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## **MODELING OF THE PROCESS OF PROFESSIONAL TRAINING OF SPECIALISTS IN SPECIALTY 015 "VOCATIONAL EDUCATION" IN INSTITUTIONS OF HIGHER EDUCATION**

**Annotation.** The relevance of the research problem lies in the fact that there is an urgent need to train specialists who are able to effectively carry out not only production, but also educational activities. In Ukraine, the training of such specialists is carried out in accordance with the standards of higher education for the first (bachelor's) and second (master's) levels, branch of knowledge 01 - "Education / Pedagogy", specialty 015 - "Vocational education (for specializations)", put into effect in 2019-2020. Thus, such training is innovative and requires theoretical justification.

The purpose of the article is to analyze the features of training specialists in the specialty 015 Vocational education (by specialization) and build a theoretical model for the formation of their professional competence.

On the basis of the conducted studies of scientific and scientific-methodical publications and their own pedagogical experience, the existing contradictions were established that impede the effective professional training of future specialists in the specialty 015 Vocational education (by specializations). In order to eliminate them and conduct further research, a mathematical model was developed for the formation of professional competence of specialists in the specialty 015 Vocational education (by specialization), containing methodological, technological and diagnostic blocks; their content and features are characterized.

It has been proved that the definition and substantiation of the pedagogical conditions for the formation of professional competence of specialists in the specialty 015 Vocational education (by specialization) and the development of an appropriate diagnostic apparatus in accordance with a certain specialization require further study.

**Key words:** higher educational institutions, improvement of vocational training, development of education, model of the educational process, vocational education.

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## **МОДЕЛИРОВАНИЕ ПРОЦЕССА ПРОФЕССИОНАЛЬНОЙ ПОДГОТОВКИ СПЕЦИАЛИСТОВ ПО СПЕЦИАЛЬНОСТИ 015 «ПРОФЕССИОНАЛЬНОЕ ОБРАЗОВАНИЕ» В ЗАВЕДЕНИЯХ ВЫСШЕГО ОБРАЗОВАНИЯ**

**Аннотация.** Актуальность проблемы исследования состоит в том, что существует настоятельная необходимость подготовки специалистов, способных эффективно осуществлять не только производственную, но и образовательную деятельность. В Украине подготовка таких специалистов осуществляется в соответствии со стандартами высшего образования для первого (бакалаврского) и второго (магистерского) уровней, отрасль знаний 01 – «Образование / Педагогика», специальность 015 – «Профессиональное образование (за специализациями)», введенными в действие в 2019-2020 годах. Таким образом, такая подготовка является инновационной и требует теоретического обоснования.

Целью статьи является анализ особенностей подготовки специалистов специальности 015 Профессиональное образование (по специализациям) и построение теоретической модели формирования их профессиональной компетентности.

На основе проведенных исследований научных и научно-методических публикаций и собственного педагогического опыта были установлены существующие противоречия, препятствующие эффективной профессиональной подготовке будущих специалистов специальности 015 Профессиональное образование (по специализациям). С целью их устранения и проведения дальнейших исследований, была разработана

математическая модель формирования профессиональной компетентности специалистов специальности 015 Профессиональное образование (по специализациям), содержащая методологический, технологический и диагностический блоки; охарактеризованы их содержание и особенности.

Доказано, что дальнейшего изучения требуют определение и обоснование педагогических условий формирования профессиональной компетентности специалистов специальности 015 Профессиональное образование (по специализациям) и разработка соответствующего диагностического аппарата в соответствии с определенной специализацией.

**Ключевые слова:** высшие учебные заведения, усовершенствование профессиональной подготовки, развитие образования, модель образовательного процесса, профессиональное образование.

