and technical resources of vocational education institutions; and institutional mechanisms for supporting the implementation of strategies for teacher preparation and professional development. The content of the roadmap for developing public-private partnerships in vocational education is presented with the following structure: introduction; legal framework for regulating public-private partnerships; implementation and monitoring of pilot projects for public-private partnerships; scaling up successful pilot projects for public-private partnerships and integrating their results at the national level; mechanisms for improving public-private partnership projects and adapting them to changing conditions; conclusions and recommendations; appendices.

Conclusions: A well-structured roadmap for developing public-private partnerships in vocational education, which takes into account all partnership components, enables effective collaboration between the state and business. This leads to improved quality of vocational education, its adaptation to labor market needs, increased transparency of management, and the efficient regulation of contractual relations and private investments. For the development of public-private partnerships in vocational education based on the roadmap, the following recommendations are proposed: improving legislative and regulatory conditions for public-private partnership development; ensuring transparency and adapting legislation to new challenges and protecting the rights of all partnership participants; actively involving private companies in educational projects by creating additional financial and tax incentives, as well as expanding opportunities for collaboration between businesses and vocational education institutions; scaling successful public-private partnership

projects to the national level, taking into account the economic specificities of different regions; ensuring support and monitoring of public-private partnership projects to adapt them to local conditions and needs; creating infrastructure and a digital educational environment for online learning and the development of digital competence among partnership participants; developing financial mechanisms to support students, facilitating wider access to quality vocational education for all citizens; conducting systematic labor market monitoring and analysis to timely respond to changes in employer needs, regularly adjusting educational programs to meet current demands and trends; investing in the preparation and professional development of vocational education teachers, ensuring their access to modern knowledge and innovative teaching methodologies.

Keywords: *public-private partnership, roadmap, content, structure, vocational education, labor market, projects, specialists.*

Introduction. Public-private partnership (hereinafter referred to as PPP) is a modern form of interaction between public authorities and businesses in social and economic spheres aimed at sustainable economic development and social stability. PPP is also an important tool for developing the education system amid contemporary economic challenges and increasing globalization. In Ukraine, particularly in vocational education, PPP is gaining particular significance due to the need for enhancing material and technical infrastructure, introducing innovative technologies, and attracting private capital. The necessity of applying this type of partnership in vocational education is driven by the heightened interest of the state, businesses, and society in accelerating its transformation, considering the rapid technological advancements characterized by the expansion of digitalization processes, changes in management approaches at various levels, and more (Radkevych, 2024b). PPP entails expanding the capabilities of the public sector, as well as private capital, through "business actors" for the purpose of investing in the development of educational and social infrastructure, creating conditions for improving the quality of educational services, etc. (On Education, 2017). Ultimately, PPP contributes to more efficient use of resources and technologies to develop and enhance professional and other competencies in future specialists, as well as facilitate the rapid integration of vocational education graduates into production processes. Given this, PPP should be understood as a system of long-term mutually beneficial contractual economic and organizational relations between public and private entities, aimed at attracting additional investments for the development of vocational education, increasing the level of shared responsibility for decision-making in matters of public interest, and achieving pedagogical, social, and economic effects (Radkevych, 2022b).

An effective tool for the development of PPP in the field of vocational education is a roadmap,

aimed at creating a comprehensive system of cooperation between public institutions and private businesses to ensure that the vocational training of qualified specialists aligns with the needs and demands of the labor market. When developing a PPP roadmap, it is particularly important to define the main directions and stages of partner cooperation, the disclosure of which allows for an understanding of the specific steps and actions necessary for the successful implementation of PPP project goals; approaches to regulating and supporting PPP; specific PPP objectives and strategies for engaging partnership participants in pilot PPP projects in vocational education; mechanisms for monitoring and evaluating the effectiveness of PPP pilot projects; conditions for creating effective management structures that ensure clear coordination between all partnership participants; a training program for educators; criteria for aligning educational and training programs with labor market needs; mechanisms for improving PPP projects and adapting them to changing labor market and educational needs.

