DEVELOPMENT OF OCCUPATIONAL STANDARDS USING THE INSTRUMENTS OF PUBLIC-PRIVATE PARTNERSHIP

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Abstract.

Relevance: the post-industrial stage of society's development makes it necessary to modernize the vocational education system, the important direction of which is to update the existing approaches to the development of occupational standards in Ukraine. These are documents which approve the requirements for the competencies of workers in the prescribed manner and which should be focused on modern social and economic relations and consider the change in the technological structure that will require a high level of vocational competency of skilled workers for all economic sectors, as well as improving the system of training and advanced training. All this makes it more relevant to involve partners within the framework of Public-Private Partnership (PPP) in the process of developing occupational standards as documents containing requirements for professional competency of skilled workers.

Purpose: to substantiate modern approaches to the development of occupational standards using the instruments of Public-Private Partnership.

Methods: analysis of scientific literature and legal documents – to determine current trends in the development of occupational standards and current status of the process; methods of analysis and synthesis – to classify job functions and occupational standards, systematize data, summarize management experience to develop theoretical and methodological approaches to determining the conditions for the development of occupational standards; comparative analysis, synthesis and expert evaluation methods – to develop requirements for the development of occupational standards.

Results: the structure of current vocational qualifications system is revealed, its features in the context of modern labor market orientation and increase in the level of employment are specified, the conditions and prospective of occupational standards development are determined.

Conclusions: the structure of occupational standards and conditions for their development with a focus on specific job functions for certain spheres of economic activity using the instruments of Public-Private Partnership are determined, which is an important basis for obtaining competencies according to criteria of efficiency and labor market demands.

Keywords: module, qualifications, competencies, vocational education, labor market, job functions, occupational standard.
Introduction. Public-Private Partnership becomes a prerequisite for modernization of vocational education in Ukraine. This kind of partnership may help to establish real connection between educational institutions and employers and other stakeholders according to modern labor market demands.

The modernization of vocational education system in the context of development of post-industrial society requires further search for new instruments for the development and evaluation of qualifications. The related issue is the need to systematize job functions that is accompanied by the development of occupational standards within the framework of Public-Private Partnership.

Sources. The scientific works by O. Borodiyenko, K. Vashchenko, O. Datsii, I. Drahan, Ye. Kartashov, N. Nichkalo, Ye. Romanenko and others are devoted to the problems and prospects of development of public-private partnership in the education system. The development of methodological approaches to the development of vocational standards is discussed in the works by R. Kolyshko, L. Korotkova, S. Melnyk, O. Miroshnichenko, S. Prytomanov, T. Piatnychuk and others. The issues of vocational education standardization in the context of European integration processes were studied by T. Desiatov, S. Kravets, P. Luzan, L. Pukhovska, V. Radkevich, O. Shcherbak and others.

Despite the diversity of scientific approaches to the study of this topic, theoretical and methodological approaches to the development of occupational standards using the instruments of public-private partnership require further development.

Methods: analysis of scientific literature and legal documents – to determine current trends in the development of occupational standards and current status of the process; methods of analysis and synthesis – to classify job functions and occupational standards, systematize data, summarize management experience to develop theoretical and methodological approaches to determining the conditions for the development of occupational standards; comparative analysis, synthesis and expert evaluation methods – to form requirements for the development of occupational standards.

Purpose of the article – to substantiate modern approaches to the development of vocation occupational standards using the instruments of Public-Private Partnership.

Results and discussion. Taking into account national and international practice, it is advisable to use the instruments of public-private partnership to form the system of occupational standards in Ukraine. In foreign sources, Public-Private Partnership (PPP) means a form of cooperation between public authorities and business structures that aims at ensuring financing, construction, renewal, management or maintenance of infrastructure or provision of public services (Dunbar, 2013). By PPP in vocational education, we mean the mechanism for coordinating actions and sharing responsibility between public and private stakeholders of vocational education that is used to develop, finance, manage and support the projects of common interests. These projects may take the form of activities for developing strategies or programs for their implementation, and may include a number of areas, such as vocational training, innovation, vocational and higher education, as well as entrepreneurship, investment in business development, etc. (Borodiyenko, 2020).