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### **ЖОҒАРЫ БІЛІМ БЕРУ ОРЫНДАРЫНДА 015 «КӘСІПТІК БІЛІМ БЕРУ» МАМАНДЫҒЫ БОЙЫНША МАМАНДАРДЫҢ КӘСІБИ ДАЙЫНДАУ ПРОЦЕСІН МОДЕЛЬДЕУ**

**Аннотация.** Зерттеу мәселесінің өзектілігі өндірісті ғана емес, сонымен қатар оқу қызметін де тиімді жүзеге асыра алатын мамандарды дайындаудың өзектілігінде. Украинада мұндай мамандарды дайындау бірінші (бакалавр) және екінші (магистратура) деңгейлері үшін жоғары білім беру стандарттарына сәйкес жүзеге асырылады, білім саласы 01 – «Білім/Педагогика», 015 мамандығы – «Кәсіптік білім (мамандықтар бойынша)», 2019-2020 жылдары қолданысқа енгізілді. Осылайша, мұндай оқыту инновациялық болып табылады және теориялық негіздеуді қажет етеді.

Мақаланың мақсаты – 015 Кәсіптік білім беру (мамандық бойынша) мамандығы бойынша мамандарды дайындау ерекшеліктерін талдау және олардың кәсіби құзыреттілігін қалыптастырудың теориялық моделін құру.

Жүргізілген ғылыми және ғылыми-әдістемелік басылымдарды және өздерінің педагогикалық тәжірибесін зерделеу негізінде 015 Кәсіптік білім беру (мамандықтар бойынша) мамандығы бойынша болашақ мамандарды тиімді кәсіби даярлауға кедергі келтіретін бар қарама-қайшылықтар анықталды. Оларды жою және одан әрі зерттеу жұмыстарын жүргізу мақсатында 015 Кәсіптік білім беру (мамандық бойынша) мамандығы бойынша әдістемелік, технологиялық және диагностикалық блоктарды қамтитын мамандардың кәсіби құзыреттілігін қалыптастырудың математикалық моделі әзірленді; олардың мазмұны мен ерекшеліктері сипатталады.

015 Кәсіптік білім беру (мамандық бойынша) мамандығы бойынша мамандардың кәсіби құзыреттілігін қалыптастырудың педагогикалық шарттарын анықтау мен негіздеу және белгілі бір мамандыққа сәйкес диагностикалық аппаратты жасау қосымша зерттеуді қажет ететіні дәлелденді.

**Негізгі сөздер:** жоғары оқу орындары, кәсіптік оқытуды жетілдіру, білім беруді дамыту, оқу үрдісінің моделі, кәсіптік білім.

**Introduction.** Taking into account the current trends in the development of higher education, the system of professional training of specialists needs optimization and a change in the pedagogical paradigm in the direction of building an effective educational process and training highly qualified personnel. The prospects for the development of professional education are determined by the priority directions of the socio-economic progress of Ukraine, the establishment of the national education system as a leading factor in the economic development of society, the need for its adaptation to democratic and market

transformations, which is caused by the entry into the European and world educational and information spaces.

The global trend toward the construction of continuous professional education (lifelong education) necessitates a holistic solution to the problems of the development of labor potential, its professional training, retraining, and advanced training. In addition, reforming vocational education in Ukraine today according to the European model requires bringing higher education to uniform standards and criteria.

The issues of professional education

are highlighted in the writings of R. Gurevich, I. Zyazyun, N. Nychkalo, H. Grebenyuk, I. Kozlovska, A. Ligotsky, P. Oliinyk, O. Kiyashko, and others. The problems of training teachers of higher education are highlighted in the works of such researchers as S. Arkhangelskyi, P. Veshetnikov, T. Vrazhe, N. Huziy, O. Gura, M. Yermolenko, N. Kuzmina, A. Korzhev, V. Kuzovlev, V. Mizherikov, A. Markova, L. Mishchenko, I. Ogorodnikov, V. Semichenko, and others. Such researchers as V. Adolf, Y. Vardanyan, E. Zeyer, I. Zyazyun, I. Kolesnikova, N. Kuzmina, A. Markova, L. Mitina, E. Rogov, E. Sakharchuk, V. Serykov dealt with issues of pedagogical competence. , V. Synenko, A. Shcherbakov, and others. Peculiarities of the process of formation of pedagogical consciousness of teachers of higher education institutions are reflected in numerous works of such researchers as H. Akopov, V. Babaskin, T. Borovkina, A. Derkach, V. Isaev, N. Kostina, I. Lerner, P. Pidkasisty, S. Rubinstein, N. Rusina, M. Sytnikova, V. Slastyonin, O. Tsokur, L. Shumska.

