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The journal highlights the trends of transformational changes in vocational education in the days of Ukraine's independence, as well as new approaches to: formation of professional qualifications in Ukraine, development of professional standards, quality control of education, management of educational institutions as a project-oriented organization. professional development and self-education of teachers, the formation of digital, entrepreneurial, intercultural competencies of future professionals and methodological competence of teachers.

It is intended for researchers, academic and teaching staff from professional, pre-tertiary professional and higher education institutions, training centres of enterprises, institutes for graduate teacher education, educational (research)-methodical centres of vocational education, doctoral students.

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APPROACHERS TO UNIVERSITY ESP TEACHING

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Abstract.

Relevance: agriculture is the only branch in Ukraine that shows its stable growth and is the main source of foreign currency revenues even in period of economic slowdown. The urgent tasks of Agricultural sector of Ukraine are to provide collaboration of Ukrainian experts in agriculture with foreign partners. Foreign language fluency is required to encourage seminal work of Ukrainian government, EU and its members.

*Aim***:** the purpose of this study was to highlight the strategies for effective ESP teaching in agricultural university and development of recommendations for the introduction of an interdisciplinary approach to teaching discipline in the educational process in agricultural university.

Methods: Theoretical (induction, synthesis and generalization), empirical (study and analysis of pedagogical experience, training programs for future specialists in the field of engineering and agronomy, the results of their activities) are used in the work.

Results: the paper presents an overview of the key issues in ESP teaching in agricultural universities. The difficulties in ESP teaching in non-linguistic university, are examined in the paper. The main approaches of teaching ESP to students majoring in agriculture and engineering are discussed. Recommendations on the implementation of the interdisciplinary course ESP with technical students have been created.

Conclusions: a conclusion has been made that ESP teaching with the students majoring in agriculture and engineering can benefit from using and experimenting with different learning strategies giving preferences to interdisciplinary and profession-based approaches. A special focus should be placed on the web-based techniques and training materials used to foster motivation to learn the foreign language.

Keywords: *ESP teaching, agricultural university, multidisciplinary, profession-based, web-based techniques, agriculture*

Introduction. Agriculture is of particular importance in the economy of Ukraine. It belongs to the main complexes that determine the strategies for supporting the state's activity. The importance of agro-industrial complex is not only in ensuring the needs of people in food, but also in significant affect on the employment and efficiency of national production in general. The agro-industrial complex of Ukraine employs about 35% of all workers in the field of material production. More than a quarter of all production funds are concentrated in this field and almost 15% of the country's GDP is formed in agro-industrial complex. It includes all types of production and production services, the creation and development of which are aimed at the production of final consumer products from agricultural raw materials.

Ukrainian farmers outpaced metallurgists and entered the market leaders in terms of exports of products, providing almost 40% of all foreign currency revenues of Ukraine in 2018. In recent years, Ukraine became one of the world's largest producer and exporter of sunflower oil and has taken one of the first positions in the export of sunflower cattle

cake. According to exports of grain and legumes, Ukraine takes the second place in the export of rapeseed, the fourth place in the world export of corn and barley and the sixth place in the export of wheat and soybeans. Honey production has declined and in 2018 the amount of exported honey has increased. Ukraine is ranked as the number one country in Europe for honey production, producing 75 thousand metric tons of honey annually.

Today, agriculture is almost the only industry in Ukraine that shows its stable growth, despite the complicated social and economic conditions. Recently, this industry has become almost the main exporter and the main source of foreign currency revenues to the country. However, despite some progress, the agricultural industry requires systematic reforms. It considers, primarily, the transition to EU standards that will provide increasing exports. In view of this, the Ministry of Agrarian Policy and Food developed a Comprehensive Strategy for the Development of Agriculture and Rural Areas for 2015-2020. The strategy is considered to be a crucial element in the progress the collaborative work of Ukrainian government and EU and its members, USAD, Global bank, Food and Agricultural Organization (FAO), European Bank for Reconstruction and Development, Organization for Economic Cooperation and Development, European Investment Bank and budget contributors (countries, organizations and companies, scientific laboratories). Consequently, Ukraine will create competitive, export-oriented agricultural environment. According to this concept one of the urgent issues is improvement of agrarian policy in the field of science, education and innovation. It is aimed, in particular, to reform the field of agrarian education for improving the quality of specialists, working in the agricultural sector of Ukraine.

The implementation of this concept in terms of international cooperation is possible due to increasing foreign language fluency in educational establishments that prepare future specialists for agricultural industry.

The question is whether agricultural universities are ready to prepare competitive agricultural experts for the world labor market. The policy of Ministry of education of Ukraine is compliant with the concept of agricultural development for 2015-2020. Ministry of education of Ukraine considers higher education to be the engine of social transformation, and English to be a key competence for integration and globalization of the economy, a tool for international communication, a strategy for incorporation into the European educational, scientific and professional environment, conditions for effective integration and factor of economic growth of the country. Ukraine also admits the importance of language fluency for education and profession opportunities of Ukrainian people. The concept on the development of foreign language learning in higher schools considers university students to take part in educational and professional life at local and international levels (Mon.gov.ua. news, 2021). A. Fălăuș admits that ”in comparison with teaching EGP, teaching ESP usually poses a lot more challenges” (Fălăuș, 2017).

The article aims to determine the strategies for effective ESP teaching in technical university taking into account the experience of top-notch experts in the field of ESP learning and to create of recommendations for the effective implementation of an interdisciplinary approach to the ESP course for students of technical specialties.

Research methods: Theoretical (induction, deduction, synthesis and generalization); empirical (study and analysis of pedagogical experience, work plans, training programs for future engineers and agricultural workers and the results of their activities) are used in the paper.

Results and discussion. The history of English for Specific Purposes (ESP) instructions is rather young. The qualification of a specialist in agricultural sphere in the middle of the 20th century didn’t require foreign language fluency. Foreign language university learning was based on Grammar Translation method. This means that foreign language instruction included detailed analysis and memorizing grammar rules in order to translate sentences and literary texts. According to Howatt, vocabulary selection is based solely on the reading texts used, and words are taught through bilingual word lists, dictionary study, and memorization. In a typical Grammar-Translation text, the grammar rules are presented and illustrated, a list of vocabulary items is presented with their translation equivalents, and translation exercises are prescribed. The sentence is the basic unit of teaching and language practice. Much of the lesson is devoted to translating sentences into and out of the target language, and it is this focus on the sentence that is a distinctive feature of the method. Earlier approaches to foreign language study used grammar as an aid to the study of texts in a foreign language. But this was thought to be too difficult for students in secondary schools, and the focus on the sentence was an attempt to make language learning easier (Howatt, 1984, p.131). As we see, reading and writing were the major focus, ittle or no

systematic attention was paid to university students' speaking or listening. Therefore, engineering graduates could cite a grammar rule, but wasn't able to correctly determine part of speech in the text, represent the information in monologue speech, but not to participate the dialogue.

Only in 1970th the physiological and linguistic peculiarities of foreign language learning became subject matter of Ukrainian pedagogy. From the survey of approaches and methods we have seen that the history of language teaching in the last one hundred years has been characterized by a search for more effective ways of teaching foreign languages. The adoption of new teaching approach or method such as Communicative Language Teaching, Competency-Based Language Teaching, Content-Based Instruction, Cooperative Learning contributed to the systematization of foreign language teaching instruction in the context of student individual work, final testing of basic competences, creating new printed and interactive course books, curriculum.

However, not all of mentioned above approaches are relevant in ESP teaching. We analyzed surveys conveyed from 1970 till 2020 on approaches and methods of ESP teaching in agricultural and engineering universities and found out that ESP in technical university faces a lot of difficulties: discrepancy between the hours devoted to ESP learning and high standards for profession-based foreign language classes, low motivation, speaking deskilling in the last years of study (Bobrova, 2015, p.38). To overcome these challenges each university searches for the ways of improving foreign language fluency. First of all, it concerns grouping of the students according to the language skills. The survey conducted with the first-year and second-year undergraduate students of Kosovo university (N = 239) from the Mechanical Engineering, Electrical Engineering, Computer Sciences, Architecture, Construction Engineering, and Food Technology departments showed that "the engineering students' perception regarding professional vocabulary, the selection of engineering topics, and their modification and adoption in the classroom should be based on the students' language knowledge as a group, and the instructors' teaching skills need to be adapted to deliver courses in a more interactive learning environment" (Bekteshi and Xhaferi, 2020, p. 100). E. Bekteshi and B. Xhaferi determine two basic factors that influence ESP successful learning: first of all, it is grouping the students according the level of foreign language competence and "instructors' teaching skills" that include the desire and ability of a teacher to use technology.