According to the Concept of implementation of state policy in vocational education "Modern Vocational Education 2027" (Cabinet of Ministers of Ukraine, 2019), development of social partnership requires participation of all stakeholders, including employers, in the development of occupational standards, educational standards and curricula, formation of the National Qualifications System and improvement of the National Qualifications Framework. In this context, development of occupational standards in spheres of economic activity that primarily serves the scientific and technological progress of the country and innovative development of the national economy is of particular interest.

Setting specific tasks by society to the education system to ensure the quality of vocational training of skilled workers requires development of a sufficient number of occupational standards as a basis for modern standards of vocational education. Thus, representatives of PPP should actively participate in this work (Vashchenko K.O., Kolyshko R.A., Miroshnichenko O.V. and others, 2012).

According to the Law of Ukraine "On Education", occupational standard is the established requirements for competencies of the employees that serve as the basis for development of professional qualifications. The practice of developing occupational standards both in Ukraine and in other countries disproved the opinion that occupational standards can be developed by a very wide range of entities: employers, their organizations, public authorities, scientific institutions, sector skills councils, NGOs and other stakeholders (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2017).

According to article 34 of this Law, professional qualification is a standardized set of competencies obtained by a person (learning outcomes) that allow performing certain type of work or carrying out professional activities; and this set is recognized by a qualification center, educational entity or another competent entity and is certified by a relevant document.

The foreign experience in development of occupational standards shows that despite the different levels of economic development, social and cultural
particularities and historical traditions, vocational standardization of most European countries (Great Britain, Netherlands, Germany, France, Estonia, etc.) is based on the method of functional analysis. The occupational standard is a product of collective activity of employers, representatives of education, industry and NGOs. They are mainly developed by specially created authorities or other competent sector structures (councils, committees) that have clearly defined powers. The process of organizing, creating and adjusting occupational standards is regulated by current legal documents (Korotkova, 2012).

According to V. Radkevich, in the new format, occupational standards are documents that define job functions of skilled workers within a certain sphere of economic activity and describe them in terms of knowledge and skills in a standardized way. The value of occupational standards is that they make it possible to establish common requirements for performance of job functions, to carry out an independent assessment of competencies of workers, including those obtained during informal learning, and to ensure the necessary level of labor quality, regardless of the company type and location (Radkevich, 2013). In addition, occupational standards can be used by both employers and company employees. In particular, the employers can use them when defining and describing knowledge and skills necessary for successful functioning of employees in a particular workplace, developing job descriptions, drawing up plans and programs for vocational training and assessing its results. Similarly, company employees can use occupational standards for self-assessment of their competencies for further career development, etc. (Radkevich, 2013).

At the same time, the issue of application of the existing "Procedure for development, approval and revision of occupational standards" (Cabinet of Ministers of Ukraine, 2017), which does not fully comply with European approaches, remains unresolved. First of all, it is about: reviewing the principles and approaches to the development of occupational standards as a standardized description of job functions in certain economic activities, rather than in the context of individual positions of the Classification of Occupations; establishing common qualification requirements for the developers of occupational standards and process of their development; approving the rules for classification of job functions and occupational standards, definition and compliance with the unified structure of occupational standard; maintaining communication with between developers and occupational standards validation authorities (reporting development, placement, public discussion, approval and entry into force) (Kolyshko, 2017).

The procedures leading to perception of occupational standard provisions by wide variety of stakeholders, education system, NGOs and their associations, that is, the extension of public discussion procedure (especially in the case of inter-industry nature of occupational standard) are of particular importance. It should take into account: compliance of occupational standard content and structure with European approaches and specific nature of the chosen professional activity; representativeness (by quantitative and qualitative nature of the chosen professional activity; representativeness (by quantitative and qualitative nature of the chosen professional activity; representativeness (by quantitative and qualitative structure) of organizations and specialists involved in the development; correctness of classification of occupational standard to a particular sphere of economic activity; compliance of the content of certain competencies to the needs of employers; possibility to use occupational standard to implement the ideas of personal development and lifelong learning; possibility to use occupational standard as a link between the labor market and education; opportunities for timely adjustments, additions and changes according to labor market demands; possibility to assess (certify) the obtained competencies based on occupational standard (Korotkova, 2012).

