



METHODOLOGICAL ASPECTS OF TRAINING BACHELORS OF VOCATIONAL EDUCATION IN THE FIELD OF CONSTRUCTION AND WELDING FOR THE ORGANIZATION OF DUAL EDUCATION

Oleg Kucher

PhD candidate, Oleksandr Dovzhenko Hlukhiv National Pedagogical University, <https://orcid.org/0009-0003-0740-8463>, e-mail: Oleg.-k@ukr.net

Abstract

Relevance: In the modern conditions of the transformation of Ukraine's vocational education system, there is a growing need to implement the dual form of education, which enhances the competitiveness of future specialists and strengthens the connection between educational institutions and the labor market; at the same time, difficulties are observed related to the insufficient preparedness of vocational training teachers.

Purpose: To highlight the theoretical and methodological foundations for training bachelors of vocational education in the field of construction and welding for the organization of dual education, and to reveal the specifics of the stages and methodological tools of this training.

Method: Analysis, synthesis, comparison, systematization and generalization, project design and modeling – to identify the essence and specifics of dual education, and to develop the content and stages of training bachelors for the organization of dual education.

Results: It was established that the effective training of bachelors of vocational education in construction and welding for organizing dual education requires a comprehensive update of the content and methodology of vocational training; its key guidelines have been defined (the formation of the teacher's legal, organizational, methodological, psychological-pedagogical, and information-digital readiness to work in a dual environment); a corresponding model has been developed, which includes four interconnected stages (foundational-orientational, theoretical-methodological, practice-oriented, and final-diagnostic); the directions for updating the content of academic disciplines for the professional and specialized training of vocational training teachers in the context of organizing dual education have been revealed; the content and methodological toolkit for the course "Dual Education: Challenges, Opportunities, and Career Prospects" have been presented.

Conclusions: The proposed model can serve as a basis for the further improvement of educational and professional programs for training vocational training teachers to organize dual education, and its implementation will contribute to enhancing the quality of educational services in institutions of vocational and professional pre-higher education.

Keywords: *dual education, vocational training, vocational training teacher, methodology, methodological toolkit, training model.*

Introduction. The development of vocational education in Ukraine is taking place in the context of profound socio-economic changes that require new approaches to personnel training. An important challenge is the need for specialists capable of combining sound theoretical knowledge

with practical skills oriented towards modern production technologies. One of the effective ways to solve this problem is the implementation of the dual form of education, which is based on a partnership between educational institutions and employers and ensures the integration of the

educational process with the real production environment.

Before the full-scale war, dual education in institutions of vocational (vocational-technical) education (hereinafter referred to as IV(VT)E) demonstrated dynamic development. For instance, in the 2020–2021 academic year, this process involved 217 IV(VT)E and 12,395 of their students, of whom 6,660 were studying directly under the dual system in 192 institutions (Institute of Educational Analytics, 2022). These indicators pointed to the real possibilities for the systemic expansion of a model that ensures a closer link between education and the labor market.

The war has significantly slowed down the pace of development of dual education. According to the Ministry of Education and Science of Ukraine, as of October 2023, it was being implemented by 168 IV(VT)E, with over a thousand enterprises involved in cooperation, and the total number of students pursuing education in the dual form was 10,364 (about 5% of the contingent) ("Despite the war, over 1,000 business enterprises...", 2023). In parallel, the dual form is also gradually developing in higher education (Buchynska et al., 2022). For example, in 2024, over 400 students from technical colleges and universities participated in dual education programs in cooperation with the DTEK Grids DSO, and 52% of them continued to work for the company after graduation (DTEK, 2025). These facts confirm the preserved potential of dual education despite the wartime conditions and, at the same time, emphasize the need to create systemic methodological support for the training of vocational education teachers, particularly in the construction and welding fields, who must be able to organize this process in complex and unpredictable circumstances.

Sources. The review of primary sources we have conducted reflects the systemic nature of scientific inquiry and the desire of researchers to comprehensively analyze the formation and development of the dual form of education in Ukraine and around the world. Considerable attention is paid to studies that reveal the theoretical and methodological foundations of implementing dual education in the professional training of future specialists (Kovalchuk, & Soroka, 2022; Kucher, 2023; Lavrentieva, 2019; Marynchenko, 2019; Savchuk, 2024). These works allow for the outlining of methodological guidelines and approaches to forming a competitive specialist in the context of

combining theoretical learning with practical training in the workplace.

An important role in forming the evidence base for the real educational practice of dual education is played by analytical materials from the Ministry of Education and Science of Ukraine and the Institute of Educational Analytics (2022; 2023), as well as reports on the results of implementing pilot projects for the introduction of dual education elements in institutions of vocational, professional pre-higher, and higher education (Buchynska et al., 2022; Chaikovska, Morhun, & Saienko, 2022). Their analysis makes it possible to trace the dynamics of this model's development at the state level.

A significant body of sources consists of scientific and methodological works dedicated to the issues of organizing the educational and production environment, developing social partnership and project activities in the field of vocational education, as well as the prospects, challenges, and trends in improving the training of pedagogical staff for the organization of dual education (Alieksieieva, & Horbatiuk, 2025; Haiduk et al., 2023; Kulalaieva, & Haiduk, 2023; Kravets, & Slobodianyk, 2024; Shykina, & Kuznietsova, 2025). They specify the mechanisms for implementing the dual model, demonstrating the variability of approaches depending on the field of training. Materials concerning the application of digital technologies in vocational education, particularly innovative tools and simulators using virtual and augmented reality (Kovalchuk, Marynchenko, & Hrytsenko, 2019; Lavrentieva et al., 2019), deserve special attention, as this emphasizes the connection between dual education and the digital transformation of the educational environment.

No less significant for the research are monographic and collective works that represent the current state of vocational education in the context of sustainable societal development (Radkevych, & Pryhodii, 2024), as well as educational and methodological works (Lebedyk, Strelnikov, & Strelnikov, 2020) that summarize the experience of implementing innovative approaches in the training system of pedagogical personnel for institutions of vocational, professional pre-higher, and higher education. The practical dimension of the researched issue is illustrated by publications dedicated to corporate practices of dual education (DTEK Grids, 2025), which reflect the results of cooperation

between business and educational institutions in training young specialists.