Second of all, the author suggests improving ESP learning by designing computer-based textbooks for individual students' work of different level of difficulty. "They need to design courses keeping in mind the nature of the particular target and learning situations they are to deal with, at the same time juggling professionally with the requirements imposed by working with large heterogeneous classes" (Fălăuș, 2017, p. 12059).

Another effective strategy (in terms of increasing the motivation of students) is organizing projects, festivals, theaters, scientific and practical conferences. "These types of events not only increase the motivation of students to learn a foreign language, but also contribute to the development of communication and presentation skills, team skills and other necessary engineering competencies (Batunova, 2014; Aksenova, Shepetovski, 2014).

Some scientists claim that to have excellent outcomes in the context of ESP learning in technical university is possible if integrated use of communicative method and grammar and translation method are applied (Mihailov, 2018, p.149). The significance of cross-subject teaching in ESP learning is described in research of a number of scientists. Ishina L., for example, states that teaching two languages (English and Latin) to students majoring in agriculture can benefit ESP learning. "The ability to compare and analyze in this specialty contributes to the formation of language experience on the basis of cross-subject connections" (Ishina, 2011). Voinatovska S. agrees that cross-subject teaching enhances agricultural student motivation and performance. ESP learning, from Obraztsov P. point of view, mustn't be limited by learning foreign language for special purposes. It should be integrated with the disciplines of professional cycle to acquire competences (Obraztsov, 2005). Cross-subject teaching as a process and result causes the systematicity and integrity of professional training, ensuring the formation of a system of professional knowledge, skills in accordance with the state standards of quality of education through the structural organization of educational content, promotes the formation and development of key personal competencies (Hannichenko, 2017, p. 6).

Scientists from Tomsk polytechnic university established perspectives for the concepts of designing an interdisciplinary course that aims to develop and master relevant communication and professional skills, using English as a means and a kind of mediator in shaping future engineers. Analytical revision and careful selection of the sources of information (including the above) for ESP materials develop-

ment can proceed with the cooperation of subject teachers. Overseas experience showed that collaboration between a subject expert and an English language teacher might be employed for the benefit of learners who will make the most of this integration (Dudley-Evans and St John, 1998). According to I.A. Cheremissina and M.J. Riemer, internationally recognized and validated tests, such as the British and Australian International English Testing Service (IELTS) examinations, which have a strong focus on academic matters might be taken as basis to evaluate the students' skills (Cheremissina and Riemer, 2001 p. 59).

The learning outcomes in A. Dragoescu, S. Stefanovic syllabus design were the starting point, i.e. what a future mechanical engineer is supposed to know when the required course is completed. Learning outcomes are defined with the help of experts from Industry, the Union of Employers, the Union of Engineers and Technicians, and students. The knowledge and skills concerned with the English language are categorized as ESP for professional and occupational purposes which enable students to read technical literature and contribute to students' specialization and ESP for soft skills such as entrepreneurship, business communication, IT, etc. (Dragoescu and Stefanovic, 2010, p.224).

The concept of profession-based foreign language learning was investigated in the end of the 20th century by M.V. Lyakhovitskiy, L.S. Gegechkori, N.I. Gez, E.I. Passov, G.A Kitaygorodskaya.

In 1973 M.V. Lyakhovitskiy pointed out that foreign language learning is not an end in itself, but a strategy for improving educational attainment. Profession based approach should respond to the distinctive circumstances such as "working on special texts, learning profession-based topics and vocabulary to develop speaking skills, designing instructions for teachers to improve students' grammar and vocabulary" (Liakhovetskiy, 1973). The scientist considers that ESP teaching in agricultural university should be focused "learning language (grammar, vocabulary, phonetics) and developing communication skills specific to a particular area related to a particular profession". E.V. Roschina insists on designing ESP textbooks and instructions that will help future specialists in agrarian sphere to solve practical professional tasks. To fulfill the profession-based potential of ESP learning, the following conditions must be observed:

- to set clear objectives of ESP learning activities;
- the social and professional focus of these activities;
- the trainees must be satisfied solving professional tasks;
- the ability of trainees to be creative in solving professional problems;
- a favourable psychological climate in class (Roschina, 1978, p. 4).

According to O. Koval, implementation of «competence-based approach» in university foreign language learning involves scheduling educational material with a focus on three key stages of learning, which depend on the objectives set by the curriculum such as:

- general training, including the basics of phonetics, conversational practice, study of grammar;
- specialized training, which involves the acquisition of skills of selection, scanning, reading texts within the specialty, as well as writing abstracts (e.g. technical articles, reviews, research), the preparation of messages within the received specialty (reports, abstracts in English);
- social and professional training, which involves the students' achievement of an advanced level of language proficiency, which includes the ability to listen and understand lecture material in English, as well as take part in University and international seminars and discussions on technical topics within the framework of the received specialty, independently prepare and conduct presentations in the specialty (Roschina, 1978, p. 3).

Both profession-based and integrated approach in ESP teaching involves the provides using different forms and elements of interactive and problem based learning; using up-to-date audio and video resources, multimedia programs and web-based technology, application of student-centered approach when creating individual tasks and choosing the forms of communication; improving the content of professional training (Dubina, 2016, p. 119).

The technology of ESP learning in technical university is usually focused on the student's personality, his active participation in self-development, gaining quality knowledge, professional skills, including skills of teamwork and creative solutions to specific problems. In order to enhance ESP learning university teachers use interactive methods such as project web-based activities (Kuleshov and Gorohova, 2019), Moodle platform, mass media and blogs, e-mails and webinars, interactive lectures, online tests, ESP teacher site as foreign language learning technology, skype group work. (Lomachenko, Kokodey and Hituschenko, 2019; Chernyshkova, 2018), smart books, multimedia presentations, online testing and videos, web-based apps and platforms (Chaikovska and Zbaravska, 2020), podcasts

(Zaharova, 2020). According to M.V. Zaharova, «presentations, podcasts, various tools that help to contain as much information in different graphic forms make each session on different lexical, grammatical, conversational, professional topics more vivid, diverse and memorable". N.N. Serostanova and E.I. Chopornaya (2020) consider MALL services such as universal (Duolingo, Lingualeo, Semper, Busuu, Lingvist, etc.); apps for the formation and development of lexical skills (Easy ten, Upmind, Memrise, Quizlet, etc.); apps for improving grammatical skills (English Phrasal Verbs, Filp and Learn, Color Verbs, etc.); apps that offer video fragments and tasks developed for them as a basis for learning a foreign language (FluentU, TED, YouTube, etc.); news apps (BBC News, CNN News, etc.); apps for the formation of foreign-language communication skills (Urban Dictionary, Genius, Smigin Travel, etc.); mobile dictionaries (ABBYY Lingvo Dictionaries, SlovoEd, Multitran, etc.); automatic translators (Word Lens, Google Translate, iTranslate, etc.) allow to better provide self-study, as well as learning activities in groups and help to increase the motivation of students through the use of technical means they know.

Conclusions. Foreign language fluency is a key to economic success of the country, especially when we deal with the most powerful branch of the country like agriculture. The present paper is an attempt to summarize the recommendations and the results of the studies on ESP learning and teaching in technical universities. Literature review showed that the capacity to teach ESP for students majoring in agriculture and engineering remains weak. The main areas of research were the interdisciplinary approach in teaching ESP through team-teaching between career subject teachers and their ESP colleagues; developing instructions to the topic "Microbiology".

