

Thomas Deissinger, Oksana Melnyk (Eds.)

Partnership-Based Governance and Standardization of Vocational Teacher Education in Ukraine



Co-funded by the
Erasmus+ Programme
of the European Union

**Partnership-Based Governance
and Standardization of Vocational
Teacher Education in Ukraine**

Thomas Deissinger, Oksana Melnyk (Eds.)

Series “Vocational Education, Work and Innovation”

The series “Vocational Education, Work and Innovation” offers a forum for basic and application-oriented vocational education and training research. It makes a contribution to the scientific discourse on innovation potentials of vocational education and training. It is aimed at a specialist audience from universities and research and research institutions as well as from school and company policy and practice fields.

The series is divided into two main areas:

- Vocational education, work and innovation (main series)
- Dissertations/Habilitations (sub-series).

Series editor:

Prof.in Dr.in habil. Marianne Friese

Justus Liebig University Giessen
Institute for Educational Science
Chair of Vocational Education/Labour Studies

Prof.in Dr.in Susan Seeber

Georg August University Göttingen
Chair of Business Education and Human Resource Development

Prof. Dr. Lars Windelband

University of Education Schwäbisch Gmünd,
Professorship for Technology and its Didactics at the Institute for Education, Career and Technology.

Scientific Advisory Council

- Prof. Dr. Matthias Becker, Hannover
- Prof.in Dr.in Karin Büchter, Hamburg
- Prof. Dr. Frank Bünning, Magdeburg
- Prof. Dr. Hans-Liudger Dienel, Berlin
- Prof. Dr. Uwe Faßhauer, Schwäbisch-Gmünd
- Prof. Dr. Karl-Heinz Gerholz, Bamberg
- Prof. Dr. Philipp Gonon, Zürich
- Prof. Dr. Dietmar Heisler, Paderborn
- Prof. Dr. Torben Karges, Flensburg
- Prof. Dr. Franz Ferdinand Mersch, Hamburg
- Prof.in Dr.in Manuela Niethammer, Dresden
- Prof.in Dr.in Karin Reiber, Esslingen
- Prof. Dr. Thomas Schröder, Dortmund
- Prof.in Dr.in Michaela Stock, Graz
- Prof. Dr. Tade Tramm, Hamburg
- Prof.in Dr.in Ursula Walkenhorst, Osnabrück

Weitere Informationen finden
Sie auf wbv.de/bai

Thomas Deissinger, Oksana Melnyk (Eds.)

Partnership-Based Governance and Standardization of Vocational Teacher Education in Ukraine



Co-funded by the
Erasmus+ Programme
of the European Union

wbv

The project number is 609536-EPP-1-2019-1-DE-EPPKA2-CBHE-SP. This project has been funded with support from the European Commission. The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

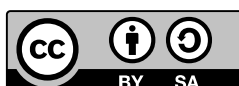
Vocational training, work and innovation –
Main series, volume 82

This publication is freely available for download at
wbv-open-access.com

2024 wbv Publikation
a business division
wbv Media GmbH & Co. KG, Bielefeld

This publication, with the exception of the cover photo, is
published under the following Creative Commons licence:
<http://creativecommons.org/licenses/by-sa/4.0/deed.de>

Overall production:
wbv Media GmbH & Co. KG, Bielefeld
wbv.de



Cover design: 1expert, 123rf

All trade names, company names and brand names used
in this work and company and brand names used in this
work may be protected by intellectual property rights,
even if they are not designated as such. Their use in this
work does not justify the assumption that they are freely
available.

ISBN (Print): 978-3-7639-7668-3
ISBN (E-Book): 978-3-7639-7669-0
DOI: 10.3278/9783763976690

Printed in Germany

Bibliographic information of the German National Library

The German National Library lists this publication in the German National Bibliography;
detailed bibliographic data are available on the Internet at <http://dnb.d-nb.de>.

The free availability of the e-book edition of this publication was made possible by a network of academic libraries and institutions for the promotion of Open Access in the social sciences and humanities as part of the *wbv OpenLibrary 2024*.

The publication complies with our quality standards for Open Access publications, which can be found at:

https://www.wbv.de/fileadmin/importiert/wbv/PDF_Website/Qualitaetsstandards_wbvOpenAccess.pdf

Many thanks to the sponsors of the *wbv OpenLibrary 2024* in the Department of *Vocational and Business Education*:

Otto-Friedrich-Universität **Bamberg** | Humboldt-Universität zu **Berlin** | Universitätsbibliothek **Bielefeld** | Bundesinstitut für Berufsbildung (BIBB, **Bonn**) | Rheinische Friedrich-Wilhelms-Universität **Bonn** | Universitäts- und Landesbibliothek **Darmstadt** | Goethe-Universität **Frankfurt am Main** | Pädagogische Hochschule **Freiburg** | Justus-Liebig-Universität **Gießen** | Fernuniversität **Hagen** | TIB **Hannover** | Universitätsbibliothek **Kassel** | **Karlsruhe** Institute of Technology (KIT) | Universitätsbibliothek **Kiel** | Universitäts- und Stadtbibliothek **Köln** | Zentral- und Hochschulbibliothek (ZHB, **Luzern**) | Hochschule der Bundesagentur für Arbeit (**Mannheim**) | Fachhochschule **Münster** | Carl von Ossietzky Universität **Oldenburg** | Landesbibliothek **Oldenburg** | Universitätsbibliothek **Osnabrück** | Universität **Potsdam** | Universitätsbibliothek **St. Gallen**

Contents

Preface	9
<i>Thomas Deissinger & Oksana Melnyk</i> Introduction	11
PART I. Theory and Practice of Governance in Teacher Training for Vocational Education and Training (VET)	15
<i>Lena Freidorfer & Philipp Gonon</i> The Vocational School Teacher (VET Teacher) Training System in Switzerland ...	17
<i>Erica Smith</i> VET Teacher Education in Australia: Three Levels across Two Sectors	35
<i>Kevin Orr & Nena Skrbic</i> Initial Teacher Education in the English Further Education Sector: Continuity and Crisis	63
<i>Selena Chan</i> Reform of Vocational Education (RoVE) in Aotearoa New Zealand: Implication on the Educators of VET Teachers	79
<i>Thomas Deissinger & Oksana Melnyk</i> Vocational Teacher Training in Germany from the Governance Perspective	95
<i>Richard Fortmüller</i> Standards in Vocational Education and Teacher Training in Austria	115
<i>Paolo Di Rienzo & Giovanni Serra</i> Adult Education and Lifelong Learning: Strategic Competences and Teacher Professionalisation	131