Sources. The legal framework regulating the participation of public and private partners in the vocational training of qualified specialists includes the Law of Ukraine "On Education" (Verkhovna Rada of Ukraine, 2017). This law serves as the foundation for the development of all educational subsystems and processes, including vocational education. It defines the principles of PPP and provides for enterprise participation in personnel training through specialized educational programs. General provisions regarding the organization and development of vocational education in the country, and the possibilities for cooperation between

vocational education institutions and the private sector, are regulated by the Law of Ukraine "On Vocational (Vocational-Technical) Education" (Verkhovna Rada of Ukraine, 1998). This law sets the requirements for the development of educational programs aimed at training skilled workers and specialists, defining the rights and responsibilities of all participants in the educational process. The law also defines the forms and mechanisms for financing vocational education, including private investments. According to Article 81 of the Law of Ukraine "On Professional Pre-Higher Education" (Verkhovna Rada of Ukraine, 2019), PPP involves: the introduction of innovative educational technologies, new educational content, and an innovative environment; joint assessment of graduates by private partners and professional pre-higher education institutions that partnered in their training; recognition of informal and non-formal education, partial and full professional qualifications; financing of training for labor market needs through educational programs jointly developed with private partners; joint training of students; private partner financing of educational needs, organizational, material, and staffing support; implementation of a dual education system; and the ability for students to choose an individual educational trajectory.

The interaction between public and private entities in various sectors, including vocational education, is regulated by the Law of Ukraine "On Public-Private Partnership" (Verkhovna Rada of Ukraine, 2010), which outlines the rules for forming, implementing, and financing PPP projects that involve both public institutions and private enterprises that provide investments, technologies, or expert assistance in education. Approaches to the development of vocational education based on PPP are outlined in the provisions of the National Economic Strategy for the period until 2030 (Cabinet of Ministers of Ukraine, 2021), the Decree of the President of Ukraine "On the Sustainable Development Goals of Ukraine for the period until 2030" (Verkhovna Rada of Ukraine, 2019), the State Regional Development Strategy for 2021-2027 (Verkhovna Rada of Ukraine, 2020), the Concept for the Implementation of State Policy in the Field of Vocational (Vocational-Technical) Education "Modern Vocational (Vocational-Technical) Education" for the period until 2027 (Verkhovna

Rada of Ukraine, 2019), the Concept for the Training of Specialists in Dual Education (Verkhovna Rada of Ukraine, 2018), the Ukraine Recovery Plan (2022), and other regulatory documents that govern partnerships in vocational education: The Order of the Ministry of Labor and Social Policy and the Ministry of Education and Science of Ukraine "On the Approval of the Regulation on Vocational Training of Workers in the Workplace" (2001), which defines the process of vocational training in production, the order of interaction between enterprises and educational institutions, and the rules for organizing workplace training for working professions, including employer participation in developing educational programs and the practical training of specialists; The Order of the Ministry of Education and Science of Ukraine "On the Approval of the Regulation on Dual Form of Vocational (Vocational-Technical) Education" (2019), which regulates the introduction of dual education elements and provides for the integration of the educational process with workplace practice.

In the development of PPP in the field of vocational education, Ukraine is guided by international agreements and documents such as the European Qualifications Framework (Europass, n.d.), which sets out requirements for the vocational training and certification of specialists in the European Union. The integration of international standards into national legislation fosters PPP development by applying widely accepted standards and methodologies for the professional training of specialists. These legislative and regulatory documents form the legal foundation for ensuring cooperation between the public and private sectors in vocational education, contributing to the effective preparation of personnel in line with the needs of the modern economy.

Theoretical foundations of the development of vocational education have been explored in the works of both domestic and foreign scholars. In particular, the principles of PPP development and the potential for incorporating them into the establishment of cooperation between educational institutions, government bodies, local authorities, social partners, public organizations, and private businesses have been substantiated by V. Radkevych (2022a). The legal foundations of PPP

development and their impact on the expansion of legislative initiatives in the field of vocational education have been revealed by S. Kravets (2022). The specifics of social partnership in theory and practice have been discussed by Ye. Tsaryova (2022), while the peculiarities of PPP models in vocational training to meet the current needs of the labor market have been elaborated by Yu. Liulkova (2024). The algorithm for determining and implementing the powers of PPP actors in the field of innovative development has been refined by S. Svirko, T. Vlasiuk, O. Shevchuk, and I. Suprunova (2023). These researchers have also improved the institutional model of PPP in terms of the functions and powers of state regulatory actors. The role of PPP in building a socially oriented economy in Ukraine and the necessary economic and social factors for cooperation between government, business, and institutional organizations have been highlighted in the scientific works of V. Uzunov (2013), V. Yemelianov (2012), Ye. Horban (2023), as well as in the research of scholars from the Institute of Vocational Education of the National Academy of Pedagogical Sciences of Ukraine (Radkevych et al., 2023a, 2023b, 2023c).