Based on the review, we can conclude that ESP teaching in agricultural university should contain the following procedures:

- teaching ESP parallel to the integrated major;
- designing ESP course book in accordance with international standards (CEFR), contents and structure of British and Australian International English Testing Service (IELTS); a leveled course book should combine a strong grammar syllabus with the useful industry-specific vocabulary;
- the emphasis in ESP teaching should be done, first of all, on the development of profession-based communicative skills and abilities;
- development of so-called "Soft skills", important for engineering specialties: public speaking and presentations, writing reports, messages, resumes, motivational letters, skills of holding and participating in online meetings, ability to work in a team;
- designing syllabus and training materials in collaboration with subject matter expert;
- grouping the students according their language fluency;
- regular usage of web-based tasks and activities;
- organization of projects, seminars, round tables, scientific and practical student conferences during the ESP course in order to increase motivation among students and improve the previously mentioned "soft skills" such as teamwork, project management, the development of oratorical abilities, etc.

Further study will consider the cross-subject potential of ESP in terms of Latin and English learning with the students majoring in agronomy.

List of references

Аксенова, Н. В. и Шепетовский, Д. В., 2014. Организация внеаудиторной работы студентов как мотивация к изучению английского языка в техническом ВУЗе. *Молодой ученый*, 7, с. 481-483.

Батунова, И. В., 2017. Процесс обучения иностранному языку (английскому) в неязыковых вузах. *Международный научно-исследовательский журнал,* 1 (3), с. 25-27. DOI: https://doi.org/10.23670/IRJ.2017.55.035

Боброва, Н.В., 2015. Трудности профильно-ориентированного обучения английскому языку в техническом вузе. *Приволжский научный вестник*, 44, с. 37-40.

Ганніченко, Т. А. і Жебко, О. О., 2017. Використання міждисциплінарної інтеграції у формуванні іншомовної професійної компетентності студентів аграрного профілю. *Молодий вчений*. 4 (1), с. 5-8. Доступно: http://nbuv.gov.ua/UJRN/molv_2017_4. [Дата звернення: 26 грудень 2020].

Гегечкори, Л.Ш., 1975. *К проблеме интенсификации процесса обучения взрослых иноязычной речи.* Тбилиси: Изд-во Тбил. ун-та.

Гез, Н.И.,1980. *Обучение говорению: Текст лекций по курсу «Методика обучения иностр. яз.»*. М.: МГПИИЯ.

Захарова, М.В., 2020. Цифровые инструменты преподавания английского языка. *Мир педагогики и психологии: международный научно-практический журнал,* 06 (47). Доступно: https://scipress.ru/pedagogy/articles/tsifrovye-instrumenty-prepodavaniya-anglijskogo-yazyka.html [Дата звернення: 19 Червень 2020].

Ішина, Л.А., 2011. Особенности обучения студентов аграрного вуза иностранному языку. *Ученые записки Забайкальского государственного университета. Педагогические науки,* (5), с. 125-128. Доступно: https://cyberleninka.ru/article/n/osobennosti-obucheniya-studentov-agrarnogo-vuza-inostrannomu-yazyku [Дата звернення: 19 Вересень 2020].

Китайгородская, Г.А., 1982. *Методика интенсивного обучения иностранным языкам*. М.: Высш. Шк.

Коваль, О.И., 2012. Особенности преподавания английского языка в неязыковом вузе. *Актуальные проблемы гуманитарных и естественных наук*, 6, с. 234-238.

Кулешов, А.В. и Горохова, А.М., 2019. Организация индивидуально-групповой проектной деятельности при обучении иностранному языку магистрантов аграрного вуза с использование сетевых ресурсов. *Электротехнологии и электрооборудование в сельском хозяйстве*, 2 (91), с. 136-140.

Курбакова, М. А., 2016. Способы оптимизации процесса обучения иностранному языку (современное применение психотерапевтического метода доктора Лозанова). *Язык и культура*, 3(35), с. 137-145. DOI: https://doi.org/10.17223/19996195/35/12

Ліга закон, 2020, *Єдина комплексна стратегія та план дій розвитку сільського господарства та сільських територій України на 2015 – 2020 роки,* [online] Доступно: http://search.liga-zakon.ua/l_doc2.nsf/link1/NT1978.html. [Дата звернення: 08 Грудень 2020].

Ломаченко, Т.И., Кокодей, Т.А. и Хитущенко, В.В., 2019. Инновационные подходы в использовании информационно-коммуникационных технологий в образовательном процессе в условиях цифровой экономики. *Вестник Алтайской академии экономики и права.* 1(1), с. 109-117. Доступно: https://vaael.ru/ru/article/view?id=244 [Дата звернення: 28 Листопад 2020].

Ляховицкий, М.В., 1973. О некоторых базисных категориях методики обучения иностранным языкам. *Иностранные языки в школе*, 1.

Міністерство освіти і науки України (МОН), 2019. *Концепція розвитку англійської мови в університетах,* [online] Доступно: https://mon.gov.ua/ua/news/mon-stvorilo-koncepciyu-rozvitku-anglijskoyi-v-universitetah-u-dodatku-riven-v1-obovyazkova-umova-vstupu-v2-vipusku-vikladannya-profilnih-disciplin-inozemnoyu-ta-movni-skriningi [Дата звернення: 9 Вересень 2020].

Михайлов, В.В., 2018. Особенности преподавания англ. яз. в техническом вузе. *Перспективы науки и образования*, 4(34), с.145-149.

Образцов, П.И., 2005. *Проектирование и конструирование профессионально ориентированной технологии обучения*. Орел, 61 с.

Пассов, Е.И., 1983. *Теоретические основы обучения иноязычному говорению.* Воронеж, 199 с.

Рощина, Е.В., 1978. Функции иностранного языка как учебного предмета в системе обучения в университете, *Иностранные языки на неспециальных факультетах: межвуз. сб. Л.: Изд-во Ленингр. Ун-та*, с. 3-6.

Серостанова, Н.Н. и Чопорная, Е.І., 2020. Современные технологии преподавания иностранных языков в цифровом образовании. *Современные проблемы науки и образования*, 6. Доступно: URL: http://www.science]education.ru/ru/article/view?id=30254 [Дата звернення: 24 Грудень 2020]. DOI: https://doi.org/10.17513/spno.30254

Чернышкова Н. В., 2018. SMART-технологии в преподавании иностранного языка. *Филологические науки. Вопросы теории и практики*, 2 (80), с. 211-214.

Bekteshi E. and Xhaferi B., 2020. An Analysis of English for Specific Purposes among University Students. *Educational Process: International Journal*, 9(2), pp. 90-102. DOI: https://doi.org/10.22521/edupij.2020.92.2

Cheremissina, I.A. and Riemer M.J., 2001. English for Specific Purposes in engineering education at the Tomsk Polytechnic University. *5th Baltic Region Seminar on Engineering Education,* Gdynia, Poland, 17-19 September 2001, pp. 57-60. Доступно:*https://www.researchgate.net/publication/302592987_English_for_Specific_Purposes_in_engineering_education_at_the_Tomsk_Polytechnic_University#fullTextFileContent* [Дата звернення: 2 Грудень 2020].

Chaikovska, O. and Zbaravska, L., 2020. The efficiency of Quizlet-based EFL vocabulary learning in preparing undergraduates for state English exam. *Advanced Education. Special issue,*14. DOI: https://doi.org/10.20535/2410-8286.197808, pp.84-90.

Dragoescu, A.-A. and Stefanovic S., 2010. Quality improvements of ESP in mechanical engineering. *International Journal for Quality research*, 4 (3), pp. 221-225. Доступно: http://www.cqm.rs/2010/4iqc/pdf/006.pdf [Дата звернення: 2 Травень 2020].

Dudley-Evans, T. and St John, M.J., 1998. *Developments in ESP: a Multi-disciplinary Approach*. Cambridge: Cambridge University Press.

Fălăuş, A., 2017. The current challenges of teaching ESP. *IOP Conference Series: Materials Science and Engineering*, 200, p. 012059. DOI: https://doi.org/10.1088/1757-899x/200/1/012059

Howatt, T., 1997. Talking shop: Transformation and change in ELT. *ELT Journal*, 5(3), pp. 263-268.

Translated & Transliterated

Aksenova, N. V. i Shepetovskiy, D. V., 2014. Organizatsiya vneauditornoy rabotyi studentov kak motivatsiya k izucheniyu angliyskogo yazyika v tehnicheskom VUZe [Organization of the extracurricular work of students as a motivation to learn English in technical colleges]. *Molodoy uchenyiy* [Young Scientist], 7, s. 481-483. [in Russian].