Despite a large number of studies in this area, the issue of the organization of the educational process and conditions that ensure the effectiveness of the formation of professional competence of the future specialist in the specialty 015 "Professional education" remains unresolved. This is reflected in the absence of a theoretically defined and methodologically supported system of training specialists in specialty 015 "Professional education (by specializations)", its content, basic forms, and methods of organizing educational activities.

**The purpose** of the article is to clarify the specifics of the training of specialists in specialty 015 "Professional education (by specializations)" based on the competence approach and to build a theoretical model of the formation of professional competence of such specialists.

**The main part.** On April 29, 2015, the Cabinet of Ministers of Ukraine approved Resolution No. 266 "On approval of the list of fields of knowledge and specialties for which higher education applicants are trained", according to which the list of fields of

knowledge and specialties in institutions of higher education was updated [14]. According to the national classification of professions, specialists in specialty 015 "Vocational education (by specializations)" have the right to work as teachers of higher education institutions, teachers of vocational educational institutions, methodologists of correspondence schools and branches, method educators, inspectors of secondary special and vocational-technical institutions, inspectors - Methodists. Appropriate standards of higher education for the training of specialists have been developed and approved for bachelor's (Order of the Ministry of Education and Science of Ukraine dated November 21, 2019, No. 1460 [12]) and master's (Order of the Ministry of Education and Science of Ukraine dated November 18, 2020, No. 1435 [13] ) levels of higher education.

Institutions of higher education, based on the proposed standards of higher education, should decide at their discretion what are the peculiarities of the training of bachelor 015 "Professional education" (by specialization) and develop an educational program for training such specialists. However, we observe some shortcomings. In particular, it is observed that it does not fully correspond to the specifics of professional activity and the requirements that face the personality of a modern specialist; the inherent uniformity of forms, methods, and techniques of teaching, which causes a decrease in interest in cognitive activity and the future profession. In this regard, the educational process needs to be improved, which is possible only by developing a model of training such specialists and appropriate justification of each of its elements.

In practice, we encounter a situation when in the educational programs of specialists of a certain specialization there is a linear division of individual subjects into disciplines of the pedagogical cycle. However, a feature of the professional training of students of these specialties is the mandatory formation of pedagogical thinking and relevant competencies in such specialists, which will allow them to effectively conduct professional activities in the future. In this context, we agree

with O. Romanovsky's remarks that the creative nature of the pedagogical activity is its most important objective characteristic. It is because the variety of pedagogical situations, and their ambiguity, require variable approaches to the analysis and solution of tasks arising from them [15, pp. 5-6].

The relevance of the initiated research is additionally confirmed by the fact that foreign scientists pay considerable attention to the outlined issue. In particular, S. Sevimli-Celik, J. Johnson [5] analyzed the peculiarities of the formation of professional competence of specialists in vocational education, and J. Zhang, J. Shi, X. Liu, and Y. Zhou [7, p. 56] defined the structure of professional competence of such specialists, which includes civic, digital, information and environmental competence.

In the works of R. Reynolds, P. Howley, E. Southgate, and J. Brown [4], the effectiveness of the formation of professional competence of a future specialist was analyzed depending on the number of hours of practical training in his educational program. The formation of professional competence of students during the pandemic was analyzed in the publication of M. Bilotserkovets, T. Fomenko, A. Kobzhev, O. Berestok, Y. Shcherbyna, O. Krekoten, and A. Kurinnyi [2]. The mechanisms of introducing innovations into the professional training system are defined in works [1; 3] and some others.

The analysis of scientific publications on the research problem and own experience gives reasons to single out existing contradictions that prevent effective professional training of future specialists in specialty 015 Professional education (by specialization):

– between the need for the formation of pedagogical thinking among graduates and traditional approaches to professional training that do not take into account the specifics of training. In addition, the teaching staff, as a rule, is aimed at training a specialist in a certain field, and not a teacher;

– between the lack of agreement in training plans in various educational

institutions, especially technical and pedagogical direction, and the need to obtain the same result - a highly qualified teacher for higher education institutions.