Foreign researchers' works are also of scientific interest, in which the specifics of the preparation and implementation of public-private partnership projects have been discussed (I. Hussain, Z. Faroog, W. Akhtar, 2012); the monitoring and evaluation through digital platforms (J. Roehrich, M. Lewis, G. George, 2014); and mechanisms for attracting investors (E. Engel, R. Fischer, A. Galetovic, 2010), among others. At the same time, the content and structure of the roadmap for PPP development in the field of vocational education in Ukraine remain insufficiently researched.

The aim of the article is to identify and substantiate the key components, content, and structure of the roadmap for public-private partnership development in vocational education based on the research results.

Methods: studying scientific sources, legislative and regulatory documents, and empirical data on the development of public-private partnerships in vocational education to identify the state of the research problem; theoretical analysis and synthesis, generalization of views on the research problem to determine and substantiate the

key components, structure, and content of the roadmap for public-private partnership development in vocational education, and summary of conclusions.

Results and discussion. The roadmap for PPP development in vocational education is primarily based on legislative and regulatory provisions that ensure the legal regulation of the participation of public and private partners in the process of vocational training of future qualified specialists. This legal framework encompasses all aspects of the parties' interaction, from regulating contractual relations to monitoring and controlling the outcomes of educational processes. Legislative initiatives include clear provisions regarding the rights and responsibilities of state institutions, private enterprises, and vocational education institutions involved in the training process. This enables a balance of interests and prevents abuse by any party involved in the partnership. Legislation must define mechanisms for funding and co-investing in PPP projects. This pertains to both direct investments in vocational education from the private sector (Yescombe & Farquharson, 2018) and public-private initiatives that include material and technical support for educational processes. Proper legal regulation of this aspect guarantees the transparent use of funds and the development of long-term relationships between businesses and vocational education institutions. Private companies may receive tax incentives or other stimulating measures in exchange for investments in educational and training programs, which should also be clearly enshrined in legislative acts. This allows vocational training to align with the real needs of the labor market and reduces the gap between theoretical knowledge and practical skills. Such cooperation is the key to improving the quality of vocational training and the successful adaptation of graduates to the demands of employers. Additionally, the legal framework should provide for liability in cases of non-compliance with cooperation conditions and inefficient use of resources. This includes both control mechanisms by government authorities and procedures for independent audits or evaluations of PPP project effectiveness. Transparency in matters of funding, resource allocation, and the effectiveness of educational and training programs is essential for achieving long-term PPP results in vocational

education. At the same time, the role of each party in fulfilling its obligations must be clearly defined, involving regular reporting and checks.

In addition to national legislation, the implementation of international standards and practices plays an important role in promoting PPP in vocational education institutions. For instance, international agreements may regulate joint projects with transnational companies and international organizations. This could include the exchange of experience, the introduction of best practices, and the use of global standards in workforce training. Thus, the legal framework not only fosters transparency in cooperation but also ensures the adaptation of the national vocational education system to international requirements. In general, the legal regulation of private sector involvement in vocational training should be comprehensive, considering both national needs and international trends. Implementing transparent mechanisms for funding, standardization, and evaluating learning outcomes ensures not only the improvement of vocational training quality but also creates a stable platform for economic growth and the development of innovations in various sectors of the economy.

The next component of the roadmap for PPP development is the formation of institutional mechanisms for interaction, which facilitate the development of joint PPP infrastructure projects and educational platforms. This enables the alignment of interests between both parties in the partnership and helps determine the priorities of joint initiatives in the field of vocational education. The formation of PPP institutional mechanisms in vocational education is a key factor for achieving effective cooperation between public institutions and businesses. These mechanisms establish structures and procedures that regulate collaboration at all stages of PPP project implementation, from planning to execution and monitoring. An important aspect is the creation of coordination councils, working groups, or specialized agencies that are responsible for developing joint educational programs and implementing PPP infrastructure projects. Such institutions ensure effective communication between partners to coordinate priorities, allocate resources, and ensure accountability. Laws and regulations govern the terms of contract agreements, the distribution of

financial obligations, as well as the rights and responsibilities of each party. Legal instruments should also regulate the process of creating joint educational and training programs that meet labor market needs and ensure quality control in their implementation. It is crucial for legislation to be flexible, allowing adaptation to changes in the economic and technological environments.

To support PPP infrastructure projects in vocational education, financial mechanisms need to be established to attract investments from private companies. These could include special funds that finance the construction of new vocational education institutions, equipping them with modern technologies and equipment, among other things. Public institutions should provide guarantees or preferential conditions for investors who invest in the development of the infrastructure of vocational education institutions. Joint infrastructure projects may also involve the establishment of training and practical centers where vocational education students can gain hands-on experience with modern equipment.