Batunova, I. V., 2017. Protsess obucheniya inostrannomu yazyiku (angliyskomu) v neyazyikovyih vuzah [English language teaching in non-linguistic university]. *Mezhdunarodnyiy nauchno-issledovatelskiy zhurnal [International scientific and research bulletin]*, 1 (3), s. 25-27, DOI: https://doi.org/10.23670/IRJ.2017.55.035. [in Russian].

Bobrova, N.V., 2015. Trudnosti profilno-orientirovannogo obucheniya angliyskomu yazyiku v tehnicheskom vuze [Difficulties in profession-based teaching English in technical university]. *Privolzhskiy nauchnyiy vestnik [Scientific Bulletin]*, 44, s. 37-40, [in Russian].

Hannichenko, T. A. i Zhebko, O. O., 2017. Vykorystannia mizhdystsyplinarnoi intehratsii u formuvanni inshomovnoi profesiinoi kompetentnosti studentiv ahrarnoho profiliu [Use of interdisciplinary integration in the formation of foreign-language professional competence of agricultural students]. *Molodyi vchenyi [Young scientist]*, 4 (1), s. 5-8 [online] Dostupno: http://nbuv.gov.ua/UJRN/molv_2017_4. [Data zvernennia: 26 Hruden 2020], [in Ukrainian].

Gegechkori, L.Sh., 1975. *K probleme intensifikatsii protsessa obucheniya vzroslyih inoyazyichnoy rechi [To the problem of intensification of the process of adult foreign language speech education.]*. Tbilisi: Izd-vo Tbil. un-ta, [in Russian].

Gez, N.I., 1980. *Obuchenie govoreniyu: Tekst lektsiy po kursu «Metodika obucheniya inostr. yaz.» [Teaching Speaking: Text of lectures on the course "The method of learning foreign studies]*. Moscow: MGPIIYa, [in Russian].

Zaharova, M.V., 2020. Tsifrovyie instrumentyi prepodavaniya angliyskogo yazyika [Digital tools for teaching English]. *Mir pedagogiki i psihologii: mezhdunarodnyiy nauchno-prakticheskiy zhurnal [The world of pedagogy and psychology: an international scientific and practical journal]*, 06 (47). [online] Dostupno: *https://scipress.ru/pedagogy/articles/tsifrovye-instrumenty-prepodavaniya-anglijskogo-yazyka.html* [Data zvernennia 19 Lypen 2020], [in Russian].

Ishina, L.A., 2011. Osobennosti obucheniya studentov agrarnogo vuza inostrannomu yazyiku [Peculiarities of learning English with the students of agricultural university]. *Uchenyie zapiski Zabaykalskogo gosudarstvennogo universiteta. Pedagogicheskie nauki [Scientists note to the State University of Baikal. Educational sciences]*, 5, s. 125-128. [online] Dostupno: https://scipress.ru/pedagogy/articles/tsifrovye-instrumenty-prepodavaniya-anglijskogo-yazyka.html [Data zvernennia 19 Veresen 2020], [in Russian].

Kitaygorodskaya, G.A., 1982. *Metodika intensivnogo obucheniya inostrannyim yazikam [The technique of intensive foreign language training]*. Moscow: Vyissh. shk., [in Russian].

Koval, O.I., 2012. Osobennosti prepodavaniya angliiskogo yazyka v neyazykovom vuze [Features of teaching English in a non-language university]. *Aktualnye problemy gumanitarnyh i estestvennyh nauk [Current humanities and science problems]*, 6, s. 234-238. [in Russian].

Kuleshov, A.V. i Gorohova, A.M., 2019. Organizatsiya individualno-gruppovoy proektnoy deyatelnosti pri obuchenii inostrannomu yazyiku magistrantov agrarnogo vuza s ispolzovanie setevyih resursov [Organization of individual-group project activities in the study of foreign language undergraduates of agricultural

university with the use of network resources], *Электротехнологии и электрооборудование в сельском хозяйстве*, 2 (91), с. 136-140, [in Russian].

Kurbakova, M. A., 2016. Sposobyi optimizatsii protsessa obucheniya inostrannomu yazyiku (sovremennoe primenenie psihoterapevticheskogo metoda doktora Lozanova) [Ways to optimize the process of learning a foreign language (modern application of the psychotherapeutic method of Dr. Lozanov)]. *Yazyik i kultura* [*Language and Culture*], 3 (35), p. 137-145. DOI: https://doi.org/10.17223/19996195/35/12, [in Russian].

Liha zakon, 2020, Edyna kompleksna stratehiia ta plan dii rozvytku silskoho hospodarstva ta silskykh terytorii Ukrainy na 2015 – 2020 roky [A single comprehensive strategy and action plan for the development of agriculture and rural areas in Ukraine for 2015 – 2020]. *Ministerstvo silskoho hospodarstva Ukrainy [Ministry of agriculture of Ukraine]*. [online] Dostupno: http://search.ligazakon.ua/l_doc2.nsf/link1/NT1978.html [Data zvernennia: 08 Hruden 2020], [in Ukrainian].

Lomachenko, T.I., Kokodey, T.A. i Hituschenko, V.V., 2019. Innovatsionnyie podhodyi v ispolzovanii informatsionno-kommunikatsionnyih tehnologiy v obrazovatelnom protsesse v usloviyah tsifrovoy ekonomiki [Innovative approaches to the use of information and communication technologies in the educational process in the digital economy]. *Vestnik Altayskoy akademii ekonomiki i prava [Herald of the Altai Academy of Economics and Law]*, 1(1), 109-117. [online] Dostupno: https://vaael.ru/ru/article/view?id=244 [Data zvernennia: 28 Lystopad 2020], [in Russian].

Lyahovitskiy, M.V., 1973. O Nekotoryih bazisnyih kategoriyah metodiki obucheniya inostrannyim yazyikam [About some basic categories of methods of teaching foreign languages]. *Inostrannyie yazyiki v shkole [Foreign languages in school]*, 1, [in Russian].

Ministerstvo osvity i nauky Ukrainy [Ministry of Education and Science of Ukraine] (MON), 2019. *Kontseptsiia rozvytku anhliiskoi movy v universytetakh* [*The concept of English language development in universities]*. [online] Dostupno: https://mon.gov.ua/ua/news/mon-stvorilo-koncepciyu-rozvitku-anglijskoyi-v-universitetah-u-dodatku-riven-v1-obovyazkova-umova-vstupu-v2-vipusku-vikladannya-profilnih-disciplin-inozemnoyu-ta-movni-skriningi [Data zvernennya: 9 Veresen 2020], [in Ukrainian].

Mihaylov, V.V., 2018. Osobennosti prepodavaniya angl. yaz. v tehnicheskom vuze [Peculiarities of teaching English in technical high school]. *Perspektivyi nauki i obrazovaniya [Perspecives of science and education]*, 4(34), s. 145-149, [in Russian].

Obraztsov, P.I., 2005. Proektirovanie i konstruirovanie professionalno orientirovannoy tehnologii obucheniya [*Designing professionally oriented learning technology*]. Orel, [in Russian].

Passov, E.I., 1983. *Teoreticheskie osnovyi obucheniya inoyazyichnomu govoreniyu [Theoretical Basics of Learning Foreign Language*]. Voronezh: Voronezh University, [in Russian].

Roschina, E.V., 1978. Funktsii inostrannogo yazyika kak uchebnogo predmeta v sisteme obucheniya v universitete [The functions of a foreign language as an educational subject in the system of study at the university]. *Inostrannyie yazyiki na nespetsialnyih fakultetah: mezhvuz. sb. L.: Izd-vo Leningr. Un-ta [Foreign languages in non-special faculties]*, s. 3-6, [in Russian].