Thus, the sources engaged cover a wide range of scientific, normative, and practice-oriented materials, which allows for a comprehensive clarification of the issues of dual education development in the vocational education system, identification of its methodological foundations, outlining of current trends, and determination of prospects for further improvement. At the same time, the results of practical implementation indicate the existence of a number of problems related to the uneven dissemination of the dual form of education, the limited level of digitalization of the educational process, as well as the insufficient readiness of pedagogical staff and workplace training mentors for new requirements. In *совокупності*, these aspects outline the scientific problem and necessitate the search for effective pedagogical conditions for training bachelors of vocational education (construction and welding) to organize dual education in educational institutions.

Purpose. To highlight the theoretical and methodological foundations for training bachelors of vocational education in the field of construction and welding for the organization of dual education, and to reveal the specifics of the stages and methodological tools of this training.

Methods. The methodological basis of the research consisted of general scientific and special methods that allowed for a comprehensive exploration of the stated problem. In particular, the methods of analysis and synthesis were used to clarify the essence of dual education and determine its specifics compared to traditional educational models. The comparative method made it possible to compare approaches to the training of pedagogical personnel in different forms of organizing the educational process. Systematization and generalization ensured the ordering of scientific propositions and the identification of the main methodological tools that are appropriate for use in preparing bachelors of vocational education for the organization of dual education. The use of the project method allowed for the modeling of the content of individual educational components,

particularly a special course aimed at forming the readiness of bachelors of vocational education to organize dual education. Theoretical modeling was the basis for developing the stages of student training, which reflect a gradual transition from familiarization with the legal and regulatory framework to practical implementation and diagnosis of the educational process results.

Results and Discussion. We proceed from the assumption that the organization of dual education in institutions of vocational and professional pre-higher education significantly changes the role of the teacher. Whereas in the traditional model, they are primarily a bearer of knowledge and a controller of its assimilation, in the conditions of the dual form, their functions are supplemented by coordinating, facilitating, and mentoring roles (Shykina, & Kuznietsova, 2025). A vocational training teacher must combine educational and production components in their work, creating conditions for the student that are as close as possible to the real professional environment.

Consequently, new requirements are placed on the modern vocational training teacher. Firstly, they must be knowledgeable in the legal and regulatory foundations of organizing dual education and be able to implement the provisions of the relevant agreements between the educational institution and the employer (Marynchenko, 2019). Secondly, the ability to interact with enterprises, including coordinating curricula, organizing student support in the workplace, and ensuring control over learning outcomes, becomes key. Thirdly, the teacher must be methodologically prepared to integrate forms and methods that organically combine classroom and workplace training into their own practice. No less important is the psychological and pedagogical readiness to support the student's entry into the professional environment, and to form their motivation and responsibility (Savchuk, 2024). Finally, a significant requirement is proficiency in digital tools necessary for planning, monitoring, and communication within the framework of dual education (Aliexieieva, & Horbatiuk, 2025) (Table 1).

Table 1

AREAS OF ACTIVITY FOR A VOCATIONAL TRAINING TEACHER IN THE CONTEXT OF DUAL EDUCATION

Area	Teacher's Tasks	Practical Actions	Expected Result
Legal	To be knowledgeable in the legal and regulatory acts governing dual education	<ul style="list-style-type: none"> – familiarization with and adherence to the legal and regulatory framework for the dual form of education; – participation in the development of tripartite agreements "institution – student – employer"; – compliance with labor legislation for students; 	Proper organization of dual education on a legal basis, avoidance of conflicts and violations
Organizational	To ensure the alignment of educational and production programs	<ul style="list-style-type: none"> – coordinating curricula with the enterprise; – creating schedules for workplace training; – monitoring attendance and completion of production tasks; 	Continuity of the educational and production process, clear division of responsibilities between the institution and the enterprise
Methodological	To integrate educational and production methodologies	<ul style="list-style-type: none"> – development and implementation of process charts; – application of case studies and project-based tasks; – selection of methods that reflect real production situations; 	Formation of comprehensive skills in students: from theory to practice
Psychological-Pedagogical	To support the student in their professional development	<ul style="list-style-type: none"> – mentoring and counseling; – motivational talks; – support in resolving adaptation problems in the workplace; 	Increased student confidence, development of responsibility and professional culture
Information-Digital	To use modern digital tools for process management	<ul style="list-style-type: none"> – maintaining electronic internship logs; – using learning management platforms to coordinate tasks; – online communication with employers 	Effective monitoring of results, transparency and convenience of interaction among all participants

Thus, a teacher in the dual education system is no longer just an instructor, but an organizer of the educational and production process, a mediator between the student and the employer, a mentor, and a consultant. In this context, the methodological training of future vocational education teachers

becomes particularly important, as it is this training that ensures their ability to organize dual education in accordance with the modern demands of the labor market and the conditions of wartime and post-war recovery.

The methodological training of future vocational education teachers should be based on modern approaches to organizing the educational process: a competence-based approach (focusing on practical outcomes and graduate professional mobility), an integrative approach (combining classroom and workplace components in the educational process), a contextual approach (acquiring knowledge in situations as close as possible to real conditions), and a student-centered approach (taking into account students' individual educational trajectories in the context of dual education) (Kulalaieva, & Haiduk, 2023). It is the combination of these approaches that makes it possible to form in future vocational education teachers of construction and welding profiles the readiness to organize dual education in various types of educational institutions.

To ensure the systematic preparation of future vocational education teachers for the organization of dual education, it is advisable to integrate special educational blocks into the content of the educational and professional program within core disciplines, which form students' knowledge, skills, and methodological readiness for implementing the dual form of education (Kovalchuk, Marynchenko, & Hrytsenko, 2019).

Considering current trends and the spread of the dual form of education, a separate content block "Psychological and Pedagogical Foundations of Organizing Dual Education" (18 hours) can be included in the "Professional Pedagogy" academic discipline, covering topics such as: theoretical foundations of dual education; a student-centered approach in the training of future specialists in the dual form of education; pedagogical interaction and communication in the "student – teacher – employer" triangle; formation of professional motivation and responsibility in students; mentoring and pedagogical support in dual education (Kucher, 2023).