A crucial component of the PPP development roadmap in vocational education is the creation of educational platforms that integrate the resources of both the public and private sectors to enhance its quality. Educational platforms can act as hubs of knowledge and technology, integrating best practices in learning, research, and innovation development. These platforms provide access to online courses, training, webinars, and other forms of education, enabling students and workers to update their knowledge and skills in line with the demands of the modern labor market (Pryhodiya et al., 2023). Private companies can participate in the creation of such platforms by developing educational content, sponsoring, or providing technical support.

Institutional mechanisms should also include monitoring and evaluation systems for the effectiveness of joint PPP projects. This can be achieved through regular audits, reports, or independent expert evaluations, which help track the results of educational programs and infrastructure projects. Moreover, as noted by O. Radkevych (2022d), the involvement of social partners and civil society organizations in assessing PPP project

effectiveness ensures transparency and accountability in the process.

Thus, the formation of institutional mechanisms for interaction among PPP participants in vocational education contributes to creating a sustainable and effective system for training qualified personnel (Simak, 2016). In particular, the established cooperation between the state and business enables the introduction of modern teaching technologies, the development of educational and social infrastructure, and the creation of educational platforms that meet the needs of the economy and society. In this context, the foreign experience of creating centers of vocational excellence, where institutional cooperation mechanisms between public institutions, educational institutions, and private companies are implemented, is of scientific interest. The goal of such centers is to integrate educational programs with labor market needs. The centers provide training for qualified personnel, develop infrastructure for learning with modern equipment, and create educational platforms that bring together resources for continuous professional training and skill development.

For example, the result of institutional cooperation between public bodies and the private sector in Germany is the dual education system. The Federal Institute for Vocational Education and Training (BiBB) (Federal Institute for Vocational Education and Training, n.d.) develops standards, educational and training programs, and coordinates their implementation in collaboration with companies that provide students with practical experience directly in the workplace. This contributes to creating an effective system for workforce training that meets the needs of the German economy. In Ireland, the platform "Skillnet Ireland" (Skillnet Ireland, n.d.) operates as an educational hub, bringing together the resources of various companies and educational institutions to develop professional skills. Private companies and public institutions collaborate on the development of upskilling and retraining programs that align with labor market demands. In Italy, the "Fondazioni ITS" platform (Regione Piemonte, n.d.) unites educational institutions, private companies, and regional administrations and provides access to

training programs, workshops, and consultations for workers in various sectors of the economy.

In Ukraine, as part of the collaboration between private companies and vocational education institutions, PPP projects are being implemented to create training and practical centers in fields such as construction, mechanical engineering, maintenance, and more. These centers function as PPP infrastructure projects that provide the training of qualified personnel, the creation of new educational platforms oriented towards specific economic sectors, and so on. IT companies also invest in the establishment of modern training centers where vocational education students acquire digital skills using state-of-the-art equipment. These examples demonstrate how institutional mechanisms of interaction within PPP can successfully contribute to ensuring the quality training of skilled specialists, modernizing infrastructure, and creating innovative educational platforms for the joint management of vocational education programs.

An essential component of the roadmap for PPP development is the establishment of a flexible system for evaluating and controlling the quality of vocational education. Government bodies, together with private partners, must ensure regular monitoring of learning outcomes and the alignment of vocational education graduates with market demands. This can be achieved by creating professional standards that define the level of knowledge and skills they possess (Korotkova, 2020). Such an approach enhances the efficiency of vocational education and reduces the gap between theory and practice, a common issue in many countries around the world. The formation of a flexible system of evaluation and quality control of vocational education based on PPP principles is a key tool for ensuring that workforce training meets the modern labor market demands. This system should consider the interests of both state institutions and private companies, ensuring constant monitoring and adaptation of educational programs to the rapidly changing conditions of the economy and technologies.

The main goal of the system is to create an effective, transparent, and dynamic evaluation model that improves the quality of vocational training through collaboration between the state and

business. One of the key aspects of forming such a system is the introduction of quality standards developed jointly by government bodies and private sector representatives. The standards should be flexible enough to meet current technological trends and labor market requirements. Private companies can participate in developing evaluation criteria, which allows for the determination of the level of necessary competencies and skills for specific professional areas. This enables vocational education students to acquire relevant knowledge and skills, while enterprises ensure their production processes are supported by qualified workers.