Serostanova, N.N., Chopornaya, E.I., 2020. Sovremennye tehnologii prepodavaniya inostrannyh yazykov v cifrovom obrazovanii [Modern technology of teaching foreign languages in digital education]. *Sovremennye problemy nauki i obrazovaniya [The current problems of science and education]* Dosupno: http://www.science]education.ru/ru/article/view?id=30254 [Data zvernennia: 24 Hruden 2020]. DOI: https://doi.org/10.17513/spno.30254

Chernyshkova N. V., 2018. SMART-tehnologii v prepodavanii inostrannogo yazyka [SMART technology in teaching a foreign language]. *Filologicheskie nauki. Voprosy teorii i praktiki* [Philological sciences. Theory and Practice], 2 (80), s. 211-214.

Bekteshi, E., Xhaferi, B., 2020. An Analysis of English for Specific Purposes among University Students. *Educational Process: International Journal*, 9(2), 90-102. DOI: https://doi.org/10.22521/edupij.2020.92.2 , [in English].

Cheremissina, I.A., Riemer M.J. 2001. English for Specific Purposes in engineering education at the Tomsk Polytechnic University. *5th Baltic Region Seminar on Engineering Education*, Gdynia, Poland, 17-19 September 2001, pp. 57-60. Доступно:*https://www.researchgate.net/publication/302592987_English_for_Specific_Purposes_in_engineering_education_at_the_Tomsk_Polytechnic_University#fullTextFileContent* [Data zvernennia: 2 Hruden 2020], [in English].

Chaikovska, O., Zbaravska, L., 2020. The efficiency of Quizlet-based EFL vocabulary learning in preparing undergraduates for state English exam. *Advanced Education. Special issue,*14, pp. 84-90. DOI: https://doi.org/10.20535/2410-8286.197808 [in English].

Dragoescu, A.-A. and Stefanovic S., 2010. Quality improvements of ESP in mechanical engineering. *International Journal for Quality research*, 4 (3), pp. 221-225. Доступно: http://www.cqm.rs/2010/4iqc/pdf/006.pdf [Data zvernennia: 2 Traven 2020], [in English].

Dudley-Evans, T. and St John, M.J., 1998. *Developments in ESP: a Multi-disciplinary Approach*. Cambridge: Cambridge University Press, [in English].

Fălăuş, A., 2017. The current challenges of teaching ESP. *IOP Conference Series: Materials Science and Engineering*, 200, p. 012059. DOI: https://doi.org/10.1088/1757-899x/200/1/012059, [in English].

Howatt, T., 1997. Talking shop: Transformation and change in ELT. *ELT Journal*, 5(3), pp. 263-268, [in English].

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ТЕОРЕТИЧНІ ЗАСАДИ ВИКЛАДАННЯ АНГЛІЙСЬКОЇ МОВИ ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ У ЗАКЛАДАХ ВИЩОЇ ОСВІТИ

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Реферат.

Актуальність: сільське господарство є єдиною галуззю в Україні, яка демонструє стабільне зростання і є основним джерелом надходжень в іноземній валюті навіть в період економічного спаду. Нагальними завданнями аграрного сектору України є забезпечення співпраці українських експертів у сільському господарстві з іноземними партнерами. Вільне володіння іноземною мовою необхідне для ефективної співпраці українського уряду з ЄС та його партнерами.

Метою цього дослідження було висвітлення стратегій ефективного викладання АПС (англійської за професійним спрямуванням) в аграрному університеті та розробка рекомендацій щодо впровадження міждисциплінарного підходу до викладання дисципліни у навчальний процес ЗВО.

Методи: Теоретичні (індукція, синтез і узагальнення); емпіричні (вивчення та аналіз педагогічного досвіду, програм підготовки майбутніх фахівців у галузі сільського господарства, результатів їх діяльності) використовуються у роботі.

Результати: У статті представлено огляд основних підходів та аналіз експериментальних досліджень з викладання англійської за професійним спрямуванням в аграрних та технічних університетах. Створено рекомендації щодо впровадження міждисциплінарного курсу з АПС в аграрних ЗВО.

Висновки: Аналіз існуючих підходів до вивчення англійської мови за професійним спрямуванням та вивчення передового досвіду викладачів дає підстави стверджувати, що у викладанні АПС можуть бути застосовані різні стратегії навчання, проте переваги варто надавати міждисциплінарним та професійним підходам. Особлива увага повинна бути зосереджена на веб-методах і навчальних матеріалах, які використовуються для підвищення мотивації у студентів нелінгвістичних факультетів.

Ключові слова: *викладання АПС, аграрний університет, міждисциплінарний, професійний, цифрові технології, сільське господарство*

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HISTORICAL GENESIS OF FORMATION AND DEVELOPMENT OF THE PROFESSION "MEDICAL REPRESENTATIVE" IN UKRAINE

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Abstract.

The relevance of the study is due to the need for the state regulation of the pharmaceutical companies' medical representatives' professional training as the key figures within the domestic pharmaceutical market in the system of formal, non-formal and informal education.

Purpose: to characterize the features of the professional training development of these specialists in Ukraine on the basis of studying the history of formation and development of the "medical representative" profession.

Methods: general-scientific (analysis, synthesis, comparison, generalization) – in order to study scientific sources; specific-scientific (comparative-historical) – in order to identify the peculiarities of the professional formation of medical representative within the Ukrainian pharmaceutical market;

Results: the historical genesis of the information problem in the field of pharmacy was investigated; the conditions that contributed to the development of the profession of "medical representative" in Ukraine was substantiated; the professional functions of medical representatives were characterized; the peculiarities of the development of their professional training in the system of formal, non-formal and informal education of Ukraine were determined.

Conclusions: the development of the profession of "medical representative" started in the 90's of the last century and is associated with the formation of the pharmaceutical market of medicines and drugs; professional functions of medical representatives are informational, presentational and educational; these functions are aimed at bringing the branded generics to the domestic pharmaceutical market; in Ukraine, the training of medical representatives is carried out only by pharmaceutical companies and representative offices; in contrast to world practice, domestic associations of pharmaceutical (medical) workers stay away from the training of medical representatives; the profession of "medical representative" in Ukraine is still illegitimate; There is an urgent need to improve the professional training of medical representatives of pharmaceutical companies through the development and implementation of educational and professional programs at the second (master's) level of higher education and advanced training in postgraduate education.

Keywords: *lifelong vocational learning, pharmaceutical education, postgraduate medical education, medical representative, pharmaceutical companies.*

Introduction. The pharmaceutical market is one of the most promising sectors of the national economy. In Ukraine it is represented by a system of development, production and selling of medicines. Moreover, the development of each component of this system is subjected to its own logic (Ivanov, 2009). According to the topic of the study, our research interest is focused on such a component as the sale of medications – a branch of trade, the feature of which is that "it is controlled by medical criteria of risk and benefit" (Ivanov, 2009). After all, scientists consider the medical representative as a "basic figure of the pharmaceutical market" (Budarina, 2008), "a key staff engaged in promoting their company's products; a key component of the company's marketing strategy" (Alshakka, anoth, 2010), "the basis of marketing in the pharmaceutical industry" (Nersesian, anoth, 2015). According to our definition, obtained from the results of the study, the

"medical representative" is a specialist whose professional responsibilities include a number of functions for the implementation of the company's policy on the promotion of medications (prescription and over-the-counter) and medical products in the pharmaceutical market (Bilousova, 2021).

On the pharmaceutical market of Ukraine, the total number of medical representatives who are permanently employed by pharmaceutical companies or leased by outsourcing companies is about 10 thousand people; 60% among them have higher pharmaceutical education, 40% – higher medical education (Zhadko, anoth, 2014). Despite the economic crisis and the impact on the development of the pharmaceutical market of Ukraine COVID-19, the number of medical representatives of domestic pharmaceutical companies is constantly growing. At the same time, the process of their professional training in Ukraine is not regulated by the state and remains studied insufficiently in the theory and practice of professional pedagogy. It should be noted that this profession is not included in the National Classification of Occupations, and domestic associations of pharmaceutical manufacturers and doctors are left out of the issue of training of medical representatives.

Sources. The scientific basis for solving the problem of becoming a "medical representative" in Ukraine was the scientific work of L. Wales, who highlighted the evolution of the profession, B. Mintz, who developed a training course for the profession of medical representatives. Features of professional activity of medical representatives are covered in scientific publications of T. Budarina, O. Gatsura, N. Ihnatenko, L. Kaidalova, O. Kuhar, D. Sai, etc., who contextually consider the issues of professional competence of medical representatives; in the works of S. Paukov, J. Reidy, D. Semenenko, Yu. Chertkov the practical experience of conducting trainings for medical marketing specialists is presented.