PART II. Changes and Cooperation at the Project Partner Higher Education Institutions (HEIs) in Ukraine	147
<i>Svitlana Tsymbaliuk, Maryna Artiushyna, Oksana Sarkisova, Tetiana Shkoda & Larysa Korvat</i>	
Institutional Changes and Partnership-Based Governance at Kyiv National Economic University named after Vadym Hetman	149
<i>Valentin Usov, Tetiana Petukhova, Volodymyr Chernykh & Viktoriia Kozak</i>	
Implementation of Cooperation and Partnership in the Training of Teachers of Vocational and Technical Education at South Ukrainian National Pedagogical University named after K. D. Ushynsky	173
<i>Mykola Dmytrychenko, Nataliia Bondar, Oleksandr Hryshchuk, Khalidakhon Bakhtiyarova & Lesia Shevchuk</i>	
Using New Approaches Based on Partnership in Training Vocational Teachers of Transport at National Transport University	193
<i>Olena Kovalenko, Nataliia Briukhanova, Liudmyla Shtefan, Tatiana Bondarenko, Hanna Korniyush & Nataliia Korolova</i>	
Establishing Excellence in Vocational Education Teacher Training at Ukrainian Engineering Pedagogics Academy	221
PART III. Ukrainian Vocational Teacher Training in a Broader Context	259
<i>Valentyna Radkevych, Viktoriia Kruchek, Mykola Pryhodii & Daria Voronina-Pryhodii</i>	
Standards in Vocational Teacher Education in Ukraine: Problems and Fields of Tension	261
<i>Oleksandr Kupriyanov, Tetiana Bondarenko, Halyna Yelnykova, Denys Kovalenko, Roman Nesterenko & Tetiana Ruslanova</i>	
Civil Society and Policy Dialogue in Vocational Education and Training	293

Preface

The goals to ensure inclusive and equitable quality education, promote lifelong learning opportunities for all, and foster sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all are among the 17 goals outlined by the United Nations for sustainable development (SDG 4 and SDG 8). Vocational teachers play a crucial role in the successful achievement of these goals. Therefore, the attention devoted to matters of vocational teacher education should not only be the concern of researchers and scientists but also the focus of policymaking.

It is my honour and pleasure to introduce this preface to a book that addresses and delves into the pressing issues within vocational teacher education. It offers valuable insights to those seeking answers and solutions for challenges in vocational education, the labour market, and youth employment. These complex issues can only be effectively addressed with the assistance of qualified and motivated vocational teachers possessing the necessary and relevant competences to navigate these domains.

This book is the result of a four-year Erasmus + project titled “New Mechanisms of Partnership-based Governance and Standardization of Vocational Teacher Education in Ukraine” (PAGOSTE). While changes in any system take time, the initiatives introduced by this project in vocational teacher training in Ukraine have set the stage for success. Processes aimed at enhancing governance and fostering collaboration among various stakeholders have been set in motion. Despite external challenges such as the Corona pandemic and the Russian aggression, progress has been made, and the momentum continues.

I believe that the insights shared in this book can inspire and encourage the implementation of positive changes in vocational teacher education. By doing so, we can ensure that the welfare of tomorrow is safeguarded by the dedicated vocational teachers of today.

Oksen Lisovyi

Minister of Education and Science of Ukraine

1 Improving the System of Teacher Training in Vocational Education: Challenges and Strategies

Under modern conditions, the existing system of teacher training and retraining within vocational education has certain shortcomings: imperfect social partnership, insufficient educational component in the training of vocational masters, and a lack of mechanisms for conducting work-placed (technological and project-technological) practice at employers' enterprises. The Strategy for the Development of Vocational and Technical Education for the period until 2023, which was adopted at the meeting of the Ministry of Education and Science (MES) of Ukraine on 21 December 2020 (Strategy, 2020), states that the renewal of the vocational and technical education system over the next three years will take place under four key conditions: building an effective management system, strengthening cooperation between educational institutions and business, and improving as well as popularizing the content and quality of vocational education. The implementation of the outlined problems is possible through the improvement of social partnership and the modernization of the model of training future specialists in vocational education and retraining teachers of vocational and technical education so that their level of professional training meets the modern requirements of the labour market. In this context, the practical component of professional training requires the use of modern equipment and technologies in the process of forming the professional competencies of future specialists.

Vocational education should have certain features that distinguish it from secondary education. First, students of vocational education in the process of learning must master various technical and technological skills in addition to mastering theoretical knowledge. Practical (applied) activity should become the main method of learning that students encounter in vocational education. Through the application of a reasoned algorithm that enables practical activities to be combined with theoretical erudition, theoretical concepts can facilitate technological comprehension, while empirical application serves to authenticate the instantiation of the aforementioned technology. This synthesis augments students' technical mastery and establishes a robust basis for their forthcoming integration into society. The ascendancy of applied activities as the primary pedagogical approach encountered within vocational education is essential to this academic framework. The instructional objectives of vocational education, encompassing both curriculum mandates and the adept handling of a specialized apparatus and its administration, are inherently intertwined with the ongoing reinforcement of practical application and the harmonization of theoretical and empirical facets (Lin Deng, 2021).

Technological advances related to computer knowledge, skills, and abilities are essential for the today's society. Computer technologies are becoming an important and effective tool in the transmission of information. These advanced technologies also play an important role in helping teachers convey their explanations to students. Many changes have occurred in this area, and these changes are particularly important for

vocational education in supporting the development of occupational specialties (Buntat, 2010).

The previous experience of training students in speciality 015 “Vocational Education (Design)” at the first (bachelor’s) level showed certain shortcomings in the training system. When students were trained in speciality 015 “Vocational Education (Design)”, cooperation was carried out mainly with the state educational institution “Odesa Vocational Lyceum of the Service Sphere of the State Institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky””, the state institution “Odesa Centre of Vocational and Technical Education of the State Employment Service”, the limited liability company “Industrial clothing design”, the publishing house “Astroprint”, the state vocational and technical educational institution “Odesa Professional Lyceum of Technologies and Design”, and the private enterprise “Odesa Private Computer College”.