To the content of the "Theory and Methodology of Vocational Training" academic discipline, a block "Methodological Foundations for the Implementation of the Dual Form of Education" (16 hours) can be added, which includes: legal, regulatory, and organizational principles for introducing the dual form of education; planning the educational-production process and coordinating programs; methods and technologies for integrating classroom and workplace learning; digital support and monitoring tools for dual education; assessment

of learning outcomes in a dual format (Lavrentieva, 2019).

In turn, for the academic discipline "Methodology of Teaching Specialized Disciplines in Vocational Education Institutions," it is worthwhile to introduce a block "Didactic Support for Specialized Disciplines in the Context of the Dual Form of Education" (17 hours), which has the following content: specifics of selecting and structuring the content of specialized disciplines for dual training; development of educational and methodological materials taking into account production conditions; combining traditional and innovative methods in dual education; using workplace case studies and professionally oriented tasks as a didactic resource; assessing the practical training of students in the process of teaching specialized disciplines (Haiduk et al., 2023).

The proposed content blocks, integrated into the academic disciplines of professional training, form a cohesive system of methodological support for developing the readiness of bachelors of vocational education to organize dual education. They allow for the combination of fundamental knowledge with practice-oriented skills necessary for effective interaction with employers, organizing training in production conditions, and ensuring the development of students' professional independence. Such an approach contributes not only to improving the quality of training for vocational education teachers but also to forming a flexible model of the educational process, capable of adapting to the needs of the modern labor market.

The implementation of tasks for preparing teachers to organize dual education requires utilizing the potential of the elective component of the educational and professional program. In this context, it is advisable to introduce a special course aimed at forming the readiness of future vocational education teachers to organize dual education in IV(VT)E (Barkar, 2023; Chaikovska, Morhun, & Saienko, 2022). Such a course is intended to supplement the basic disciplines of the pedagogical cycle and to provide students with practice-oriented knowledge and skills necessary for effective interaction with employers and for organizing the educational process in a dual format.

Based on these ideas, we have developed and tested an elective course titled "Dual Education: Challenges, Opportunities, and Career Prospects" (90 hours, 3 ECTS credits).

The purpose of the academic discipline is: to form in students a holistic understanding of the essence, principles, and development trends of dual education in Ukraine and worldwide, to ensure the assimilation of methods for its organization in institutions of vocational (vocational-technical) and higher education, and also to reveal its significance for the career prospects of future specialists.

The course objectives are:

- to familiarize with the legal, regulatory, and conceptual framework of dual education;
- to reveal the methodological, organizational, and psychological-pedagogical aspects of implementing the dual form of education;
- to develop the ability to work with employers when organizing the educational-production process;
- to master methods for combining the theoretical and practical components of professional training;
- to teach the use of digital technologies for communication, monitoring, and assessment in the context of dual education;
- to reveal the opportunities of dual education as a tool for students' career growth.

Upon completion of the course, the student should know: the essence and specifics of dual education as a form of specialist training; the legal and regulatory documents of Ukraine that regulate the organization of dual education; the main challenges and development trends of dual education in the context of wartime and post-war transformations; the opportunities for partnership between educational institutions and employers to build individual learning trajectories; methodological and organizational approaches to combining classroom training with workplace practice; modern digital tools for monitoring, communication, and assessment in the dual process; the role of dual education in shaping the career prospects of graduates.

The student must demonstrate the ability to: analyze and apply the legislative framework for organizing dual education; align educational programs with the needs of employers and enterprises; organize an effective educational-production process within IV(VT)E; provide psychological and pedagogical support to a student in a production environment; apply digital tools for learning management and feedback; assess students' learning outcomes in the dual system format; predict and form individual career trajectories for students based on the experience of dual education.

The volume of the elective academic discipline is 90 hours, of which 12 hours are lectures and 24 hours are practical and seminar classes, with 54 hours of independent study (preparation for classes, completion of practical tasks, literature review, development of a methodological project).

The following forms and methods of work are planned: lectures with elements of discussion; seminars with analysis of regulatory documents and practical case studies; role-playing games ("negotiations with an employer," "drafting a tripartite agreement," "motivational talk," "reflective report"); project-based activity (development of a mini-program for dual education, tasks for individual learning modules); interactive methods (case method, SWOT analysis, masterclasses from practitioners); independent study of sources and preparation of individual research projects.

The structure of the special course involves dividing the content into separate modules that cover both theoretical and practical aspects of organizing dual education. Each module has a defined volume of classroom and independent study hours and concludes with the completion of tasks that promote the integration of knowledge and the formation of practical skills for the future vocational training teacher (see Table 2).

Table 2

CONTENT OF THE ELECTIVE COURSE "DUAL EDUCATION: CHALLENGES, OPPORTUNITIES, AND CAREER PROSPECTS"

Module	Content
1. Theoretical and Methodological Foundations of Dual Education (18 hours)	Origin and formation of the dual education concept in Europe. Theoretical approaches: andragogical, competence-based, contextual. Legal and regulatory framework for dual education in Ukraine. Comparison of dual education models (German, Austrian, Polish) and their adaptation to Ukrainian conditions.

2. Organizational and Managerial Dimension of Dual Education (20 hours)	Mechanism for concluding tripartite agreements (educational institution – student – employer). Creation of curricula and schedules for the educational process, considering production cycles. Defining the functions of mentors from the enterprise and teachers from the educational institution. Quality monitoring systems: dual education logbook, student's electronic portfolio, employer assessment.
3. Methodology for Preparing Teachers to Work in the Dual System (20 hours)	Specifics of combining theoretical classes with workplace practices. Methodological techniques of dual education: case method, problem-based learning, project-based learning, microteaching, micro-qualifications. Psychological-pedagogical support for the student in the dual education system: supporting learning motivation, working with barriers and challenges (fear of the workplace, adaptation, specialization). Features of the dialogue in the 'student – workplace mentor – educational institution teacher' system.
4. Digital Tools and Innovative Practices in Dual Education (14 hours)	LMS Moodle / Google Classroom in support of dual programs. Using Trello, Asana, MS Teams for planning and communication with employers. Online logbooks and digital competency maps. VR/AR simulators for modeling production processes. The potential of non-formal and informal education in dual training.
5. Career Prospects and Professional Mobility of the Teacher (18 hours)	Employment trends for graduates of dual programs (examples of cooperation with DTEK, Metinvest, BASF, etc.). Developing the professional mobility of the teacher in changing market conditions. Lifelong learning as a continuation of the dual model. Prospects for micro-qualifications and certifications in vocational education.