However, noting the undeniable significance of these studies, we note that the problem of becoming a "medical representative" in the pharmaceutical market of Ukraine has not found comprehensive coverage, despite its relevance to the theory and practice of vocational education (Bilousova, 2020).

The purpose of the article is to describe the peculiarities of the development of professional training of these specialists in Ukraine on the basis of studying the history of formation and development of the "medical representative" profession.

Methods. For the study of scientific sources, the general scientific methods (analysis, synthesis, comparison, generalization) were used. Among the specific scientific methods we chose a comparative-historical analysis in order to identify the peculiarities of the formation of the profession and the development of professional training of medical representatives in Ukraine.

Results and discussion. The study of scientific historical literature showed that informing doctors about the introduction of a pharmaceutical product on the consumer market of Ukraine and presentation of medicine have been carried out since the Middle Ages, even then the medical business had a reference on treatment and medications and their use. Domestic scientists in their scientific works note that in Ukraine the attempt to develop and implement information and advertising support for sellers and consumers of drugs was carried out in the first half of the XXth century. This is indicated by the creation of a special network of offices of pharmaceutical information, in which pharmacists-informants worked in cooperation with chief physicians (Beniukh, 1999; Pharmacy of the Soviet Era, 2019; Ponomarenko, anoth, 2007; Siatynia, 2002). Another fact is reflected in the publication of L. Novikova (2011), which deals with the position of a pharmacist-informant in Soviet inter-pharmacy drugstores, that was entrusted with the function of informing doctors about the availability of medications. These responsibilities are currently performed by medical representatives. In another source we find that the pharmacist-informant is "a position in a pharmacy, very close to the position of a clinical pharmacologist", whose basic education is medical and he should be responsible for a number of pharmacy activities: to form a pharmacy range, to inform pharmacy workers, to study the market of medicines, medical equipment, pharmaceutical products, work with doctors of the nearest medical institutions; to be engaged in questions of advertising in the pharmaceutical organization, interaction with medical representatives, the control of registration of a trade establishment of a drugstore; organize the activities of the reference and organizational center and work with information about medications (pharmacological aspects), which requires a thorough knowledge of general and clinical pharmacology and pharmacotherapy (Zorina, Shutova and Kharchenko, 2010).

The IVth Congress of Pharmacists of Ukraine, which took place on October 23-25, 1984 in Zaporizhia, is of significant scientific interest for our

research. At that time, attention was focused on the need to improve the relationship between "doctor-patient-pharmacist (druggist)" and to prepare for this communication future specialists – pharmaceutical personnel who are to undergo internships in Ukraine and abroad. The importance of organizational and economic research, their social effect (Soviet-Era Pharmacy, 2019), which, in our opinion, should be a multifaceted (multirole) activity of a medical representative, was emphasized.

Thus, the historical genesis of the problem of information in the field of pharmacy indicates its relevance, but one should bear in mind that the beginning of this issue came with the existence of a centralized state health care system in Ukraine, when the wholesale network in the field of medicines and medical institutions exclusively to the state. Accordingly, management was carried out on a centralized basis, focused on the supply of medications in the country as a whole and regions, in particular, in a clearly defined amount, supported by the uniform wholesale and retail prices and in accordance with strict regulations of pharmacies. The purchase of imported medications was also carried out centrally. It is worth noting that characterizing this period both scientists and practitioners are not fully aware of content of the medical representative work. This conclusion made it possible for some researchers (Zorina, anoth, 2010) to compare the functions of a medical representative with the functions of a clinical pharmacologist. As for the latter, its functionality really includes: providing information about new medications and comparing them with well-known domestic and foreign drugs; providing the patient (according to the WHO recommendations, any person who asked for help because of any health problems, is a patient) with quality information and counseling when dispensing over-the-counter medications and especially when prescribing prescription drugs. (Verkhovna Rada of Ukraine. Legislation, 2002). However, the activities of a clinical pharmacologist are limited to pharmacies.

With the abolition of the Soviet system of government, pharmacies gained the right to purchase medicines on their own, while foreign pharmaceutical companies gained direct access to the domestic pharmaceutical market. At the beginning of the formation of the national pharmaceutical market, the most winning positions were occupied by Eastern European pharmaceutical companies – Gedeon Richter, Lek D.D., KRKA, Egis and others. This is due to the developed economic ties within the Council for Mutual Economic Assistance. Their products are widely known in Ukraine to both doctors and consumers. The product portfolio of these manufacturers is almost entirely formed of branded generics, which makes the prices of medicines affordable – they are lower than innovative drugs. Manufacturers from Southeast Asia, including India (Dr. Reddy's Laboratories and others), found themselves in the same situation. They also adapted quite quickly to Ukrainian conditions. Over time, domestic consumers became more critical to their medications, with Western companies being preferred increasingly, despite the fact that most medications produced in Asia entered the national pharmaceutical market in compliance with all international standards and registration in Ukraine. Thus, the management of these companies faced the task: to increase the level of training of medical representatives and develop their professional competence through the involvement of training companies. After all, it is the medical representatives who are the "face and voice of the pharmaceutical company" and attract the audience's attention to information in personal communication much better than they do with the use of advertising, direct mail or other informational influence. T. Budarina notes that medical representatives are specialists of a much higher level than sales representatives who trade in consumer goods. The efficiency of work depends directly on the level of their medical and pharmaceutical qualifications (Budarina, 2008). Thus, the informational, presentation and educational functions of bringing branded generics to the domestic pharmaceutical market were performed by medical representatives. Researchers in the pharmaceutical industry note that in the late 1990's, the existence of the original medications and their generics was known mainly to specialists aged 33-45 and consumers with higher education. The competent policy of generic manufacturers has led to the perception of patients of their drugs as a reference among synonyms of the same non-proprietary name. Original drugs were perceived by consumers as copies or analogues of drugs, and their trade names became popular in the Ukrainian pharmaceutical market (Sukhova, 2009).

For almost all leading manufacturers of pharmaceutical products (Sanofi-Aventis, Pfizer, Novartis, GlaxoSmithKline and others), the most common form of presence in Ukraine is accredited offices with the ability to organize direct sales. The marketing technologies that are widely used in foreign countries were brought to the Ukrainian pharmaceutical market. These technologies are primarily aimed at promoting medications. Their tasks are the following:

fixation in the minds of specialists and the end users of the exclusive trade offer of the medications; formation of packing recognition or trademarks; achieving the appointment of specialists of the advertised drug. Equally important is the creation of a corporate image of the company and the neutralization of advertising of competing medications. The expansion of the range of medications designed to meet the same needs has led to the transformation of the pharmaceutical industry from the seller's market to the buyer's market. In these circumstances, it was not enough to register a new medication – the company had to convey information about its properties and competitive advantages to the end or intermediate consumer, which in fact is a doctor (Sukhova, 2009). With the appearance of the foreign companies on the domestic pharmaceutical market in early 90's of the last century, the institute of medical representatives began to form as a marketing strategy, which began to be used by Ukrainian companies. Researcher T. Sukhova (2009) notes that the activities of medical representatives around the world are recognized as the most costly mechanism for promoting medications, but in Ukraine, this marketing strategy has become very popular and effective. Currently, it is difficult to find the companies that do not use this marketing technique (Sukhova, 2009). A sufficiently high level of salary of a medical representative allows companies to hire certified doctors and pharmacists for this work. However, the relevant segment of the labor market is not yet fully formed, due to the lack of a system of professional training.

At that time, the main task of the medical representative was to establish and develop links between pharmaceutical companies and health professionals in order to increase sales of medicines. At these positions were employed mostly doctors, who, en masse, went to a new profession for them, as they were able to have a professional dialogue with doctors of medical institutions and clinics, which was seen in their advantage. However, the intensification of competition between the domestic and foreign manufacturers due to market position and the intensification of distributors in order to promote medications, gradually led to a sharp increase in the number of medical representatives, especially of the so-called "field" employees in the regions (those who work directly with hospitals and pharmacies in a certain territory), resulting in a shortage of doctors willing to work in this capacity. According to researchers, the main resource for recruiting medical professionals in practical medicine in the middle of the first decade of the XXIst century was exhausted, and therefore in conditions of staff shortages, companies were forced to hire specialists and pharmacists – biologists, vets, psychologists and others.