A current approach in vocational education is the dual system of evaluating learning outcomes. Its uniqueness lies in accounting for both the theoretical and practical components of vocational education. Such a system can include regular assessments of vocational education students' performance based on theoretical knowledge and their practical achievements in real working conditions at enterprises (Radkevych, 2023c). This not only allows measuring the level of theoretical knowledge acquisition by future professionals but also assesses their ability to apply this knowledge in practice. Employer involvement in the evaluation process guarantees that the training of future professionals meets the real demands and standards of work at enterprises.

To ensure the flexibility and adaptability of the evaluation system, it is important to implement digital technologies and platforms (Radkevych, 2023d). These can include electronic portfolios, platforms for monitoring and evaluating competencies, allowing employers and vocational education institutions to track students' academic achievements in real-time. Such systems increase the speed and transparency of the evaluation process, and also facilitate interaction between vocational education institutions and businesses (Pryhodyi et al., 2023). The use of data analytics also supports the adaptation of educational and training programs to market trends and needs.

Quality control of vocational education within the PPP framework involves regular audits and independent evaluations of educational program effectiveness. Experts from both state and private structures may be involved in this process, conducting audits of the quality of teaching

materials, teaching methodologies, and their compliance with workforce training standards. Private companies can act not only as service clients but also as partners in quality control, providing infrastructural and expert support. This approach ensures that the learning outcomes meet the requirements of the real economic sector.

Overall, a flexible evaluation and quality control system based on PPP principles should be multi-level and dynamic, allowing rapid adaptation to changes in the labor market. Joint development of quality standards, integration of theoretical and practical training content, and the use of digital technologies and data analytics contribute to improving the quality of vocational education and ensure that trained specialists meet the modern needs of the economy. In this context, it is appropriate to reference examples of PPP-supported educational and practical centers, where the quality of vocational education is evaluated based on real production processes. The evaluation is carried out jointly by vocational education staff and employers. This allows for controlling the quality of specialists' training directly in the process of performing work at enterprises. These examples demonstrate how a flexible evaluation and quality control system can operate based on PPP principles, involving businesses in the process of training and evaluating specialists who meet modern labor market requirements.

Another important component of the PPP development roadmap is stimulating investment in the development of vocational education institutions' material and technical base. Private companies can provide necessary resources as well as expert support to improve the practical orientation of vocational training content and ensure access to modern technologies widely used in production. In the context of rapid technological progress, vocational education institutions need to update their infrastructure, including new equipment, digital technologies, and modernized training laboratories. To achieve this goal, the state actively cooperates with private companies through PPP mechanisms. This enables the attraction of additional financial resources and business expertise.

One effective way to stimulate investment is through the creation of tax incentives for private companies that invest in vocational education

development. These incentives may include tax relief for enterprises that finance the creation or modernization of educational and practical centers, provide equipment, or upgrade the material and technical base of vocational education institutions. This form of stimulation creates an economic motivation for businesses to participate in the process of training qualified specialists, which in the future may become a foundation for the stable development of these companies.

Another mechanism for stimulating investment is the creation of joint PPP infrastructure projects involving the state and private companies. The state may provide partial funding for such projects or offer guaranteed support in obtaining loans for developing vocational education infrastructure. For example, the joint construction of sectoral educational and practical centers, where private companies invest in modern equipment, and the state covers the costs of construction and management of the facilities. This collaboration ensures access to the latest technologies and teaching methods, improving the quality of future professionals' training.

Additionally, grant programs and vocational education development funds play a significant role in encouraging businesses to invest in the material and technical base of educational institutions. Such programs may be provided by state and international organizations to support innovative projects in vocational education.

Another effective tool for stimulating investment in PPP development is the dual form of vocational education, where private companies not only invest in the infrastructure of vocational education institutions but also engage future professionals in work at their enterprises (Strilets, 2021). This form of cooperation allows private companies to directly control the quality of workforce training and provide vocational education students with practical skills that will be beneficial in their future professional careers. Investments in equipment, training materials, and infrastructure within the framework of dual education create conditions for enhancing the quality of educational processes, thereby facilitating the integration of vocational education graduates into the production process.

The dual form of vocational education, along with the integration of practical training in the workplace with theoretical knowledge, serves as an effective tool for developing the professional competence of teaching staff. Modern educators need not only possess academic knowledge but also have practical skills that align with the demands of rapidly evolving industries and technologies (Lyakhovets, 2014). In this context, institutional mechanisms play a significant role in supporting the implementation of the strategy for teacher training and professional development. At the state level, programs for financing the training of vocational education teachers should be established, including through grants, scholarships, and public investments in higher education, while the private sector should contribute resources for the development of educational programs, as well as for the methodological and technological support of the educational process. Such cooperation ensures the adequate preparation of teachers for professional activities within the dual education system for future skilled professionals.