The proposed elective academic discipline not only provides knowledge about dual education and its career potential but also involves practical training for students in organizing this form of education in vocational institutions. Effectiveness is achieved through the use of purposefully selected methodological tools and the construction of a phased model for such training (Lebedyk, Strelnikov & Strelnikov, 2020) (see Fig. 1).

Process charts for educational and production tasks remain an important foundational element, helping to clearly structure welding or construction work processes, thereby forming students' ability to plan and control quality. This is complemented by the case method, focused on analyzing real workplace situations that require the selection of technologies or the resolution of organizational problems, including those that arise with the dual form of education.

The video method has significant potential, allowing for the demonstration of algorithms for performing technological operations, safety instructions, or examples of modern production practices. Based on this, students can analyze the

correctness of actions and critically evaluate different approaches. An effective addition is educational excursions to construction sites or welding areas, where students get acquainted with the real production environment, as well as to training workshops equipped in IV(VT)E. In cases where a direct visit is impossible, it is advisable to use virtual tours created based on 3D modeling or video tours, which allow for safe immersion in production processes.

Project-based tasks hold a special place in the formation of pedagogical skills, prompting students to plan the educational-production process and create layouts and models for work organization (Kravets & Slobodanyk, 2024). WebQuests serve as an important tool, organizing students' research activities on the Internet aimed at solving complex professional problems (for example, selecting optimal materials or technologies considering modern innovations). This form combines the development of information literacy with the formation of investigative research skills in bachelors of vocational education.

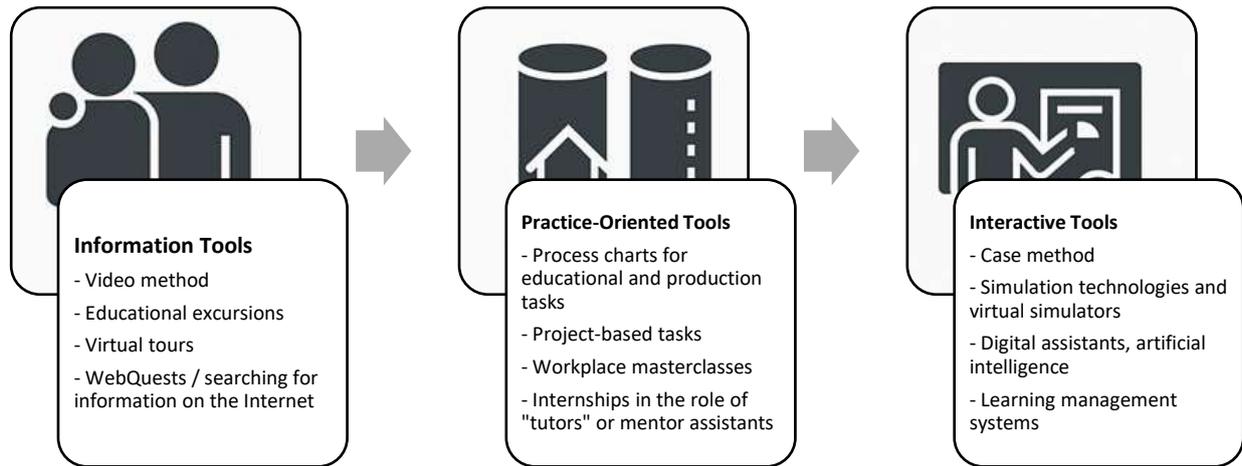


Fig. 1. Methodological tools for preparing vocational training teachers for the organization of dual education

The practical component is enhanced through internships for students in the role of "tutors" during workplace practice, as well as workplace masterclasses where enterprise specialists demonstrate advanced technologies and modern equipment to future professionals. Additionally, the use of simulation technologies and virtual simulators ensures the safe practice of complex or risky operations (Lavrentieva, et al., 2019, March 22). In turn, the introduction of digital assistants and artificial intelligence technologies (for example, ChatGPT, integrated Moodle modules, or specialized digital tutors) makes it possible to personalize learning paths, provide students with timely prompts and support, and also to model production situations with a high level of realism (Radkevych, & Pryhodii, 2024). All these tools combined form a flexible and multidimensional methodological system that corresponds to the specifics of dual education in the construction and welding industries. The training of bachelors of vocational education in the field of construction and welding for the organization of dual education occurs in stages (Kovalchuk, & Soroka, 2022), which ensures the consistent formation of professional knowledge, skills, and practical experience (see Fig. 2). In the first stage (foundational-orientational), students are introduced to the conceptual foundations of dual education, its place in the system of vocational training, and the legal and regulatory documents that govern the interaction between the educational institution and employers. This creates a foundation for understanding the importance of partnership in the

professional development of a future teacher. The second stage (theoretical-methodological) is aimed at mastering the methodological foundations of organizing dual education. It is implemented in the content of such academic disciplines as "Professional Pedagogy" and "Theory and Methodology of Vocational Training," where future specialists master the forms and methods of combining classroom and workplace training, and practice the skills of developing educational-production tasks, process charts, and case studies. The third stage (practice-oriented) focuses on applying the acquired knowledge in real production conditions. During pedagogical and workplace practice, students perform the functions of tutors, organize educational and virtual excursions, and participate in project-based tasks in collaboration with partner enterprises. An important component of this stage is the mastery of elective courses, particularly "Dual Education: Challenges, Opportunities, and Career Prospects," "Management of the Educational-Production Process," and "Digital Tools in the Organization of Dual Education." This allows students to delve deeper into the subject matter and to test methods for organizing the educational-production process. The fourth stage (final-diagnostic) involves the generalization and assessment of the formed readiness of future teachers to organize dual education. At this stage, the completion of coursework and thesis projects that integrate the results of practical and theoretical training, as well as conducting diagnostics of the students' preparedness level, become key. This helps to determine the level of their ability for the

independent organization of dual education and ensures the adjustment of the educational process.