I. Shyrokova (2009) notes that the motives of those doctors and pharmacists, who were ready to work as a medical representative, have gradually changed. If initially the main motive of doctors when changing the type of professional activity was a simple desire to increase wages, then, as the research shows, an interest of being employed in the pharmaceutical business is becoming much more evident. As for the pharmacists who applied for the position of medical representative, they had other reasons, including: fatigue from working in a pharmacy, its routine, lack of prospects for serious development and career growth. Of course, it is difficult to become a product-manager or a regional manager if you do not go through the "field" school, "not knowing the specifics of the work of a medical representative as the first link in the promotion of medications" (Shyrokova, 2009). In this case, the career of a modern medical representative can develop in three areas:

- stay in the "sale" (Medical Representative – Key Account Manager – Government Relation Manager; Medical Representative – Regional Manager – Area Manager – National Sales Manager);
- go to "marketing" (Medical Representative – Junior Product Manager – Product Manager – Group Product Manager – Marketing Manager);
- to develop in the "medical department" (this path is mainly for doctors): Medical Representative – Medical Adviser – CRA – CRM – Medical Manager) (Geprüfte /r Pharmareferent / in / IHK Gießen-Friedberg, 2020).

At the same time, the marketing technologies influence formation of the consumer demand. Today, the communication marketing of the pharmaceutical community is considered to be ideal and its task is to focus public attention on the problem of maintaining and increasing health. T. Sukhova (2009) believes that the result of such a policy should consist in changes within the pharmaceutical market in terms of increasing demand for medications used to treat the most serious diseases, if to consider the epidemiology (Sukhova, 2009).

Therefore, it can be expected that the requirements for medical representatives will change, the training of which is currently not standardized and is carried out by the companies themselves. Despite the 30-year development of the professional group of medical representatives in Ukraine, in the national Classifier of Professions DK 003: 2010 (hereinafter – the Classifier of Professions) (Verkhovna Rada of

Ukraine. Legislation, 2010) there is still no title of "medical representative" or its equivalent, which would reflect the essence of the activities of these specialists, and no requirements have been formed at the national level. Accordingly, there are no accredited programs for the training of medical representatives in higher medical education, postgraduate education and non-formal lifelong learning. Their training is carried out only by pharmaceutical companies and representative offices, but, unlike the world practice, associations of pharmaceutical (medical) workers – medical representatives in Ukraine stay away from professional training.

The prestige of the profession of medical representative (that has different titles, such as: market research and public opinion consultant, medical product development specialist, marketing consultant, medical advertising representative, medical representative – Medical Representative) in the labor market is quite high and competitive, and, therefore, requires the formation of various competencies at the time of submission of the resume. In Ukraine, the functions of a consultant on market research and public opinion research are performed by marketers (speciality 075, the branch of knowledge 07 – Management and Administration), but it is an administrative position and is employed office workers. Such specialists are trained at the National University of Pharmacy, majoring in marketing. Professionals in this speciality can work in primary positions, i.e.: sales specialist, marketing consultant, commodity market research analyst, public relations manager, etc. (Verkhovna Rada of Ukraine. Legislation, 2015).

N. Mozhova (2017), revealing the peculiarities of the work of medical representatives in the domestic pharmaceutical market, notes that, depending on the actual responsibilities of these specialists, companies must determine which name of positions they will use from the best options: "Marketing" (code in the Classifier of professions – 3439), "Specialist in Methods of Expanding the Market (Marketer)" (code – 2419.2), "Manager of Advertising" (code – 1476.1), "Advertiser" (code – 2419.2), etc. She notes: "It is important to make sure that a similar job title is specified in the relevant documents: employment contract, job description, employment order, employment record book, etc." (Mozhova, 2017).

However, it is hardly possible to agree with the point of view of a well-known lawyer in the pharmaceutical field that this list is optimal. After all, in the practical dimension, the responsibilities of a medical representative differ significantly from those defined by the proposed positions. The practice of working as a medical representative in various companies (domestic and German) also indicates the use of other job titles, namely: medical representative, regional representative, market research and public opinion consultant, medical product development specialist, marketing consultant, representative of advertising of medicines, medical representative – Medical Representative. Now (since February 2019) companies have the opportunity to use the general provisions of the Classifier of Professions on the "formation of new titles of professions and positions in connection with the development of new economic activities and technologies" (Verkhovna Rada of Ukraine. Legislation, 2010). This opportunity is provided by the Classification of Occupations with changes approved by the order of the Ministry of Economic Development and Trade of Ukraine dated February 15, 2019 # 259. The International Standard Classification of Occupations (ISCO 88: International Standard Classification of Occupations / ILO, Geneva) was approved to be the basis according to the recommendations of the International Conference on Labor Statistics to translate national data into a system that facilitates the international exchange of professional information (ISCO 88, 2020). Thus, the implementation of European legislation is being implemented in domestic medical education gradually.

In pharmaceutical companies, these specialists are referred to section 3 (Specialists) according to the Classifier of Professions with changes approved by the order of the Ministry of Economic Development and Trade of Ukraine dated August 18, 2020 № 1574 (https://hrliga.com/docs/KP-2010_r3z.htm). The preamble provides a brief description of the occupations contained in this section. It lists professions that require knowledge in one or more fields of science, technology and humanities. Professional tasks consist in performing special work related to the application of the provisions and the use of methods of relevant sciences. This section includes professions that meet the qualification of a diploma or other relevant document: junior specialist; bachelor's degree; specialist undergoing postgraduate training (traineeship, internship, residency, etc.); specialist (for work on the management of multifunctional technical complexes or their maintenance). Thus, in terms of its complexity and level of responsibility, the profession of medical representative does not correspond to any of the mentioned above professional groups. In terms of complexity and level of responsibility, it rather belongs to section 2 (Professionals), because according to the requirements for medical representatives, they must

have at least a diploma of complete higher education, which corresponds to the level of specialist or master. Currently, this professional group includes medical representatives with a diploma of the degree of Candidate of Sciences / Doctor of Philosophy. Of course, this affects the status of the profession of medical representative in Ukrainian society.

Conclusions. The formation of the profession of medical representative in Ukraine began in the 90's of the last century and is associated with the development of the pharmaceutical market of medicines and medications and the formation of a professional group of medical representatives. The presence of medical representatives in the national professional field at the present stage of socio-economic development is not legitimized: this profession is not listed in the National Classifier so the professional training of these specialists has no legal support and is carried out directly in pharmaceutical companies without licensed educational programs. The effectiveness of medical representatives depends on the level of their professionalism and personal qualities, relationships with doctors, heads of medical institutions, distribution companies, pharmacy chains, individual pharmacies, etc. Accordingly, there is a need to solve the problem of their training through development and implementation of educational and professional programs at the second (master's) level of higher education and advanced training in the system of postgraduate education. Therefore, we consider that the prospect of further scientific research consists in the study of the system potential of domestic postgraduate education for internships and specialization of medical representatives.

List of references

Бенюх, Н. Ф., 1999. *Історія фармації Галичини (XIII–XX ст.)* : *навч. посіб*. Львів, 1999.

Білоусова, Н., 2020. Організаційні принципи професійної підготовки медичних представників у Федеративній Республіці Німеччини. *Молодь і ринок*, 3-4, с.181-187.

Білоусова, Н.А., 2021. *Професійна підготовка медичних представників фармацевтичних компаній у Федеративній республіці Німеччини*: автореферат. Кандидат наук. Київський національний авіаційний університет.

Бударина, Т. Н., 2008. *Профессиональная роль медицинского представителя фармацевтической компании*: автореферат. Кандидат наук. Волгоградский государственный медицинский университет.

Верховна Рада України. Законодавство України, 2002. *Довідник кваліфікаційних характеристик професій працівників: Вип. 78 «Охорона здоров'я».* [online] Доступно: https://zakon.rada.gov.ua/rada/show/va117282-02 [Дата звернення 16 Грудень 2020].