The governance system is practised as follows: The Ministry of Education and Science of Ukraine develops standards, while the working group of the university forms educational and professional programmes and develops curricula of disciplines for speciality 015 “Vocational Education (Design)”. Then accreditation of educational programmes takes place based on the results. The students of Ushynsky University carry out interaction with the above-mentioned institutions through work-placed internships. This direction of cooperation is not sufficient to train a teacher to work at a vocational education institution, considering the fact that the training of such teachers in Ukraine is based on a single phase. After studying at a university and obtaining a bachelor’s degree in speciality 015 “Vocational Education (Design)”, a young specialist must possess the necessary level of theoretical knowledge and practical skills in the speciality and have the necessary level of pedagogical skills to work as a teacher at a vocational education institution and to teach vocational education and training (VET) students the relevant profession.

The lack of training and professional self-identification as a teacher of a vocational and technical education institution is manifested in the survey of third- and fourth-year higher school students majoring in speciality 015 “Vocational Education (Design)” at Ushynsky University (Usov, 2020): Most significantly, the students lacked professional (47 %) and pedagogical (20 %) knowledge and skills for classes.

The level of preparedness for classes at vocational institutions was assessed as “very good” by 5 %, as “good” by 45 %, and as insufficient by 30 % of the students, while 20 % found it difficult to answer. Such indicators should be taken into account during the training of students (future vocational teachers for the formation of the necessary competencies). It turned out that students have a quite limited awareness of vocational and technical education institutions where they can be employed after graduation: Only 13 % of the surveyed students said that they were fully informed, 40 % had limited information, and 47 % were not informed. After graduation, 53 % of the respondents answered that their work would not be related to teaching, 17 % expressed a desire to provide educational services on a commercial basis, 9 % planned to work at Higher Education Institutions (HEI), and 21 % had not yet decided (Usov, 2020).

It is also worth paying attention to the results of the national survey conducted in 2020 by the Institute of Vocational Education (Erasmus+ project PAGOSTE, 2020) regarding cooperation between various stakeholders, which revealed that young teachers lack the practical pedagogical skills to work at vocational institutions. According to the results of the survey, most teachers at higher education institutions and pedagogical workers at vocational and technical education institutions have experience in cooperation and exchange, but it is often limited to the organization of work-placed (pedagogical) practices and internships. The factors that hinder such cooperation between VET schools HEIs and stakeholders are as follows:

- lack of opportunity to directly participate in the production process at a factory, taking into account distance learning;
- inconsistency of the training level of VET students with the modern requirements of employers;
- the need to implement various types of specialized practices, for example, design, construction, etc.) (Henseruk, 2022; Pasichnyk, 2021).

In order to improve the current situation with the quality of vocational teacher training and its compliance with the needs of vocational education institutions and the labour market within the framework of the ERASMUS+ project PAGOSTE, Ushynsky University developed the Concept of Partnership Governance of Vocational Teacher Training (hereinafter the “Concept”) (The Concept of Partnership Governance of Vocational Teacher Training at the State Institution “Southern Ukrainian National University named after K. D. Ushynsky”, 2021). The main features of the Concept are:

- facilitating the propagation of favourable outcomes arising from the application of partnership-driven mechanisms and standardization practices at Ushynsky University to other HEIs engaged in vocational teacher training;
- forging proficient collaborative ties involving Ushynsky University, vocational education institutions (vocational schools, colleges, centres, etc.), and additional stakeholders to engender productive engagement;
- providing the widespread dispersion of favourable consequences arising from the assimilation of collaborative partnership mechanisms and uniform methodologies within Ushynsky University, thereby extending their influence to encompass a diverse spectrum of higher education institutions specializing in vocational teacher training and devoted to the education of proficient experts within the realm of vocational education. On the one hand, establishing cooperation on the organizational level of vocational teacher training, for example through partnership agreements with vocational and technical education institutions for their involvement in the educational process, will increase the level of the pedagogical component of specialist training. In particular, this includes teaching practical disciplines in pedagogy, teaching methods, working as part of an attestation commission, helping to conduct work-placed (pedagogical) practices, conducting research within the scope of qualification (coursework) projects at a professional education institution, participating in the development of educational and train-

ing programmes regarding the definition of the scope and content of practice and the ratio of professional and pedagogical disciplines, and conducting joint research projects and joint career guidance work.

On the other hand, the conclusion of partnership agreements with employers in the field of design will contribute to the improvement of the professional qualification of the scientific and pedagogical staff of Ushynsky University, as well as the professional component of the training of students, by involving artists and masters representing the field of design in the educational process. This includes teaching practical (applied) disciplines (master classes, workshops, presentations), participating in various stages of production (pedagogical, design, technological) practice and evaluation, conducting research within the framework of qualification (coursework) projects with partners, etc. (Morze et al., 2019).

The organization of work at the educational and institutional levels was envisaged as a means of more effectively ensuring the expected results of cooperation with employers and stakeholders. The educational level provides for the necessary conditions:

- inclusion of educators from vocational and technical education institutions in instruction for the psychological-pedagogical curriculum segment, entailing the design of a syllabus wherein a reduced array of subjects is delivered by active practitioners; this restructuring aims to enhance the calibre of hands-on pedagogical competencies and the depth of professional-pedagogical affinity;
- an increase in the number of practice blocks due to the implementation of various types of specialized practices, which involves the conclusion of contracts on practising within the framework of partnership relations;
- involvement in the development of educational and professional programmes and internship training programmes, development of reporting documentation on internships, drawing up of internship schedules;
- creation of an attestation commission consisting of representatives of vocational and technical education institutions, employers, and HEI teachers in order to determine the criteria and indicators for assessing the quality of knowledge and skills of higher school students, which will ensure a more objective assessment.

At the institutional level, the organization of the cooperation process is provided under these conditions:

- creation of the "Resource Centre for Professional Education in Design Technologies" for the implementation of an educational and production-oriented platform of partnership interaction;
- search for partners, development and conclusion of partnership agreements to increase practice places for students, recruiting of personnel for teaching certain practical disciplines;
- cooperation with vocational and technical education institutions that have supervisory boards and can propose the participation of Ushynsky University teachers

in such boards in order to better understand the needs of vocational and technical education institutions.

Thus, the training of vocational education teachers will be covered at all levels and supported by both the educational system and the formed practical (production-oriented) environment with social feedback.

2 Enhancing Pedagogical Approaches in Vocational Education

The study programme in speciality 015 “Vocational Education (Design)” consists of an educational component and a professional component and is based on the educational programme alongside the developed educational and methodological complex. The educational component includes professional training according to the educational and professional programme in the format of theoretical and subject-centred training (lectures, practical classes, seminars, etc.) The professional component involves practical (production-oriented) training according to practice programmes in the form of project-technological activities, including master classes and workshops.