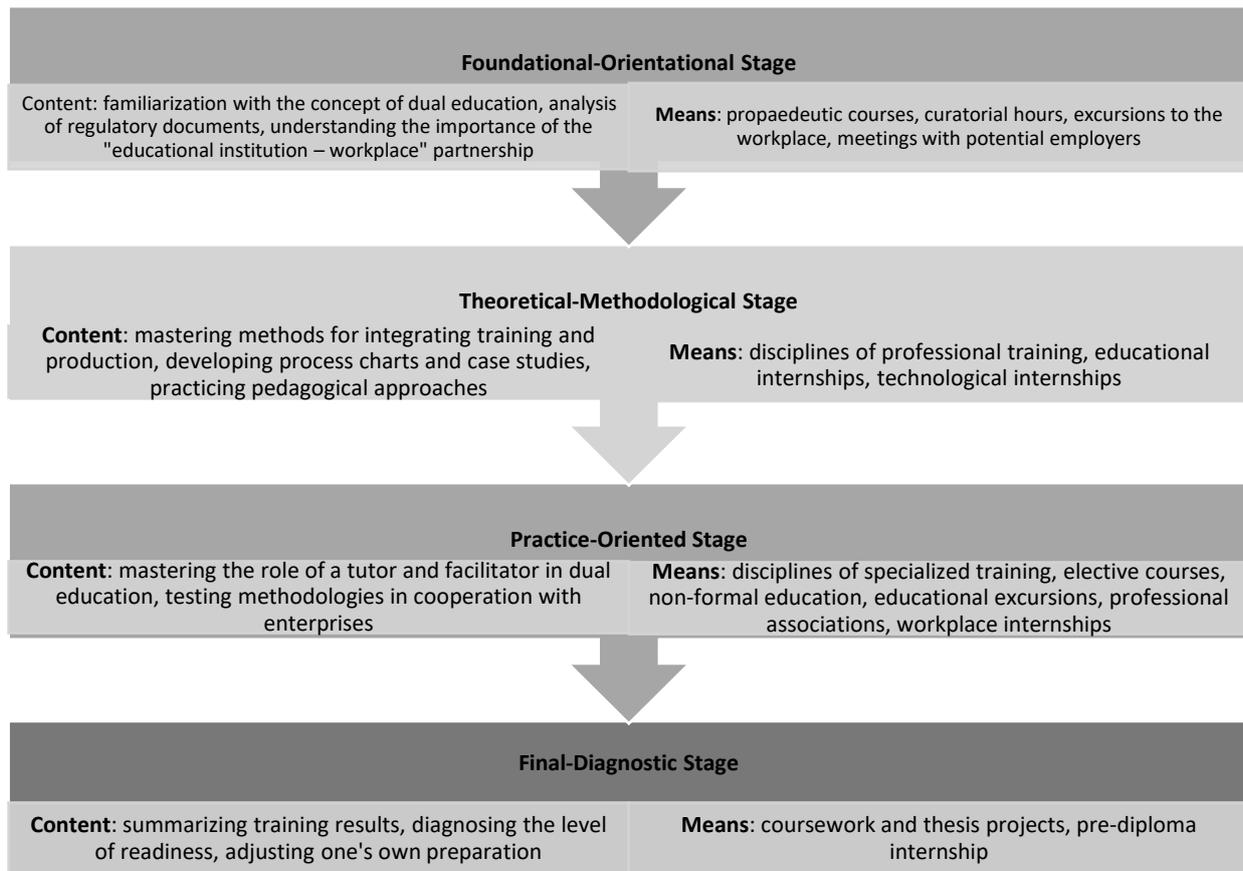


Fig. 2. Stages of preparing bachelors of vocational education in the construction and welding profiles for the organization of dual education

Thus, the proposed model for preparing bachelors of vocational education in the field of construction and welding for the organization of dual education is phased and comprehensive. It combines legal, organizational, methodological, and digital aspects, involves the use of modern methodological tools, and creates conditions for the formation of a teacher's holistic readiness for interaction with employers. The implementation of this model contributes to the integration of theoretical knowledge and production experience, ensures practice-oriented training, and increases the competitiveness of graduates in the labor market.

Conclusions. The conducted research allows us to state that the effective preparation of bachelors of vocational education in the field of construction and welding for the organization of dual education requires a comprehensive update of the content and methodology of their professional-pedagogical training. It has been determined that the key guidelines are the formation of the legal, organizational, methodological, psychological-

pedagogical, and information-digital readiness of a vocational education teacher to work in a dual environment.

The presented training model includes four interconnected stages: foundational-orientational, theoretical-methodological, practice-oriented, and final-diagnostic. Within each of them, specific methodological tools (informational, practice-oriented, interactive) should be applied, taking into account the specifics of the construction and welding profiles, as well as the need for students' gradual entry into the real professional environment and mastery of the methods and technologies of dual education.

The developed model considers the advisability of implementing special blocks dedicated to the issues of dual education into the content of the courses "Professional Pedagogy," "Theory and Methodology of Vocational Training," and "Methodology of Teaching Specialized Disciplines in Vocational Education Institutions," as well as introducing elective academic disciplines,

particularly "Dual Education: Challenges, Opportunities, and Career Prospects" (3 ECTS credits). Such an integration of professional training elements creates a holistic system in which theoretical knowledge, methodological skills, and practical experience of future vocational training teachers are combined.

Thus, the proposed model can become a basis for the further improvement of educational and professional programs for preparing vocational training teachers, and its approbation will contribute to enhancing the quality of dual education

organization in institutions of vocational and professional pre-higher education.

Further scientific research should be directed towards identifying the pedagogical conditions that ensure the effectiveness of preparing bachelors of vocational education in the field of construction and welding for the organization of dual education, as well as towards the experimental verification of the proposed model in the educational process of institutions of vocational and professional pre-higher education.