It is essential to highlight the need for a strategy aimed at preparing teaching staff capable of adapting to the new requirements of professional activities under public-private partnerships (PPP). This involves upgrading the qualifications of teachers in vocational education institutions, enabling them to master modern management and communication technologies that foster cooperation with employers and other stakeholders. Teacher qualification enhancement ensures that the content of education meets practical needs and guarantees a high standard of vocational training for future skilled professionals. This strategy aims to create a flexible, integrated, and dynamic system for the training and professional development of vocational education teachers. The first task of such a strategy is to define new competencies required for preparing vocational education teachers in the context of PPP. Here, close collaboration with business is crucial. Private companies can offer expert assistance in identifying the key knowledge and skills needed to work with the latest technologies and production processes, and they can support teacher participation in specialized training programs.

The second task of the strategy is to implement a continuous system of professional

development for teachers based on PPP. This can encompass various forms of learning: training sessions, internships at enterprises, participation in seminars and conferences, as well as distance learning courses. Participation in such programs enables teachers to continually update their professional knowledge and skills in the subjects they teach, improve their communication, management, and legal competencies, and adapt to changes in the labor market, production, and educational technologies (Tsarova, 2021).

The strategy should also prepare teachers to work in a digital educational environment (Humenny, 2022). Digital technologies can provide teachers and vocational training instructors with access to the latest learning materials and interactive platforms that help adapt educational programs to the needs of vocational students and the demands of the labor market. The use of digital tools in teacher training and professional development enhances their competence in working with online resources and digital technologies, which is vital in the context of the ongoing digitalization of vocational education.

Lastly, the strategy should include systems for monitoring and evaluating the effectiveness of the professional activities of vocational education teachers (Radkevych, 2024c). This can be realized through regular assessments of their knowledge and skills, as well as independent audits, which evaluate, among other things, the effectiveness of professional development programs for teaching staff. Overall, the development of a strategy for the preparation and professional development of vocational education teachers under PPP is a critical task that ensures the vocational education system meets modern demands (Kruchek et al., 2023). Such a strategy encompasses the development of new competencies, continuous professional development, close cooperation with business, and the implementation of digital technologies, enabling teachers to adapt to new realities and ensure high-quality training for future skilled professionals.

Successful examples of developing and implementing strategies for preparing teachers for new types of professional activities under PPP include initiatives from the European Union countries. For instance, Siemens' "Teach the Teacher" initiative (Germany) (Siemens AG., n.d.)

aims to prepare teachers to use the latest technologies in the educational process. The company organizes training sessions for teachers, where they gain practical skills in working with new equipment and technologies used in the industry. This initiative allows teachers to adapt their knowledge to current market demands and contribute to more effective specialist training. Another example is "WorldSkills International" (WorldSkills International, n.d.), which aims to raise professional training standards worldwide. Within this program, teachers undertake internships at enterprises and gain access to the latest technologies and practices used in the industry. The strategy entails close collaboration between businesses and educational institutions, allowing vocational education teachers to constantly update their knowledge and skills in response to modern challenges.

Additionally, Finland's national teacher training program focuses on preparing educators to work with the latest technologies and innovative teaching methods. Private companies are actively involved in developing training programs for teachers, providing opportunities for them to intern in production (McKinsey & Company, 2022). This helps teachers better understand market needs and adapt their educational programs to real working conditions. Switzerland's dual system for training vocational education teachers (SECO, 2024) also exemplifies successful cooperation between private companies and educational institutions within dual education, offering teachers the opportunity to intern at enterprises. They work in real production environments, acquiring practical skills they later use in their teaching activities. This approach ensures that teachers' knowledge is continuously updated, allowing them to adapt to new technologies and production processes.

Another example is Canada's "Industry Educators" initiative (OECD, n.d.), through which vocational education teachers collaborate with enterprises across various sectors to develop their competencies. Teachers are given the opportunity to work directly at enterprises for a certain period, allowing them to familiarize themselves with modern technologies and methods of operation. This initiative helps teachers integrate practical knowledge into their educational programs,

enhancing the quality of student training. These examples illustrate how PPP can contribute to the professional development of teaching staff, helping them adapt to new types of professional activities and ensure high-level specialist training.