The educational programme “015 Vocational Education (Design)” provides training for future teachers of vocational education in computer (graphic) design and clothing design. Students determine the direction of training by means of elective disciplines (The Cabinet of Ministers of Ukraine, 2021).

Future teachers of vocational and technical education should master appropriate software for designing clothes (Buntat, 2020). The most effective form of mastering applied skills with the application of theoretical knowledge is project activity, which has several stages. The preparatory stage involves the study and accumulation of information related to the topic of the project. Furthermore, the information is processed and analysed and sorted into several groups if necessary. This stage plays a key role in the initial stage of the project, because it is the careful processing and analysis of the received information that determines successful and high-quality work. At this stage, students use the theoretical knowledge and practical skills they have acquired in educational (familiarization) practice and work with information sources. At the next stage, students should be engaged in designing, constructing, modelling, preparing the necessary templates or layouts for, and developing a design object. The design stage also includes the creation of sketches and a digital model of the product. The nature and general concept of the work depends on the author’s goal. Recently, computer technologies have significantly influenced the design process. It is at this stage that students use the acquired practical skills in workshops and master classes and during production-oriented (technological) practice.

For fruitful work in design construction, future teachers of vocational and technical education should master the appropriate computer software in addition to the necessary equipment available at the centre. Mastering the skills of working with such

support takes place in the process of cooperation with employers in accordance with the specifics of project activity tasks. In particular, the automatic design system (CAD) and the junior software product are mastered by students on the basis of the limited liability company “Industrial Clothing Design” during production-oriented (project-technological) practice. The result – the finished product—depends on how accurately and correctly the technological process is organized. Quality is determined by the technical component, namely the presence of a good basis: modern printers, scanning machines, and additional equipment. The design development of a modern product requires significant capabilities in computer technologies, and mastering them can be ensured through partner cooperation with the manufacturer; in particular, students master the skills of working with powerful 3D object modelling equipment at the publishing house “Astroprint” and the state institution “Odesa Centre of Vocational and Technical Education State Employment Service”. The project is finalized at the final stage, in which computer technologies play a special role. For example, a studio shooting of a finished collection or individual sewing products is carried out. Students study software packages of graphics editors such as Photoshop, Corel Draw, InDesign, and Illustrator at the computer laboratory of the private enterprise “Odesa Corporate Computer College”. Subsequently, they study fashion photograph composition, encompassing the use of computerized image manipulation techniques. The aspiring fashion design educators use graphic software to complete creative and design-oriented tasks. A command of web design affords the potential to ensure superior consumer attributes and aesthetic merits in the design outcomes of crafting and conceiving elements within the online information milieu.

For example, first-year students majoring in speciality 015 “Vocational Education (Design)” attended the guest lecture “On the Peculiarities of Textile Materials in the Design of Soft Toys” by the leading teacher-technologist Viktoriia Sokolova, who presented the specifics of selecting and the technology of using textile materials in designing soft toys, as well as some marketing features (Briukhanova, 2021).

The leading designer and owner of the studio “Orlova Agency”, Maria Orlova, held a presentation on packaging design and planning technology and a master class on the features of material use, the design of packaging for children’s toys, and the organization of an advertising company.

The main task of improving the quality of vocational teacher training at the state institution “South Ukrainian National University named after K. D. Ushynsky” is carried out by the “Resource Centre for Vocational Education in Design Technologies” (hereinafter “the Centre”) (Figure 1). Its defined tasks are the following:

- to train students for employment at the stage of education through the development of professional and general professional competencies;
- to ensure effective interaction and coordination between the Centre, faculty, and departments in determining ways of transforming and elaborating all types of activities aimed at developing competencies in the profession;

- to implement the requirements of the state education standards, educational and professional programmes, and curricula for the training of specialists in the field of competency development and employment;
- to ensure interaction with employers on the basis of the principles of partnership in matters concerning students undergoing work-placed practice; to implement a qualitative approach to the organization of the process of vocational training targeted at future specialists, establishing the ways to ensure the competitiveness of future specialists; to assess the quality of vocational training of future specialists and their employment;
- to create an electronic basis for professional development of teachers of vocational and technical education institutions (Polozhennia, 2021).

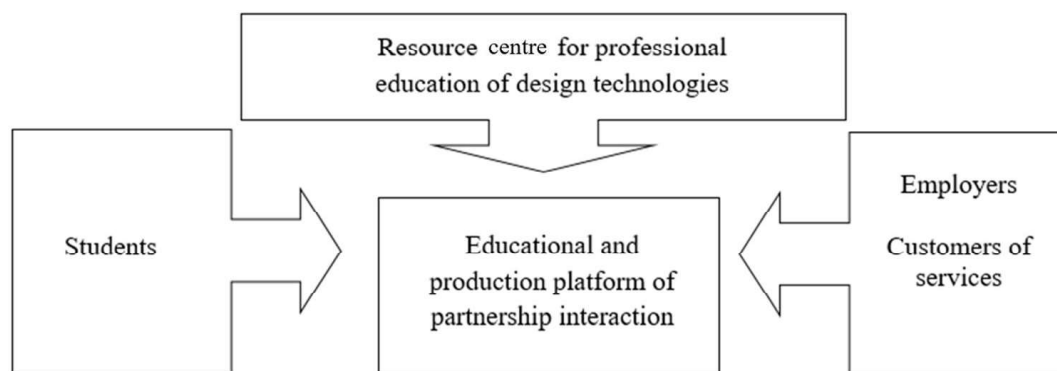


Figure 1: Structure of the Centre (Source: Polozhennia, 2021)

Improvements in the quality of vocational (work-placed) and pedagogical training of future vocational teachers are carried out via joint career guidance both at the institution and on online platforms while students are completing work-placed practice (Kiiashchenko, 2022).

During production-oriented (technological) practice, students have the opportunity to familiarize themselves with the properties of materials, their structural functions, processing technologies, and the use of equipment at various stages of product manufacturing. In qualification (course) projects for professional and practical training, students use the material received creatively to solve tasks involving real projects from manufacturers.

After learning about the features of certain technologies and material processing, students receive a general task of creating a product and prepare their own design proposals for the development of creation elements and production calculations. Students also present implementation calculations and marketing proposals. This approach to fostering collaboration is significant in that it facilitates the acquisition of the vocational (production-oriented) dimension within the context of production-oriented (design-technological) practice, as part of the training mode for prospective vocational education instructors. This is realized through the execution of collaborative creative ventures involving students and the manufacturing sector, notably exemplified by the

limited liability company “Industrial Clothing Design” and its production of fashion collections.