List of references

Алексєєва, Г. М., & Горбатюк, Л. В. (2025). Цифрова репрезентація результатів навчання як елемент дуальної моделі у професійній освіті. *Педагогічна Академія: наукові записки*, (19). <https://doi.org/10.5281/zenodo.15863643>

Баркар, В. І. (2023). *Дуальна форма навчання як складник соціального партнерства в закладах професійної освіти*. Київ: Національна академія педагогічних наук України, ДЗВО «Університет менеджменту освіти», Білоцерківський інститут неперервної професійної освіти. <https://lib.iitta.gov.ua/id/eprint/735997/1/%D0%95%D0%BB%D0%B5%D0%BA%D1%82%D1%80%D0%BE%D0%BD%D0%BD%D0%B8%D0%B9%D0%BA%D1%83%D1%80%D1%81%D0%91%D0%B0%D1%80%D0%BA%D0%B0%D1%80.pdf>

Бучинська, О., Давліканова, Т., Іщенко, І., Лилик, А., Чайковська, А., & Яшкіна, О. (2022). *Аналітичний звіт за результатами третього року пілотного проекту, що реалізується відповідно до Наказу МОНУ від 15.10.2019 № 1296 «Щодо запровадження пілотного проекту в закладах фахової передвищої та вищої освіти з підготовки фахівців за дуальною формою здобуття освіти»*. Київ: ТОВ «Вістка». <https://mon.gov.ua/static-objects/mon/sites/1/news/2023/02/02/Dual.studies-02.02.2023.pdf>

Гайдук, О. В., Герлянд, Т. М., Гоменюк, Д. В., Кулалаєва, Н. В., Пятничук, Т. В., & Шимановський, М. М. (2023). *Науково-методичне забезпечення професійної освіти і навчання: Методичні засади впровадження елементів дуальної форми навчання в професійну підготовку майбутніх кваліфікованих робітників будівельної, машинобудівної галузей, сфери обслуговування та громадського харчування: монографія* (Н. В. Кулалаєва, наук. ред.). Київ: Інститут професійної освіти НАПН України.

ДТЕК Мережі (2025, січень 21). *Дуальна освіта в ОСР ДТЕК Мережі: 52% студентів продовжують кар'єру в ОСР*. https://grids.dtek.com/media-center/press/dualna-osvita-v-osr-dtek-merezhi-52-studentiv-prodovzhuuyut-kareru-v-/?utm_source

Інститут освітньої аналітики (2022). *Основні освітні статистичні дані (2021-2022)*. https://iea.gov.ua/wp-content/uploads/2022/07/oosd_20220708.pdf

Ковальчук, В. І., & Сорока, В. В. (2022). Застосування інноваційних цифрових технологій у підготовці педагогів для сфери професійної освіти. У Л. В. Барановська, & Л. І. Морська (Ред.), *Інноваційні освітні технології: світовий і вітчизняний досвід використання в системі неперервної освіти* (с. 238–249). Біла Церква: ТОВ «Білоцерківдрук».

Кравець, С., & Слободяник, О. (2024). Розвиток партнерства у сфері професійної освіти на засадах проектної діяльності. *Адаптивне управління: теорія і практика. Серія Педагогіка*, 18(35). [https://doi.org/10.33296/2707-0255-18\(35\)-17](https://doi.org/10.33296/2707-0255-18(35)-17)

Кулалаєва, Н. В., & Гайдук, О. В. (2023). Проектування якісного освітньо-виробничого середовища закладу професійної (професійно-технічної) освіти в умовах дуального навчання. *Професійна педагогіка*, 2(27), 107–119. <https://doi.org/10.32835/2707-3092.2023.27.107-119>

Кучер, О. А. (2023). Актуальність підготовки майбутніх бакалаврів з професійної освіти (будівництво та зварювання) за дуальною формою освіти. *Наукові інновації та передові технології*, 13(27), 708–719. [https://doi.org/10.52058/2786-5274-2023-13\(27\)-708-719](https://doi.org/10.52058/2786-5274-2023-13(27)-708-719)

Лаврентьєва, О. О. (2019). Теорія і методика професійного становлення конкурентоздатного фахівця в системі дуальної підготовки. *Фізико-математична освіта*, (2(20), ч. 2), 29–35. https://fmo-journal.fizmatsspu.sumy.ua/journals/2019-v2-20-2/2019_2-20-2_Lavrentieva_FMO.pdf

Лебедик, Л. В., Стрельніков, В. Ю., & Стрельніков, М. В. (2020). *Сучасні технології навчання і методики викладання дисциплін: Навчально-методичний посібник для слухачів курсів підвищення кваліфікації педагогічних працівників закладів середньої, професійної (професійно-технічної), фахової передвищої та вищої освіти*. Полтава: АСМІ. <https://files.znu.edu.ua/files/Bibliobooks/Inshi74/0054534.pdf>

Маринченко, Є. О. (2019). Дуальне навчання як важливий складник інноваційної підготовки майбутніх педагогів професійного навчання. *Вісник Черкаського національного університету імені Богдана Хмельницького. Серія: «Педагогічні науки»*, (1), 130–135. <https://doi.org/10.31651/2524-2660-2019-1-130-135>

Міністерство освіти і науки України. (2023). *Положення про дуальну форму здобуття вищої та фахової передвищої освіти*. <https://www.drs.gov.ua/wp-content/uploads/2023/03/1786.pdf>

Міністерство освіти і науки України. (2023, жовтень 20). *Попри війну понад 1 тис. бізнес-підприємств залучено до співпраці з профтехами – дані дуальної освіти на жовтень 2023*. https://mon.gov.ua/news/popri-viynu-ponad-1-tis-biznes-pidpriemstv-zalucheno-do-spiivpratsi-z-proftekhami-dani-dualnoi-osviti-na-zhovten-2023?utm_source

Радкевич, В. О., & Пригодій, М. А. (Ред.). (2024). *Інноваційна професійна освіта*, 6(19): Професійна освіта в умовах сталого розвитку суспільства: монографія. Київ: ІПО НАПН України. https://lib.iitta.gov.ua/id/eprint/743342/1/Monografia_2024_IPO.pdf

Савчук, Р. (2024). Розвиток дуальної форми навчання в системі професійної (професійно-технічної) освіти України. *Професійна педагогіка*, 1(30), 49–60. <https://doi.org/10.32835/2707-3092.2025.30.49-60>

Чайковська, А., Моргун, І., & Саєнко, Л. (Ред.). (2022). *Дуальна форма здобуття освіти: Успіхи та проблеми третього року запровадження пілотного проєкту у закладах вищої та фахової передвищої освіти України: Збірник матеріалів Міжнародної науково-практичної конференції, 23 листопада 2022 р.* Київ: Науково-методичний центр ВФПО.