Let us now characterize the current vocational qualifications system, which is based on the State Standard National Classification ДК 003:2010 Classification of Professions (State Committee of Ukraine for Technical Regulation and Consumer Policy, 2012) and Guidebook of qualification specifications of occupations with its 92 sector issues (Ministry of Social Policy of Ukraine, 2017).

According to the authors, the more accurate name of Classification of Professions is Classification of Occupations. The occupations are the object of classification in most countries. The Classification of Occupations is essentially a "reflection" of the labor market for economy of the country in terms of distribution of labor in certain occupations. As the economy and hence the labor market are constantly evolving, the Classifications of Occupations should be constantly (periodically) updated based on the results of labor market research.

It should be noted that the Classification of Professions is an element of statistical observation of the existing labor market in the state and the results of international comparisons. Its tasks include:

– calculation of the number of employees, accounting and allocation of personnel by occupational groups of different classification levels, planning additional needs for personnel, etc.;

– systematization of labor statistical data by occupational specifications;

– analysis and preparation of statistical data for publication, as well as forecasting of employment, income, occupational safety and health, education, retraining of dismissed personnel, etc.;

– preparation of statistical data for periodic surveys on labor statistics developed by the International Labor Organization (ILO);
solving issues of control and analysis of international migration, international recruitment and employment of citizens (State Committee of Ukraine for Technical Regulation and Consumer Policy, 2012).

At the same time, the Guidebook of qualification specifications is an element of the remuneration system that has survived since Soviet times, when a single owner (state) established common requirements for qualification of employees in certain occupations and set the level of remuneration depending on the level of qualification (qualification corresponded to the class) (Table. 1).

Now, structure of the Classification of Professions of Ukraine ДК 003:2010 complies with the international standards recommended by the International Labor Organization (ILO) (Tab. 2).

It should be noted that qualification specifications of occupations of the relevant class (as an element of the remuneration system) determine specific tasks and responsibilities of employees and in practice are the basis of their job descriptions. At the same time, it determines the hierarchy in the remuneration system, as promoting the class has always meant an increase in remuneration (Tab. 3).

It is quite obvious that this qualification specification makes it impossible to train a specialist according to technological changes in the economy. Against this background, it is necessary to implement new approaches to training of skilled workers and ensuring their employment in the labor market. It should be noted that the labor market is closely linked to concrete sphere of economic activities and is being transformed given the changes that occur in them. In addition, the labor market should respond in advance to the current needs of the national economy (Fig. 1).

The changes should also occur in the Classification of Economic Activities of Ukraine, which is now aligned with the International Classification (UN) (Tab. 4).

Table 1
Structure of the current vocational qualifications system

<table>
<thead>
<tr>
<th>CP Section</th>
<th>Number of occupations</th>
<th>Soviet class-tariff remuneration system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1176</td>
<td>Classes:</td>
</tr>
<tr>
<td>2</td>
<td>1066</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>922</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>206</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>161</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1316</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3325</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>In total</td>
<td>8745</td>
<td>Guidebook of qualification specifications of occupations with 92 industrial issues</td>
</tr>
</tbody>
</table>

Table 2
Classification of professions of Ukraine according to international requirements

<table>
<thead>
<tr>
<th>Ukraine</th>
<th>International Standard Classification of Occupations, ISCO-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Legislators, Senior Officials, Managing Directors, Chief Executives</td>
<td>1. Managers</td>
</tr>
<tr>
<td>2. Professionals</td>
<td>2. Professionals</td>
</tr>
<tr>
<td>3. Specialists</td>
<td>3. Technicians and Associate Professionals</td>
</tr>
<tr>
<td>4. Technicians</td>
<td>4. Clerical Support Workers</td>
</tr>
<tr>
<td>5. Service and Sales Workers</td>
<td>5. Service and Sales Workers</td>
</tr>
<tr>
<td>6. Skilled Agricultural, Forestry and Fishery Workers</td>
<td>6. Skilled Agricultural, Forestry and Fishery Workers</td>
</tr>
<tr>
<td>7. Craft and Related Trades Workers</td>
<td>7. Craft and Related Trades Workers</td>
</tr>
<tr>
<td></td>
<td>0. Armed Forces Occupations</td>
</tr>
</tbody>
</table>
Table 3

Example of occupational specification for occupation "Plumber".