This type of cooperation is recommended for situations in which different groups or entities work together. Specifically, it involves collaboration between the groups to create designs for bow clothing, which includes details like prints and accessories. Each separate group is responsible for developing various aspects of the clothing, such as the patterns, designs, and additional decorative elements. This type of cooperation involves a division of labour in which each group contributes to the overall creation of bow clothing by focusing on specific components and details. Each group consists of two to three students, a university teacher, and a production master. The “applicability” of certain solutions is agreed upon, the level of mastery of acquired knowledge and skills in practice is revealed, and compositional elements and minor details are adjusted at each stage of production.

The joint project between students and the publishing house “Astroprint” on the implementation of project tasks related to the development of the design of printed products and the corporate style of the thematic publication contributes to the formation of professional competencies and the training of specialists in a real-time mode. Students gain experience in solving not only purely design tasks of projects but also tasks of a logistical and ergonomic nature in the organization of the technological process and entrepreneurship as a whole. The stakeholders proposed introducing the basics of entrepreneurship in the field of design and determined relevant competencies to be developed in the educational and professional programme.

It should be emphasized that from among a series of similar projects, the one that will achieve the greatest success, particularly from the viewpoint of the manufacturer or company, is that which is carried out in partnership with a student. This collaboration involves a specific project period during which the student is employed by the manufacturer. The positive results obtained from these aligned projects highlight that the manufacturer finds the student-involved project to be the most successful and effective. Such cooperation is “mutually profitable”: Students learn practical work skills under production conditions, and the manufacturer receives creative ideas, an interesting vision of performing tasks, and even non-standard approaches in the combination or use of materials, as well as a potential future employee. This is especially evident at the stage of marketing research and in the development of advertising proposals for both product presentation and methods of distributing advertising information.

During production-oriented (pedagogical) practice, students gain experience in the peculiarities of the educational process of teaching profession-oriented disciplines (Butilina, 2022; Methodical recommendations, 2020). Thus, during such practice on the platform of the state educational institution “Odesa Vocational Lyceum of the Service Sphere of Ushynsky University”, students master the pedagogical technologies of organizing the educational process of a mixed format (Law of Ukraine, 2022). The educational platform presents classwork covering theoretical material and technological cards and processes under the guidance of the teacher in an online format. The students apply methods for creating pedagogical conditions during practical work in work-

shops in interaction with the master of work-placed training. The topic of the classes is approved, but the students can choose the product, materials, and method of production at the lessons, depending on the goals and the structure developed for the class. Credit classes are evaluated by a commission including a teacher of the VET institution, a master of work-placed training, and a teacher of Ushynsky University.

The process of assessing the pedagogical practice of the Ushynsky University students, which takes place at the Odesa Professional Lyceum of Technology and Design, includes several key stages that contribute to a balanced and comprehensive analysis. At the first stage, teachers from both Ushynsky University and the partner educational institution evaluate the interns. This provides an analysis of the quality of the internship by experts who have a deep understanding of educational standards and requirements. The second stage is the evaluation by fellow students, the so-called “peer-to-peer assessment”. This form of assessment allows students to review the practice of colleagues from the same level and understand what aspects were successful for their peers. This approach to practicum assessment helps to establish an objective assessment and provides a wider range of means to test students’ competencies. This way of assessment helps to improve the quality of education of future teachers and introduce advanced pedagogical approaches. A methodologist manages the intern’s planning of their work from the educational institution, and a senior master of work-placed training carries out the practical (production-oriented) component. Assessment of credit classes is carried out by a commission including a director, a methodologist, a master of work-placed training, and a teacher of Ushynsky University.

Students use pre-developed material when performing qualification (coursework) on theory and teaching methods. During the research, students then substantiate the expediency of using theoretical material (didactic principles, methods, pedagogical technologies, etc.) in the practical application for conducting classes on the demonstration of knowledge and the development of practical skills. Also they need to identify the shortcomings and advantages of modern learning and production technologies in accordance with the available equipment.

During production-oriented (pedagogical, technological design-technological) internships at the state institution “Odesa Centre of Vocational and Technical Education of the State Employment Service”, students master the skills of working under conditions of vocational training. The students determine the structure and content of the classes, taking into account most of the practical part and the real needs of the students. The content of the material and the algorithm for mastering certain skills in computer technologies or clothing modelling of each group will differ depending on the readiness of the students. At this institution, students conduct research on the labour market and the competitiveness of professions and demands.

This method is the most effective means of supporting the partnership between an educational institution and production representatives for the training of specialists who possess knowledge of the latest technologies and equipment, which is essential for making adjustments both to the content of the vocational (production-oriented) component and to the definition of new approaches and methods of teaching (educational

component). Implementation of this cooperation method already takes place at the stage of development of educational-professional programmes within the framework of partnership support and public discussions and meetings with representatives of educational institutions and production platforms of practices as potential employers for considering the programme content and clarifying professional competencies. This organization of cooperation and partnership has a more effective influence on the definition of the content, terms, and volume of practices, because the peculiarities of teaching profession-oriented disciplines are agreed upon in the discussions and the need to include elective disciplines in the vocation list in various directions is considered in accordance with modern achievements in the field of design. As a result of the discussions, the stakeholders made the following proposals within the period from 2020 to 2023:

- the ability to organize the design-projecting process in accordance with modern technical and technological requirements was added to professional competencies;
- the number of tutorial hours for the practical study of modern software in the speciality was increased;
- computer technology courses in design, project management in education, and entrepreneurship in the field of design were introduced as mandatory components;
- the content of practical tasks aimed at developing autonomous decision-making competencies in defining a design-project object was adjusted (Ivashov, 2021).

For example, one of the creative tasks of the qualification (course) project for students was to choose at their own discretion a certain enterprise or institution, to conclude a cooperation agreement with them (or to conclude a cooperation agreement with the existing collaborators), and to independently determine the design of the project implementation algorithm. Also, production-oriented (project-technological) practice was introduced in 2020 at the suggestion of the stakeholders. This strengthened the professional component of students' professional competence in the organization and management of education/production projects.

The involvement of employers in the certification of graduates contributed to a more appropriate development and adjustment of the quality assessment of the vocational students' proficiency levels.