Шикіна, О., & Кузнєцова, О. (2025). Сучасний стан, чинники та умови розвитку дуальної освіти України. *Економіка та суспільство*, (71). <https://doi.org/10.32782/2524-0072/2025-71-27>

Kovalchuk, V., Marynchenko, I., & Hrytsenko, L. (2019). Development of pedagogical mastery of future vocational training teachers under conditions of educational transformations. In *New stages of development of modern science in Ukraine and EU countries: Monograph* (pp. 186–208). Publishing House «Baltija Publishing».

Lavrentieva, O. O., Arkhypov, I. O., Kuchma, O. I., & Uchitel, A. D. (2019, March 22). Use of simulators together with virtual and augmented reality in the system of welders' vocational training: Past, present, and future. In *Augmented Reality in Education: Proceedings of the 2nd International Workshop (AREdu 2019)* (pp. 201–216). CEUR Workshop Proceedings, Kryvyi Rih, Ukraine.

Translated & Transliterated

Alieksieieva, H. M., & Horbatiuk, L. V. (2025). Tsyfrova reprezentatsiia rezultativ navchannia yak element dualnoi modeli u profesiinii osviti [Digital representation of learning outcomes as an element of the dual model in vocational education]. *Pedagogical Academy: Scientific Notes*, (19). <https://doi.org/10.5281/zenodo.15863643>, [in Ukrainian].

Barkar, V. I. (2023). *Dualna forma navchannia yak skladnyk sotsialnoho partnerstva v zakladakh profesiinnoi osvity* [Dual form of learning as a component of social partnership in vocational education institutions]: [Electronic educational course]. Kyiv: National Academy of Pedagogical Sciences of Ukraine, State Educational Institution “University of Education Management”, Bila Tserkva Institute of Continuing Professional Education.

<https://lib.iitta.gov.ua/id/eprint/735997/1/%D0%95%D0%BB%D0%B5%D0%BA%D1%82%D1%80%D0%BE%D0%BD%D0%BD%D0%B8%D0%B9%D0%BA%D1%83%D1%80%D1%81%D0%91%D0%B0%D1%80%D0%BA%D0%B0%D1%80.pdf>, [in Ukrainian].

Buchynska, O., Davlikanova, T., Ishchenko, I., Lylyk, A., Chaikovska, A., & Yashkina, O. (2022). *Analitichnyi zvit za rezultatamy tretoho roku pilotnoho proiektu, shcho realizuietsia vidpovidno do Nakazu MONU vid 15.10.2019 № 1296 «Shchodo zaprovadzhennia pilotnoho proiektu v zakladakh fakhovoi peredvyshchoi ta vyshchoi osvity z pidhotovky fakhivtsiv za dualnoiu formoiu zdobuttia osvity»* [Analytical report on the results of the third year of the pilot project, implemented in accordance with the Order of the Ministry of National Education of Ukraine dated 15.10.2019 No. 1296 “On the introduction of a pilot project in institutions of professional pre-higher and higher education for the training of specialists in the dual form of education”. Kyiv: Vistka Publ. <https://mon.gov.ua/static-objects/mon/sites/1/news/2023/02/02/Dual.studies-02.02.2023.pdf>, [in Ukrainian].

Chaikovska, A., Morhun, I., & Saienko, L. (Eds.). (2022). *Dualna forma zdobuttia osvity: Uspikhy ta problemy tretoho roku zaprovadzhennia pilotnoho proiektu u zakladakh vyshchoi ta fakhovoi peredvyshchoi osvity Ukrainy* [Dual form of education: Successes and problems of the third year of the pilot project implementation in higher and professional pre-higher education institutions of Ukraine]: *Collection of materials of the International Scientific and Practical Conference*, November 23, 2022. Kyiv: Scientific and Methodological Center of the Ukrainian Federation of Vocational Education and Training, [in Ukrainian].

DTEK Networks: Grids Distribution System Operator. (2025, January 21). *Dualna osvita v OSR DTEK Merezhi: 52% studentiv prodovzhuiut karieru v OSR* [Dual education in DSO DTEK Networks: 52% of students continue their careers in OSR]. https://grids.dtek.com/media-center/press/dualna-osvita-v-osr-dtek-merezhi-52-studentiv-prodovzhuyut-kareru-v-/?utm_source, [in Ukrainian].

Haiduk, O. V., Herliand, T. M., Homeniuk, D. V., Kulalaieva, N. V., Piatnychuk, T. V., & Shymanovskyi, M. M. (2023). *Naukovo-metodychne zabezpechennia profesiinoi osvity i navchannia: Metodichni zasady vprovadzhennia elementiv dualnoi formy navchannia v profesiinu pidhotovku maibutnikh kvalifikovanykh robitnykiv budivelnoi, mashynobudivnoi haluzei, sfery obsluhovuvannia ta hromadskoho kharchuvannia* [Methodological bases for introducing elements of the dual form of education into the professional training of future qualified workers in the construction, machine-building industries, service and catering sectors]: monograph (N. V. Kulalaieva, scientific ed.). Kyiv: Institute of Professional Education of the National Academy of Sciences of Ukraine, [in Ukrainian].

Institute of Educational Analytics. (2022). *Osnovni osvitni statystychni dani (2021-2022)* [The main educational statistics (2021-2022)]. https://iea.gov.ua/wp-content/uploads/2022/07/oosd_20220708.pdf, [in Ukrainian].

Kovalchuk, V. I., & Soroka, V. V. (2022). Zastosuvannia innovatsiinykh tsyfrovyykh tekhnolohii u pidhotovtsi pedahohiv dlia sfery profesiinoi osvity [Application of innovative digital technologies in the training of teachers for the field of vocational education]. In L. V. Baranovska, & L. I. Morska (Eds.), *Innovatsiini osvitni tekhnolohii: svitovi i vitchyzniani dosvid vykorystannia v systemi neperervnoi osvity* [Innovative educational technologies: world and domestic experience of use in the system of continuous education] (pp. 238–249). Bila Tserkva: Bilotserkivdruk Publ., [in Ukrainian].