Conclusions. Based on the aforementioned, public-private partnerships (PPP) in vocational education are founded on the principles of a systemic approach, encompassing legal, organizational, and institutional aspects. The key components of the roadmap for the development of PPP in vocational education, covering the stages of cooperation between public and private entities, include: legal regulation of the participation of public and private partners in the vocational training of future skilled specialists; the formation of institutional mechanisms for interaction between partnership participants; the creation of a flexible system for evaluating and monitoring the quality of vocational education; incentivizing investments in the development of the material and technical base of vocational education institutions; and institutional mechanisms to support the implementation of strategies for teacher training and professional development. The roadmap for PPP development takes into account all these components, and its content can be structured as follows: *introduction* (highlights: the results of an analysis of the current state of vocational education, an assessment of the infrastructural capacities of vocational education institutions, human resources potential; the main problems and challenges hindering the effective implementation of partnerships; economic, social, and political factors influencing PPP; international experience and opportunities for adapting best global practices to Ukrainian realities. Based on this, the goals and key tasks of the roadmap for PPP development in vocational education are determined); *legal framework for PPP regulation* (highlights: legislative acts regulating PPP, as well as the need for the development of new ones; conditions for creating specialized structures to manage and oversee the implementation of PPP; results of the identification and analysis of potential PPP participants, including government bodies, vocational education institutions, private businesses, and public organizations; mechanisms for financing and incentivizing the participation of private businesses, protecting the interests of all partnership

participants. To achieve this, it is important to develop a strategy for attracting and retaining these participants, considering their interests and needs); *implementation and monitoring of PPP Pilot Projects* (highlights: criteria for selecting and launching PPP pilot projects in cooperation with private companies willing to invest in the development of educational and social infrastructure, the modernization of educational and training programs, as well as creating new jobs for the employment of vocational education graduates, providing internships for students, and the training and professional development of teaching staff; features of monitoring and evaluating the results of PPP pilot projects, enabling the assessment of their effectiveness and adjustments for future planning; specific and measurable indicators for evaluating the success of PPP projects in vocational education).

Scaling Successful PPP Projects and Integrating Their Results at the National Level (highlights: results of disseminating successful projects to vocational education institutions in other regions; mechanisms for long-term financing and support of PPP projects; conditions for holding regular meetings, consultations, and forums to share experiences and ensure constant feedback from partnership participants. To achieve this, it is important to define the roles and responsibilities of each partnership participant, develop decision-making procedures, conflict resolution methods, ensure the transparency and sustainability of PPP projects, and establish mechanisms for long-term financing and support); *mechanisms for improving PPP and their adaptation to changing conditions* (highlights: key performance indicators of PPP; mechanisms for improving PPP projects and adapting them to changing labor market conditions and educational needs; features of implementing digital technologies in the development of PPP and the digital competencies of partnership participants; results of systematic labor market monitoring and analysis; criteria for adjusting educational and training programs according to labor market needs; conditions for ensuring equal access to quality vocational education for all citizens); *conclusions and recommendations* (highlights: the results of implementing the PPP development roadmap in vocational education, recommendations for applying the results of PPP projects in vocational

education institutions); *appendices* (highlights: legislative acts regulating PPP in vocational education; a list and description of PPP pilot projects and their results; materials on international experience and best practices). In sum, the implementation of the tasks outlined in each section of the PPP development roadmap aims to create a flexible and innovative system for training specialists based on the integration of public and private sector resources and opportunities to improve the quality and accessibility of vocational education.

For further PPP development in vocational education, based on the roadmap, the following recommendations are pertinent: improving the legislative and regulatory conditions for PPP development; ensuring transparency and adaptation of legislation to new challenges and protecting the rights of all partnership participants; actively engaging private companies in educational PPP projects by creating additional financial and tax incentives, as well as expanding opportunities for interaction between businesses and vocational education institutions; scaling successful PPP projects at the national level, taking into account the

economic specifics of different regions; ensuring support and monitoring of PPP projects, allowing their adaptation to local conditions and needs; creating infrastructure and a digital learning environment for online education, developing the digital competencies of partnership participants; developing financial mechanisms to support students, helping to reduce barriers to accessing quality vocational education for all citizens, regardless of their social and economic status; conducting systematic labor market monitoring and analysis, allowing timely responses to changes in employer needs and regular adjustments to educational programs according to current requirements and trends; investing in the training and professional development of vocational education teachers, ensuring their access to modern knowledge and innovative teaching methods.

The implementation of these recommendations will ensure the training of qualified specialists capable of working effectively in a dynamically changing professional environment, competitive in both national and international labor markets.