The presented structure of vocational education teacher training serves as a model for cooperation with stakeholders and helps to improve the quality of training for future vocational education teachers in the field of practical (work-placed) training under production-oriented conditions. This is evidenced by the results of repeated surveys of graduates regarding the assessment of their proficiency level for teaching at vocational and technical education institutions: 15 % of the students rated their level as "very good", 63 % as "good", 14 % as insufficient due to difficult online teaching/learning conditions, and 8 % found the question difficult to answer. At the same time, the students' awareness of institutions of vocational and technical education at which they can

get a job after graduation increased to 34%, while 21% of the respondents indicated that their professional activity would be related to teaching activities at educational institutions and 13% stated that they planned to provide educational services on a commercial basis and become specialists in the design industry. Simultaneously, there was an increase in the number of entrants to speciality 015 “Vocational Education (Design)” at Ushynsky University from educational institutions where students underwent work-placed practice and from those where career guidance work included master classes conducted under the guidance of teachers and/or work-placed training masters.

Equally important in improving the quality of vocational teacher training is the holding of round tables to discuss the need for qualified teachers of vocational education institutions. The necessary condition for ensuring the required professional level of the educational component of masters is advanced training in a binary format in the form of conducting classes in professional and practical training, master classes (Concept, 2021).

The further training of vocational teachers takes place according to the training programme in the form of teaching theoretical material through presentations, conducting practical classes, seminars, master classes, and workshops with the involvement of industry specialists, and participating in the certification of higher school students (Osadcha, 2021). The training of scientific and pedagogical workers takes place according to the training programme in the form of teaching, conducting research, and discussing the results (seminars, training courses, workshops). The advanced training of other HEI staff (from other HEIs) takes place according to the programme, and the training (internship) is performed on the platform of the Centre of Ushynsky University to improve vocational training according to the branch component. The materials and the training structure of vocational teachers alongside their professional development are developed in cooperation with vocational education institutions.

The training of various categories of trainees and students, in particular that of industry specialists, is provided on the basis of specially developed programmes. These programmes are educational and methodological complexes of professional development designed to help students obtain a sufficient proficiency level on the platform of the Centre. The training of industry specialists takes place according to a curriculum containing a pedagogical component in the form of teaching and conducting practical classes.

Educational programmes have different components for different categories of students. In addition to the Ushynsky University teachers, staff from other HEIs and industry representatives are involved in the teaching process at advanced training courses based on cooperation agreements. For example, the South Ukrainian Centre for the Professional Development of Managers and Socioeconomic Specialists and the Department of Technological and Professional Education of Ushynsky University held an online seminar in cooperation with the Kremenets Regional Humanitarian and Pedagogical Academy named after Taras Shevchenko and Kryvyi Rih State Pedagogical University on the problems of STEM education as part of the training courses for pedagogical staff of educational institutions.

All advanced training programmes have a developed educational and methodological complex according to the category of trainees, taking into account the proposals of representatives of educational and production institutions. Thus, the training of teachers of vocational (and technical) education takes place in compliance with educational and vocational programmes at the bachelor's level and through internships (for upgrading qualifications) of teachers and masters of work-placed (production-oriented) training, which significantly increases the quality of vocational education in general.

3 Achievements and Impacts

The activities of the Resource Centre for Vocational and Technical Education in Design Technologies, created on the basis of the Department of Technological and Vocational Education of Ushynsky University, are implemented through the educational and production-oriented platform of partnership of HEI students, employers, and/or customers of services and teachers/masters of work-placed (production-oriented) training of vocational (and technical) education, with Ushynsky University acting as the coordinator.

An exchange of experiences between various stakeholders was held in accordance with the final agreements on cooperation and agreements on the practice of HEI students. It involved discussion of the state of training future vocational teachers, as well as the necessity to update the content of the educational process to bring it in line with the existing educational and vocational programmes. It led to the development of new educational programmes of vocational education as well as the updating of programmes of educational disciplines and work-placed (production-oriented) practices in accordance with the requirements for the training of vocational education specialists, taking into account the recommendations and proposals of stakeholders and representatives of the employment sector. This increased the quality of cooperation based on partnership through more meaningful theoretical training and the implementation of educational tasks during practical classes, which motivated students to strive to process the acquired knowledge in the conditions of industrial practice and master professional skills and professional knowledge.

The organization of master classes, workshops, guest lectures, and other events by stakeholders contributed to greater student activity in performing creative projects and mastering professional skills in their speciality (Analytical Note, 2014). In addition, joint projects and research under production-oriented conditions contributed to the dissemination of the results in social networks and on the students' own pages, which increased awareness of the speciality and the level of potential future students' interest in the speciality. Thus, compared to admission in 2020, the number of enrolments to full-time education in 2021 increased to ten people, and in 2022 to 15 people.

The organization of training courses for improving the qualifications (internships) of teachers and masters of work-placed (production-oriented) training in a binary format and the invitation of representatives of specialized areas (for example, on

issues of STEM education in professional education in the field of design) contributed to the recommendations for the admission of VET students of those educational institutions to Ushynsky University for speciality 015 “Vocational Education (Design)”.

It should be noted that increasing the attractiveness of graduates in the labour market is facilitated by involvement of stakeholders. Their role lies in participation in: the development of educational programmes regarding the definition of competencies required by modern specialists; content of academic disciplines; introduction at the level of mandatory components of training courses for the study of entrepreneurship in the field of project management in education; organization of production (design and technological) practice indicating the relevant competencies; participation in the work of certification commissions.

In addition, the cooperation between the Ushynsky University and vocational education institutions resulted in a detailed definition of the content of curricula. This provided valuable practical knowledge on the organization of production activities and the identification of key conditions for more in-depth training of vocational teachers. The knowledge gained formed the basis for creating new and updating existing teaching and learning resources. As a result, such updates have contributed to improving the effectiveness and quality of education of students at vocational education and training institutions.

4 Evaluation and Findings

During the period of implementation of the tasks in accordance with the purpose of the Concept, some measures were carried out with the intention of increasing the basis of work-placed (production-oriented) practices through the conclusion of cooperation agreements and agreements on obtaining practice places for students, thus improving the quality of the future vocational teacher training through the modernization of educational programmes and the attractiveness of the work speciality with subsequent employment through cooperation with production (industry) specialists.

As of today, the number of practice places has tripled. The direction of the production of practice places is different, which expands the opportunities for students to master various modern techniques and technologies. This, in turn, has increased the level of motivation for mastering professional knowledge and skills and the desire for employment in a speciality.

Thus, in comparison with the monitoring carried out at the beginning in the form of a student survey, the current indicators have changed as described below.