**GUIDEBOOK of qualification specifications of occupations.**
**Issue 42 "Metal Working"**

**37. PLUMBER**

Ministry of Industrial Policy of Ukraine, Order No. 120 dated March 22, 2007

**3rd class**

**Tasks and responsibilities.**

Disassembles, repairs and assembles simple parts and units of sanitary engineering systems of central heating, water, sewerage, gas and drainage systems. Drills or punches holes in structures. Manually cuts pipe threads. Installs and mounts fixtures for pipelines and devices. Completes a set of riser pipes and fittings.

**Must know:**

- principle of operation, purpose and features of repair of sanitary engineering pipeline systems of central heating, water, sewerage, gas and drainage systems; types of main parts of sanitary engineering systems, pipe connections and pipe fixtures; methods of drilling and punching holes; rules for handling oxygen and acetylene cylinders and their transportation; purpose and rules for using power-driven hand tools.

**Qualification criteria.**

Complete general secondary education and vocational education without work experience requirements or complete general secondary education and vocational training in the workplace. Advanced training and work experience as plumber of the 2nd class – at least 1 year.

**Examples of works.**


**4th class**

**Tasks and responsibilities.**

Disassembles, repairs and assembles parts and units of average complexity of sanitary engineering systems of central heating, water, sewerage, gas and drainage systems. Marks the places for installation of devices and fixtures. Groups and regroups cast iron radiators on site. Connects the pipes of heating panels, sanitary engineering and blocks. Attaches parts and devices using piston fastening tool.

**Must know:**

- structure and methods of repair of sanitary engineering pipeline systems made of steel and polymer; structure of piston fastening tools and rules for working with them; methods of marking the places for installation of devices and fasteners; rules for installation of sanitary and heating devices.

**Qualification criteria.**

Vocational education. Advanced training and work experience as plumber of the 3rd class – at least 1 year.

**Examples of works.**

The above is an important basis for developing new approaches to the development of occupational standards.

Here is an example of the development of occupational standards in the economic activity "Services to buildings and landscape activities" (Chapter N. Administrative and support services; Section 85. Services to buildings and landscape activities) using the new approach. It is designed to analyze (identify) job functions in a certain sphere of economic activity and their standardized description. The job functions are analyzed by a specialized (authorized by the National Qualifications Agency) organization – Sector Skills Council (organization for standardization of job functions). According to results of the analysis of job functions for this sphere of economic activity, the Sector Skills Council drafts a report from the point of view of full support of the technological process. The report should be submitted for public discussion in the relevant industry. The results of the analysis of job functions to be performed when servicing buildings and landscape are shown in Fig. 2. It should be noted that certain labor actions are determined within each job function.

According to the results of expert discussion in the industry, job function "Energy supply" was divided into 3 job functions, which are determined by a specific type of energy. Accordingly, new labor actions were allocated (Fig. 3).

According to new approaches to the development of occupational standards, they should be understood as a standardized description of job functions, validated and approved document of a certain structure, which is entered in the public national registry (Fig. 4). According to this definition, occupational standards have no "levels" of complexity and they are not

Table 4
Classification of Economic Activities of Ukraine (2010) (according to ISIC Rev.4 UN)

<table>
<thead>
<tr>
<th>Ukraine</th>
<th>UN Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Agriculture, forestry and fishing</td>
<td>A Agriculture, forestry and fishing</td>
</tr>
<tr>
<td>B Mining and quarrying</td>
<td>B Mining and quarrying</td>
</tr>
<tr>
<td>C Manufacturing</td>
<td>C Manufacturing</td>
</tr>
<tr>
<td>10 Manufacture of food products</td>
<td>10 Manufacture of food products</td>
</tr>
<tr>
<td>24 Manufacture of basic metals</td>
<td>24 Manufacture of basic metals</td>
</tr>
<tr>
<td>D Electricity, gas, steam and air conditioning supply</td>
<td>D Electricity, gas, steam and air conditioning supply</td>
</tr>
<tr>
<td>U Activities of extraterritorial organizations and bodies</td>
<td>U Activities of extraterritorial organizations and bodies</td>
</tr>
</tbody>
</table>

Fig. 2. Job functions to be performed when servicing buildings and neighborhoods
associated with the qualifications framework, as the qualification levels are "created" later, taking into account the time required to train the specialist to perform a certain job function described in the relevant occupational standard.