Kovalchuk, V., Marynchenko, I., & Hrytsenko, L. (2019). Development of pedagogical mastery of future vocational training teachers under conditions of educational transformations. In *New stages of development of modern science in Ukraine and EU countries: Monograph* (pp. 186–208). Publishing House «Baltija Publishing».

Kravets, S., & Slobodianyuk, O. (2024). Rozvytok partnerstva u sferi profesiinoi osvity na zasadakh proiektnoi diialnosti [Partnership development in the field of vocational education via project-based activities]. *Adaptive Management: Theory and Practice. Series Pedagogics*, 18(35). [https://doi.org/10.33296/2707-0255-18\(35\)-17](https://doi.org/10.33296/2707-0255-18(35)-17), [in Ukrainian].

Kulalaieva, N. V., & Haiduk, O. V. (2023). Designing an effective educational production environment in vocational schools under dual vocational education]. *Professional Pedagogics*, 2(27), 107–119. <https://doi.org/10.32835/2707-3092.2023.27.107-119>

Lavrentieva, O. O., Arkhypov, I. O., Kuchma, O. I., & Uchitel, A. D. (2019, March 22). Use of simulators together with virtual and augmented reality in the system of welders' vocational training: Past,

present, and future. In *Augmented Reality in Education: Proceedings of the 2nd International Workshop (AREdu 2019)* (pp. 201–216). CEUR Workshop Proceedings, Kryvyi Rih, Ukraine.

Ministry of Education and Science of Ukraine. (2023). Regulations on the dual form of obtaining higher and professional pre-higher education. <https://www.drs.gov.ua/wp-content/uploads/2023/03/1786.pdf>, [in Ukrainian].

Ministry of Education and Science of Ukraine. (2023, October 20). *Popry viinu ponad 1 tys. biznes-pidpriemstv zalucheno do spivpratsi z proftekhamy – dani dualnoi osvity na zhovten 2023* [Despite the war, more than 1 thousand business enterprises are involved in cooperation with vocational schools – dual education data as of October 2023]. https://mon.gov.ua/news/popri-viynu-ponad-1-tis-biznes-pidpriemstv-zalucheno-do-spivpratsi-z-proftekhami-dani-dualnoi-osviti-na-zhovten-2023?utm_source, [in Ukrainian].

Radkevych, V. O., & Pryhodii, M. A. (Eds.). (2024). *Innovatsiina profesiina osvita, 6(19): Profesiina osvita v umovakh staloho rozvytku suspilstva* [Innovative Vocational Education, 6(19): Vocational Education in the Conditions of Sustainable Development of Society]: monograph. Kyiv: IPO NAPS of Ukraine. https://lib.iitta.gov.ua/id/eprint/743342/1/Monografia_2024_IPO.pdf, [in Ukrainian].

Savchuk, R. (2024). The development of dual education in the system of vocational (vocational-technical) education in Ukraine. *Professional Pedagogics*, 1(30), 49–60. <https://doi.org/10.32835/2707-3092.2025.30.49-60>

Shykina, O., & Kuznietsova, O. (2025). Current status, factors and conditions for the development of dual education in Ukraine. *Economy and Society*, (71). <https://doi.org/10.32782/2524-0072/2025-71-27>, [in Ukrainian].

DOI: <https://doi.org/10.32835/2707-3092.2025.30.279-292>

МЕТОДИЧНІ АСПЕКТИ ПІДГОТОВКИ БАКАЛАВРІВ З ПРОФЕСІЙНОЇ ОСВІТИ У ГАЛУЗІ БУДІВНИЦТВА І ЗВАРЮВАННЯ ДО ОРГАНІЗАЦІЇ ДУАЛЬНОГО НАВЧАННЯ

Олег Кучер

здобувач ступеня доктора філософії, Глухівський національний педагогічний університет, імені Олександра Довженка, <https://orcid.org/0009-0003-0740-8463>, e-mail: Oleg.-k@ukr.net

Реферат:

Актуальність у сучасних умовах трансформації системи професійної освіти України зростає потреба у впровадженні дуальної форми навчання, що забезпечує підвищення конкурентоспроможності майбутніх фахівців і посилює зв'язок закладів освіти з ринком праці; водночас спостерігаються труднощі, пов'язані з недостатньою підготовленістю педагогів професійного навчання.

Мета: висвітлити теоретичні та методичні засади підготовки бакалаврів з професійної освіти у галузі будівництва і зварювання до організації дуального навчання, розкрити специфіку етапів та методичних інструментів цієї підготовки.

Метод: аналізу, синтезу, порівняння, систематизації і узагальнення, проектування та моделювання – для виявлення сутності та специфіки дуальної освіти, розроблення змісту й етапів підготовки бакалаврів до організації дуального навчання.

Результати: встановлено, що ефективна підготовка бакалаврів з професійної освіти у галузі будівництва і зварювання до організації дуального навчання передбачає комплексне оновлення змісту й методики професійної підготовки; визначено її ключові орієнтири (формування правової, організаційної, методичної, психолого-педагогічної та інформаційно-цифрової готовності педагога до роботи у дуальному середовищі); розроблено відповідну модель, що охоплює чотири взаємопов'язані етапи (базово-орієнтаційний, теоретико-методичний, практико-орієнтований, підсумково-діагностичний); розкрито напрями оновлення змісту навчальних дисциплін професійної і фахової підготовки педагогів професійного навчання в контексті організації дуального навчання; презентовано зміст та методичний інструментарій для курсу «Дуальна освіта: виклики,

можливості і кар'єрні перспективи».

Висновки: запропонована модель може стати основою для подальшого вдосконалення освітньо-професійних програм підготовки педагогів професійного навчання до організації дуального навчання, а її впровадження сприятиме підвищенню якості надання освітніх послуг у закладах професійної та фахової передвищої освіти.

Ключові слова: *дуальна освіта, професійна підготовка, педагог професійного навчання, методика, методичний інструментарій, модель підготовки.*

Manuscript received: 11.01.2025

Accepted for publication after peer review: 21.04.2025

Published: 19.06.2025