- Initially, the survey revealed that students primarily identified a lack of professional skills (47%) and pedagogical abilities (20%) for teaching. However, at present, students express contentment with the extent of educational materials but offer suggestions for integrating contemporary methods, technologies, and processes to enhance their professional expertise. In addition, they outline the challenges that complicate the learning process. These challenges include limita-

tions of online learning in the context of acquiring practical skills, difficulties in establishing effective communication during teaching practice, and disruptions caused by air raid situations that lead to the reduction or termination of classes.

- The next stage of the survey assessed the level of readiness for classes at vocational and technical education institutions. It showed that 15% consider their level “very good” (10% higher), 63% “good” (an 18% improvement), and only 14% insufficient (due to the above-mentioned circumstances), while 8% of the students found it difficult to answer because their theoretical knowledge had a higher index than their practical skills due to their living abroad or in a territory where the situation with production is tense or absent.
- The indicator of awareness of vocational and technical education institutions at which students can be employed after graduation increased by 51% and reached 64%. In addition, 33% of the students indicated that their professional activity would be related to teaching activities in educational institutions, 31% are considering providing educational services on a commercial basis, and the other 36% seek to become specialists in the design industry (Usov, 2020).

From the obtained data, it is possible to determine that there is, on the one hand, a positive indicator of professional certainty and a desire to work in a speciality. On the other hand, the attractiveness of the professional component has increased the likelihood that graduates will prefer to work in industry rather than in the field of education. This indicator is also influenced by the fact that the employers give high marks to students for completing technological or project activities during production-oriented (technological, project-technological) internships, thus contributing to the students’ desire to continue their work in the production environment.

In addition, we would like to note that the admission rate for 2021 and 2022 increased by 50% and 75%, respectively. Among the reasons students named for enrolling in speciality 015 “Vocational Education (Design)” were “to become a fashion designer”, “to obtain a professional level of a designer”, and “to learn graphic design”, which indicates insufficient awareness of the essence of vocational education as a pedagogical field.

Hence, the enhancement of the educational framework for vocational teacher training needs ongoing improvement through collaborative engagement with vocational schools, colleges, centres, etc. This pertains not only to the overarching pedagogical aspect but also encompasses the production-oriented and pedagogical facets of the curriculum.

5 Partnership and Collaborative Endeavours

The results obtained indicate that cooperation between educational institutions and production partners is an important factor in the organization of the educational process for students. Partner programmes and projects allow students to gain deeper

knowledge about the specifics of their future profession, to acquaint themselves with real situations in production conditions that they will encounter in their future careers, and to get the opportunity to conduct research in a business environment and implement projects.

Our research has confirmed that partnerships between HEIs/VEIs and enterprises provide an opportunity for students to gain practical experience in a real industrial environment, which is important for improving their qualifications and readiness for work under modern conditions (Analytical Note, 2014). However, for cooperation and partnership to be successful, it is necessary to take into account several factors, such as mutual trust, understanding and respect between partners, openness to new ideas and initiatives, and effective coordination between the parties. Therefore, it can be concluded that the development of partnership and cooperation between an educational institution and enterprises is an important element in vocational teacher training based on an educational and production-oriented platform that regulates and adjusts the content and mechanisms of partnership and cooperation. This has a potential long-term perspective in conducting further joint scientific projects, research, and visits, which will help to strengthen the cooperation and development of teacher education at the university and beyond.

In addition, our experience shows that partnership between different educational institutions can play an important role in improving the quality of the education system itself and approaches to its modernization. Collaboration between different institutions can enable the sharing of best practices, resources, and knowledge. Furthermore, students gain more opportunities to gain new experience and knowledge.

Although we have made some progress in developing partnerships, there are still many challenges and tasks to be solved. For example, it is necessary to increase the level of trust between HEIs and VET schools to improve liaisons between them. In addition, a sustainable partnership requires mutual benefits for all stakeholders. That is why it is important to design conditions for cooperation based on partnership that satisfy all participants in terms of both their resource potential and their preparedness to provide economic support. This underscores the necessity for legislative provisions to establish a framework of legal and regulatory assurance concerning a dual form of education.

In general, we are sure that the development of partnership and cooperation between educational institutions and industry is an important means of improving the quality of education alongside the training of highly qualified specialists. Our experience in partnership development proves that such cooperation provides great potential to improve the quality of vocational education and to ensure the success of students' professional activities.

6 Conclusions and Suggestions for Further Research

This chapter presented the results of the implementation of the Partnership Governance of Vocational Teacher Training Concept. The proposed model of vocational teacher training is based on cooperation and partnership with stakeholders and has positive outcomes in quantitative and qualitative indicators. This indicates that the model can be scaled at the national level. The model contains educational and professional components that determine the level of complex professional student training due to the implementation of production-oriented and pedagogical conditions at all the levels of the training: organizational, educational, and institutional.

The organization of the modern teaching/learning process of vocational education using information and communication technologies, software, scientific and methodological achievements, educational technologies, and production technologies takes place on the educational and production-oriented platforms, which were created at the Resource Centre of Vocational and Technical Education in Design Technologies.

It should be noted that there is a need for further work on the definition of methods and mechanisms for vocational (specialist) and practical (work-placed production-oriented) training through the creation of a comprehensive range of educational programmes aimed at developing relevant competencies and educational content, taking into consideration the requirements for specialists put forward by stakeholders.

In the future, we are confident that the implementation of the Concept of Partnership Governance of Vocational Teacher Training will make it possible to conduct research on clarifying the dynamics of interaction between all participants in the process of training teachers of vocational schools, as well as research in the field of legislative aspects of regulating challenges related to dual education.

References

- Briukhanova, R. V. (2019). *Kompiuterni dyzain-tekhnologii. Navchalnyi posibnyk*. [Computer design technologies. Educational manual]. Kyiv: TsUL.
- Buntat, Y., Saud, M. S., Dahar, A., Arifin, K. S., & Zaid, Y. H. (2010). Computer technology application and vocational education: A review of literature and research. *European Journal of Social Sciences*, 14(4), 645–651.
- Deng, L. (2021). Research on the application of computer network technology in the training of talents in vocational education. *Journal of Physics: Conference Series*, 1865(4), 042038. <https://doi.org/10.1088/1742-6596/1865/4/042038>
- Ivashov, Ye. V., Sakhno, O. V., Hriadushcha, V. V., Denysova, A. V., Lukiianchuk, A. M., & Udovyyk, S. I. (2021). *Rozvytok tsyfrovoy kompetentnosti pedahohichnykh pratsivnykiv zakladiv profesiinoi (profesiino-tekhnichnoi) osvity zasobamy informatsiinokomunikatsiinykh tekhnologii: navchalnyi posibnyk* [Development of Digital competence of pedagogical workers in vocational (professional-technical) Education institutions using information and communication technologies: Educational manual]. BINPO.