As practice shows, there is a certain gap between the requirements of the labor market for the competencies of specialists in the specialty 015 Professional education and the qualified knowledge and skills of graduates of higher education institutions. To bring the quality of education in higher education institutions closer to the requirements of employers, it is very important to understand the needs and goals of both parties and find solutions to overcome the mismatch of expectations. In this context, the opinion of M. Young, J. Muller [6, pp. 91–92] is appropriate that the process of renewal of higher education requires the determination and justification of the optimal relationship between traditions and innovations. Some developments regarding the resolution of the outlined contradictions, in particular, the structure of training specialists in specialty 015 "Professional education" are reflected in our publications [8-10]. To develop ways to improve the process of professional training of specialists in specialty 015 Professional education (by specialization), it was decided to develop a theoretical model of this process.

The essence of modeling consists in building a model as a simplified analog of the research object, similar to the original in terms of its properties, connections, and characteristics, which are essential from the point of view of this research. Connections and properties that are not important from the point of view of this study can be ignored, or even absent altogether. This is done to exclude factors that add unnecessary complexity to the study of certain properties of the object.

In general, the concept of "model" is interpreted by scientists as a system of elements that reveals specific aspects, connections, and functions of the subject of research [11, p. 79].

The theoretical model of formation of professional competence of specialists in specialty 015 Vocational education (by specialization) describes the process of formation of professional competence in a

holistic way, that is, it takes into account not only the logical and content side of training but also the sequence in time, the stages of the named process. The structure of our model should provide an opportunity to trace any aspects and characteristics of the research object.

The content of the model is determined by the social order of society for the fundamental training of the creative personality of the future specialist. The basis for the construction of this model was defined as a social order for a competitive specialist capable of performing his duties

professionally. In the process of developing a model for the formation of professional competence of specialists in the specialty 015 Professional education (by specialization), the circumstances and relationships between the various components of the structure of the model organization were taken into account, which was based on the principles of scientificity, systematicity, consistency, and accessibility of training, visibility and an individual approach to training, and as well as the connection between learning and life.