New approaches to the development of occupational standards will enable effective interaction between labor and education to move from a class-tariff system of vocational training of skilled workers to training according to the rapidly changing modern labor market demands and will serve as an important basis for the rapid replacement of qualification specifications (Radkevich, Luzan, Kravets, 2017). Taking this into account, PPP instruments can be a
catalyst for multidimensional changes in both legal framework for determining the structure of occupational standards and development of vocational education standards.

Conclusions. Therefore, despite the fact that occupational standard is currently being developed for a specific occupation or group of occupations, this approach should change in the future (each occupational standard should correspond to a specific job function in the context of a certain economic activity). The development of occupational standards is an important task of competent developers of occupational standards – sector employers organizations, sector skills councils for certain spheres of economic activities and other competent entities. The occupational standard should meet the quality criteria approved by the competent state authority. Therefore, it is important that the developers of occupational standards meet the qualification criteria (requirements) and undergo the certification procedure by the competent state authority operating in the National Qualifications System.

The new algorithm of interaction between representatives of labor market, sector organizations and vocational education institutions is a specific feature of the proposed approach to the development of occupational standards. This means that the stakeholders determine the learning outcomes and develop professional qualifications (partial and full, according to the descriptors of the National Qualifications Framework) based on occupational standards. In turn, vocational educational institutions using professional qualifications form educational programs and, accordingly, ensure the quality of training of future skilled workers in close cooperation with the employers. The independent certified agencies (qualification centers) evaluate the learning outcomes and award professional qualification (full or partial) in close cooperation with the employers and representatives of vocational educational institutions.

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Розроблення професійних стандартів з використанням інструментів публічно-приватного партнерства

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Реферат.
Актуальність: постіндустріальний етап розвитку суспільства зумовлює необхідність модернізації системи професійної освіти, важливим напрямом якої є оновлення існуючих сьогоден в Україні підходів до розроблення професійних стандартів. Ідеться про документи, які затверджують в установленому порядку вимоги до компетентностей працівників, і які мають бути орієнтованими на сучасні соціально-економічні відносини, враховувати зміну технологічного укладу, що потребує підвищення рівня професійної компетентності кваліфікованих робітників для усіх видів економічної діяльності, а також удосконалення системи їх підготовки та підвищення кваліфікації. Все це актуалізує доцільність широкого залучення учасників публічно-приватного партнерства до процесу розроблення професійних стандартів як документів, що містять вимоги до професійної компетентності кваліфікованих робітників.

Мета: обґрунтування сучасних підходів до розроблення професійних стандартів з використанням інструментів публічно-приватного партнерства.

Методи: аналіз наукової літератури, законодавчо-нормативних документів – для з’ясування сучасних тенденцій формування професійних стандартів та існуючого стану розроблення професійних стандартів; методи аналізу і синтезу – для класифікації трудових функцій і професійних стандартів, систематизації даних, узагальнення управлінського досвіду для визначення теоретичних та методичних підходів до визначення умов розроблення професійних стандартів; порівняльний аналіз, синтез та методи експертного оцінювання – для формування вимог щодо розроблення професійних стандартів.

Результати: розкрито структуру дівої професійно-кваліфікаційної системи, охарактеризовано її особливості в контексті орієнтації на сучасний ринок праці та підвищення рівня зайнятості населення, визначено умови та перспективи розроблення професійних стандартів.

Висновки: визначена структура професійних стандартів та умови їх розроблення з орієнтацією на конкретні трудові функції для певних видів економічної діяльності з використанням інструментів публічно-приватного партнерства, що є важливим підгрунтям набуття особою компетентностей відповідно до критеріїв ефективності та потреб ринку праці.

Ключові слова: модуль, кваліфікація, компетентності, професійна освіта, ринок праці, трудові функції, професійний стандарт.