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ДЕРЖАВНО-ПРИВАТНЕ ПАРТНЕРСТВО У СФЕРІ ПРОФЕСІЙНОЇ ОСВІТИ: ДОРОЖНЯ КАРТА РОЗВИТКУ

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Реферат:

Актуальність. Державно-приватне партнерство у сфері професійної освіти є важливим інструментом модернізації системи підготовки майбутніх фахівців, особливо в умовах глобалізації та стрімких технологічних змін. Воно забезпечує можливість залучення інвестицій, удосконалення матеріально-технічної бази закладів професійної освіти, впровадження інноваційних технологій та адаптацію змісту й форм організації освітнього процесу до вимог сучасного ринку праці. У контексті реформування професійної освіти в Україні, державно-приватне партнерство сприяє інтеграції приватного сектора у професійну підготовку кваліфікованих фахівців та підтримує сталий розвиток держави, національної економіки й суспільства.

Мета статті: на основі результатів дослідження визначити та обґрунтувати основні складники, зміст і структуру дорожньої карти розвитку державно-приватного партнерства у сфері професійної освіти.

Методи: вивчення наукових джерел, законодавчих, нормативно - правових документів, емпіричних даних щодо розвитку державно-приватного партнерства у сфері професійної освіти – для виявлення стану проблеми дослідження; теоретичний аналіз і синтез, узагальнення поглядів щодо досліджуваної проблеми – для

визначення та обґрунтування основних складників, змісту і структури дорожньої карти розвитку державно-приватного партнерства у сфері професійної освіти, узагальнення висновків.

Результати: обґрунтовано основні складники дорожньої карти розвитку державно-приватного партнерства у сфері професійної освіти, що охоплює етапи співпраці між державними та приватними суб'єктами, а саме: правове регулювання участі державних і приватних партнерів у професійній підготовці майбутніх кваліфікованих фахівців; формування інституційних механізмів взаємодії учасників партнерства; формування гнучкої системи оцінювання та контролю якості професійної освіти; стимулювання інвестицій у розвиток матеріально-технічної бази закладів професійної освіти; інституційні механізми підтримки реалізації стратегії підготовки та професійного розвитку педагогів. Зміст дорожньої карти розвитку державно-приватного партнерства у сфері професійної освіти розкрито в такій структурі: вступ; нормативно-правова база регулювання державно-приватного партнерства; впровадження та моніторинг пілотних проєктів державно-приватного партнерства; масштабування успішних пілотних проєктів державно-приватного партнерства та інтеграція їх результатів на національному рівні; механізми вдосконалення проєктів державно-приватного партнерства та їх адаптація до змінних умов; висновки і рекомендації; додатки.

Висновки: Завдяки правильно структурованій дорожній карті розвитку державно-приватного партнерства у сфері професійної освіти, що враховує всі складники партнерства, уможливується ефективна співпраця між державою та бізнесом. Це дає змогу підвищити якість професійної освіти, адаптувати її до потреб ринку праці, забезпечити прозорість управління, а також ефективність регулювання договірних відносин і приватних інвестицій. Для розвитку державно-приватного партнерства у сфері професійної освіти на основі дорожньої карти рекомендується: *вдосконалення законодавчих і регуляторних умов розвитку державно-приватного партнерства; забезпечення прозорості й адаптації законодавства до нових викликів та захисту прав усіх учасників партнерства; активне залучення приватних компаній до освітніх проєктів шляхом створення додаткових фінансових і податкових стимулів, а також на основі розширення можливостей для взаємодії між бізнесом і закладами професійної освіти; масштабування успішних проєктів державно-приватного партнерства на національному рівні, враховуючи економічну специфіку різних регіонів; забезпечення підтримки та моніторингу проєктів державно-приватного партнерства, що дасть змогу адаптувати їх до місцевих умов і потреб; створення інфраструктури та цифрового освітнього середовища для онлайн-навчання, розвитку цифрової компетентності учасників партнерства; розроблення фінансових механізмів підтримки здобувачів освіти, що сприяють розширенню доступу до якісної професійної освіти для всіх громадян; проведення систематичного моніторингу та аналізу ринку праці, що дасть змогу вчасно реагувати на зміни у потребах роботодавців, регулярно коригувати освітні програми відповідно до актуальних вимог і тенденцій; інвестування у підготовку та професійний розвиток педагогічних працівників закладів професійної освіти, забезпечуючи їм доступ до сучасних знань та інноваційних методик викладання.*

Ключові слова: державно-приватне партнерство, дорожня карта, зміст, структура, професійна освіта, ринок праці, проєкти, фахівці.

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