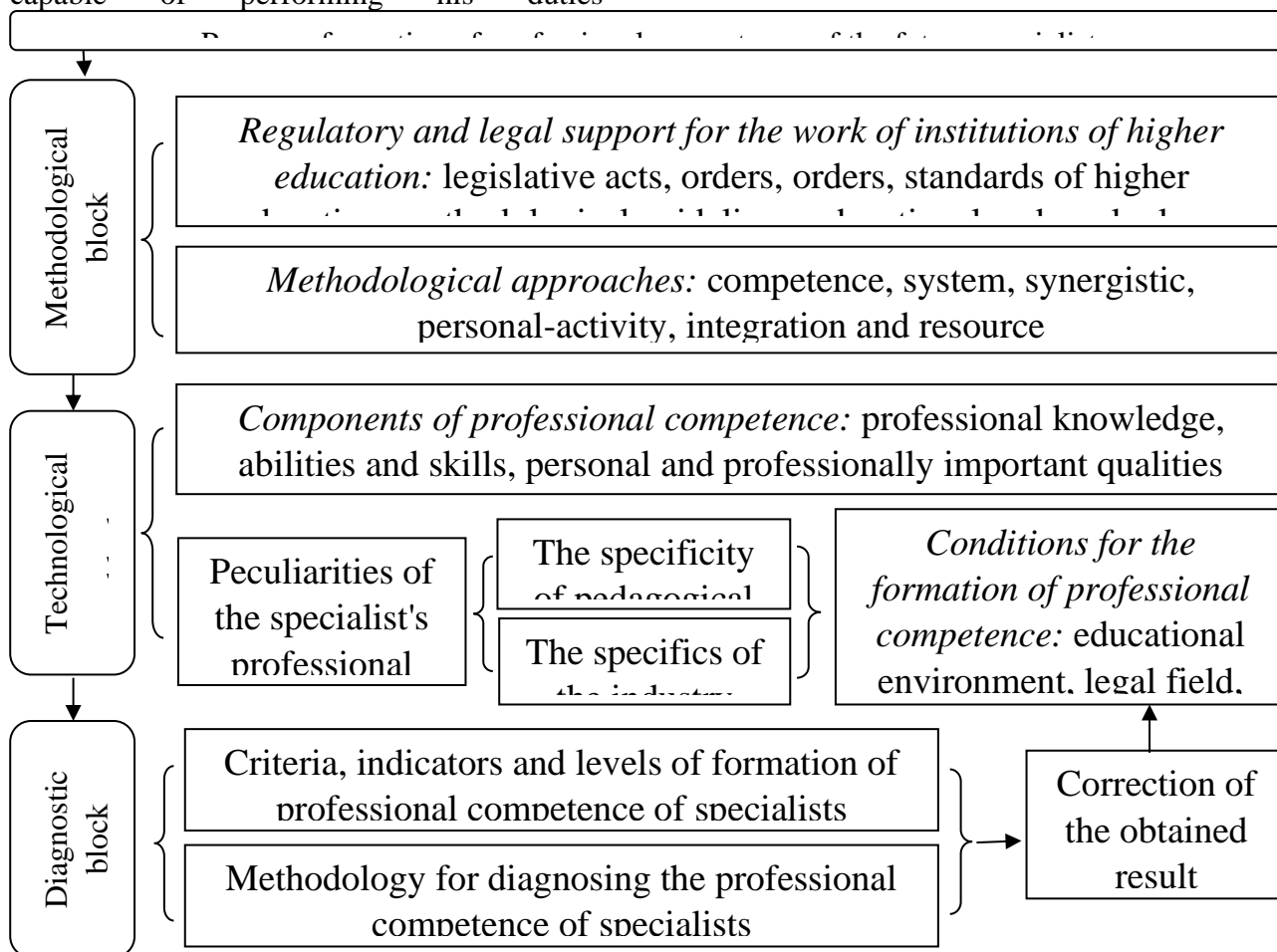


Fig. 1. Theoretical model of formation of professional competence of specialists in specialty 015 Professional education (by specialization)

The proposed model of training specialists in specialty 015 Professional education (by specialization) consists of methodological, technological, and diagnostic blocks. The starting point for the creation of the presented theoretical model is the social order for the training of qualified specialists,

which led to the formulation of the goal of modeling: the formation of the professional competence of the future specialist.

The methodological block is a generalization of theoretical research on the research problem. It contains a regulatory framework for the organization of the

educational process, scientific approaches, and a methodological research base that reflects the specifics of training future specialists in specialty 015 Professional education (by specialization). The use of such methodological approaches as competence, system, person-oriented, activity, integration, and resource will contribute to ensuring the theoretical and methodological integrity of the research to achieve a certain positive result

The technological block reflects the organization of the process of formation of professional competence of future specialists in specialty 015 Professional education (by specialization). It provides for updating, filling, and structuring the content of professional training of future specialists taking into account the specifics of their professional activity.

The diagnostic unit reflects the criteria, indicators, levels of formation of professional competence of future specialists of specialty 015 Professional education (by specialization), as well as the methodology of its diagnosis. In addition, the model provides for the possibility of correcting the obtained result, which will allow to respond accordingly to the innovations available in the educational environment and improve the educational process.

The presented model makes it possible to carry out a theoretical study of the process of professional training of future specialists in the specialty 015 Professional education (by specialization), to improve it, and to organize a pedagogical experiment to check the effectiveness of its initial provisions.

**Conclusions.** Thus, the professional training of future specialists in the specialty 015 Professional education (by specializations) involves the formation of professional competence of such a specialist who is oriented not only in the scientific achievements of his field but also in the innovations of psychological and pedagogical science, possesses various methods and technologies of learning, can self-improvement throughout the entire professional activity. In this regard, there is a constant interest of scientists in the training of

such specialists, and effective ways of this process are being sought.

The proposed model of formation of professional competence of specialists in specialty 015 Vocational education (by specialization) will ensure the effectiveness of their training of bachelors and the possibility of searching for further improvement of the educational process.

We consider the prospects for further scientific research to be the definition and substantiation of the pedagogical conditions for the formation of professional competence of specialists in the specialty 015 Professional education (by specialization) and the development of the appropriate diagnostic apparatus by the specified specialization.

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