- Kontsepsiia partn erskoho upravlinnia pidhotovkoiu vykladachiv profesiinoi osvity u derzhavnomu zakladi "Pivdennoukrainskyi natsionalnyi universytet imeni K. D. Ushynskoho". (2021). [Concept of partnership governance in the preparation of professional education teachers at the State Institution "Southern Ukrainian National University named after K. D. Ushynsky"].
- Morze, N., Vember, V., & Hladun, M. (2019). Vykorystannia tsyfrovoykh tekhnolohii dlia formuvalnoho otsiniuvannia [Using of digital technologies for formative assessment]. *Open educational e-environment of modern university*, (special edition), 202–214. <https://doi.org/10.28925/2414-0325.2019s19>
- Osadcha, K., Osadchyi, V., Spirin, O., & Kruhlyk, V. (2021). Realizatsiia indyvidualizatsii ta personalizatsii navchannia zasobamy MOODLE [Implementation of individualization and personalization of learning using MOODLE Tools]. *Molod i rynok*, 1(187), 38–43.
- Pasichnyk, O., Yelfimova, Yu., Chushak, Kh., Shynarovska, O., & Donets, A. (2021). *Zmishane navchannia u zakladakh profesiinoi (profesiino-tekhnichnoi) osvity. Navchalno-metodychnyi posibnyk*. [Blended learning in professional (vocational-technical) education institutions. Educational-methodical manual]. Kyiv.
- Polozhennia pro Resursnyi tsentr profesiino-tekhnichnoi osvity z tekhnolohii dyzainu vid 31.08.2021 nakaz № 311. [Regulation on the Resource Center for Design Technology Professional-Technical Education dated 31.08.2021 order No. 311].
- Svitovyi dosvid rozvytku dystantsiynnykh form osvity u vitchyznianomu konteksti: analitychna zapyska. [World experience in the development of distance education forms in the national context: analytical note.]. (2014, December 17). <https://niss.gov.ua/doslidzhennya/gumanitarniy-rozvitok/svitoviy-dosvid-rozvitku-distanciynnykh-form-osvity-u>
- Usov, V. (2020). Udoskonalennia pidhotovky zdobuvachiv profesiinoi osvity v Universyteti Ushynskoho [Improving the preparation of vocational education applicants at Ushynsky University]. In Komarytskyi M. L. (Ed.), *European scientific discussions. Abstracts of the 1st International scientific and practical conference* (pp. 417–423). Potere della ragione Editore.
- Zakon Ukrainy "Pro profesiinu (profesiino-tekhnichnu) osvitu" vid 10.02.1998 № 103/98-VR. (Potochna redaktsiia vid 23.02.2023). [Law of Ukraine "On Vocational (Professional-Technical) Education" dated 10.02.1998 No. 103/98-VR. (Current version as of 23.02.2023)].
- Zakon Ukrainy "Pro vyshchu osvitu" vid 01.07.2014 № 1556-VII. (Potochna redaktsiia vid 23.02.2023). [Law of Ukraine "On Higher Education" dated 01.07.2014 No. 1556-VII. (Current version as of 23.02.2023)].

Bibliographical Notes

Dr **Valentin Usov** is a doctor of physical and mathematical sciences and a professor at the Department of Technological and Vocational Education at the state institution "South Ukrainian National Pedagogical University named after K. D. Ushynsky" (Ush-

ynsky University), Odesa, Ukraine. His research interests focus on materials science and materials technology and information technology in education and science.

The state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky”

26 Staroportofrankivska St., 65020, Odesa, Ukraine

usov.vv@pdpu.edu.ua

Dr Tatiana Petukhova is an associated professor at the Department of Technological and Vocational Education at the state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky” (Ushynsky University), Odesa, Ukraine. Her research interests focus on vocational knowledge, prior knowledge assessment, and curriculum development in technology and vocational education.

The state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky”

26 Staroportofrankivska St., 65020, Odesa, Ukraine

petukhova.ta@pdpu.edu.ua

Volodymyr Chernykh, PhD, is a senior lecturer at the Department of Applied Mathematics and Informatics at the state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky”, Odesa, Ukraine. His scientific interests are focused on the profession-oriented training of teachers in computer technologies, software, the formation of a digital environment, and information technologies in education and science.

The state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky”

26 Staroportofrankivska St., 65020, Odesa, Ukraine

garafmalen@gmail.com

Viktoriia Kozak is a lecturer at the Department of Technological and Vocational Education at the state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky”, Odesa, Ukraine. Her research interests are focused on professional knowledge, practical (work-placed, production-oriented) training, organization, and project management in technology and vocational education.

The state institution “South Ukrainian National Pedagogical University named after K. D. Ushynsky”

26 Staroportofrankivska St., 65020, Odesa, Ukraine

kozak.vi@pdpu.edu.ua

This publication addresses the pressing issues of vocational teacher education (VTE), focusing on institutional, organizational and governance aspects. Firstly, it summarizes the results of the four-year Erasmus+ capacity-building project “New Mechanisms of Partnership-based Governance and Standardization of Vocational Teacher Education in Ukraine” (PAGOSTE), funded by the European Education and Culture Executive Agency. The project’s focus has been governance in VTE in Ukraine. Secondly, it goes beyond the narrow project context and explores challenges as well as good practices in VTE systems of other countries in and outside of Europe. Therefore, contributions from England, New Zealand, Australia, Italy, Germany, Austria and Switzerland complement the Ukrainian context and provide readers with a more comprehensive understanding of VTE systems.

The **VET, Work and Innovation** series provides a forum for basic and application-oriented VET research. It contributes to the scientific discourse on innovation potentials of vocational education and training.

The series is edited by Prof.in em. Marianne Frieze (Justus-Liebig University Gießen), Prof. Susann Seeber (Georg August University of Göttingen) and Prof. Dr. Lars Windelband (University of Education Schwäbisch Gmünd).

Editors of this volume are:

Thomas Deissinger, Professor of Business and Economics Education at the University of Konstanz, specializes in the history of vocational education and training (VET), VET policy, and comparative VET, including two EU projects on VET teacher education.

Oksana Melnyk is a postdoc researcher at the University of Konstanz. She specializes in changes in vocational education systems, international cooperation in vocational education and training, and vocational teacher training.



ISBN: 978-3-7639-7668-3