Верховна Рада України. Законодавство України, 2010. *Класифікатор професій ДК 003:2010 із змінами. Загальні положення. Бухгалтер. com.ua* : [online] Доступно: https://buhgalter.com.ua/dovidnik/klasifikator-profesiy/zagalni-polozhennya/ [Дата звернення 16 Грудень 2020].

Верховна Рада України. Законодавство України, 2010. *Національний класифікатор України. Класифікатор професій ДК 003:2010* [online] Доступно: https://zakon.rada.gov.ua/rada/show/va327609-10#Text [Дата звернення 16 Грудень 2020].

Верховна Рада України. Законодавство України, 2015. *Про затвердження переліку галузей знань і спеціальностей, за якими здійснюється підготовка здобувачів вищої освіти : Постанова Кабінету Міністрів від 29 квіт. 2015 р. № 2661*. [online] Доступно: http://zakon3.rada.gov.ua/laws/show/266−2015−%D0%BF [Дата звернення 16 Грудень 2020].

Жадько, С. В., Бабічева, Г. С. та Фартушна, С. Г., 2014. Оцінка мотиваційних факторів у роботі медичних (фармацевтичних) представників. В: *Соціальна фармація: стан, проблеми та перспективи: міжнар. наук.-практ. інтернет-конф*. Харків, Україна, 17-20 Березень 2014. Харків: Вид-во НФаУ.

Зорина, О., Шитова, Т. и Харченко, Г., 2010. Возможности профессионального роста провизора: многоплановость фармацевтических знаний. *Провизор*. 2010, [online] 3. Доступно: http://www.provisor.com.ua/archive/2010/N03/profrp_0310.php [Дата звернення 16 Грудень 2020].

Иванов, Н. В., 2009. *Социальные потребности и перспективы молодых специалистов на отечественном рынке лекарств*: автореферат. Кандидат наук. Волгоградский государственный медицинский университет.

Історія створення ліків і розвитку хіміко-фармацевтичної промисловості. *Фармація радянського часу*, 2019 [online] Доступно: http://surl.li/xfqh [Дата звернення 16 Грудень 2020].

Мозгова, Н., 2017 Медичні представники: правовий статус та особливості роботи. *Аптека online*, 30 Січень, 3. [online] Доступно: http://www.apteka.ua/article/394120.

Нерсесян, М. М., Михайлова, С. А. и Гацан, В. В., 2015. Результаты социологического опроса врачей об информационной работе медицинских представителей фармацевтических компаний региона Кавказских минеральных вод. *Современные проблемы науки и образования*, [online] 3. Доступно: https://www.science-education.ru/pdf/2015/3/627.pdf [Дата звернення 16 Грудень 2020].

Новикова, Л., 2019. Медицинский представитель – профессия настоящего и будущего. *HR-Portal* [online] Доступно: http://surl.li/xfqs [Дата звернення 16 Грудень 2020].

Пономаренко, М. С., Сятиня, М. Л., Бабський, А. А. та ін., 2007. Історичні етапи розвитку інформаційної роботи та презентації лікарських засобів і сучасні підходи щодо введення фармацевтичного продукту на споживчий ринок України. Дотримання етичних засад промоції та реклами. Повідомл. І. *Фармацевтичний журнал*, 3, с. 15-23.

Пономаренко, М. С., Сятиня, М. Л., Бабський, А. А. та ін., 2007. Історичні етапи розвитку інформаційної роботи та презентації лікарських засобів і сучасні підходи щодо введення фармацевтичного продукту на споживчий ринок України. Дотримання етичних засад промоції та реклами. Повідомл. ІІ. *Фармацевтичний журнал*, 4, с. 10-16.

Сухова, Т. Н., 2009. *Взаимоотношения врачей и представителей фармацевтического бизнеса в современном обществе*. Кандидат наук. Волгоградский научный центр Российской академии медицинских наук и администрации Волгоградской области.

Сятиня, М. Л. *Історія фармації: навч. посіб*. Львів, 2002.

Широкова И., 2009. Фармацевтические кадры – всегда в цене. *Ремедиум : журнал о рынке лекарств и медицинской технике*, 11, с. 34-38.

Alshakka, M.A, Mohamed Izham M.I, Mohamed Hassali and Subish P., 2010. Promoting the role of Malaysian non-governmental organizations in the safety of medicines. T*he Internet Journal of Third World Medicine*, [online] 9 (1). Available at: http://surl.li/xfse [Accessed 16 December 2020].

Geprüfte(r) Pharmareferent/in / IHK Gießen-Friedberg (2020). [online] Available at: http://surl.li/xfsh [Accessed 18 December 2020].

International Standard Classification of Occupations, *ISCO-08*, [online] 1. Available at: http://surl.li/xfsi [Accessed 10 August 2012].

Translated & Transliterated

Beniukh, N. F., 1999. *Istoriia farmatsii Halychyny (XIII–XIX st.) : navch. posib. [History of Pharmacy in Galicia (XIIIth-XXth centuries): textbook*]. Lviv, 1999, [in Ukrainian].

Bilousova, N., 2020. Orhanizatsiini pryntsypy profesiinoi pidhotovky medychnykh predstavnykiv u Federatyvnii Respublitsi Nimechchyny [Organizational Principles of Professional Training of Medical Representatives in the Federal Republic of Germany]. *Molod i rynok* [*Youth and the Market*], 3-4, s.181-187, [in Ukrainian].

Bilousova, N.A., 2021. *Profesiina pidhotovka medychnykh predstavnykiv farmatsevtychnykh kompanii u Federatyvnii respublitsi Nimechchyny: avtoreferat [Professional Training of Medical Representatives of Pharmaceutical Companies in the Federal Republic of Germany: abstract]*. Kandydat nauk. Kyivskyi natsionalnyi aviatsiinyi universytet [Kyiv National Aviation University], [in Ukrainian].

Budarina, T. N., 2008. *Professionalnaya rol meditsinskogo predstavitelya farmatsevticheskoy kompanii: avtoreferat* [*The Professional Role of a Medical Representative of a Pharmaceutical Company: abstract*]. Kandidat nauk. Volgogradskiy gosudarstvennyiy meditsinskiy universitet [Volgograd State Medical University], [in Russian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2002. *Dovidnyk kvalifikatsiinykh kharakterystyk profesii pratsivnykiv: Vyp. 78 «Okhorona zdorovia» [Guide on Qualification Characteristics of Occupations: Vol. 78 Health]*. [online] Dostupno: https://zakon.rada.gov.ua/rada/show/va117282-02. [Data zvernennia 16 Hruden 2020], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2010a. *Klasyfikator profesii DK 003:2010 iz zminamy. Zahalni polozhennia. Bukhhalter.*

com.ua [Classifier of Professions DK 003: 2010 with changes. Terms. *Accountant.com.ua]*. [online] Dostupno: https://buhgalter.com.ua/dovidnik/klasifikator-profesiy/zagalni-polozhennya/. [Data zvernennia 16 Hruden 2020], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2010b. *Natsionalnyi klasyfikator Ukrainy. Klasyfikator profesii DK 003:2010 [National Classifier of Ukraine. Classifier of Professions DK 003: 2010]* [online] Dostupno: https://zakon.rada.gov.ua/rada/show/va327609-10#Text. [Data zvernennia 16 Hruden 2020], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2015. *Pro zatverdzhennia pereliku haluzei znan i spetsialnostei, za yakymy zdiisniuietsia pidhotovka zdobuvachiv vyshchoi osvity : Postanova Kabinetu Ministriv vid 29 kvit. 2015 r. № 2661*. *[On approval of the list of branches of knowledge and specialties in which training of higher education seekers is carried out: Resolution of the Cabinet of Ministers of April 29th. 2015 № 2661*] [online] Dostupno: http://zakon3.rada.gov.ua/laws/show/266−2015−%D0%BF. [Data zvernennia 16 Hruden 2020], [in Ukrainian].

Zhadko, S.V., Babicheva, H.S. ta Fartushna, S.H., 2014. Otsinka motyvatsiinykh faktoriv u roboti medychnykh (farmatsevtychnykh) predstavnykiv [Assessment of Motivational Factors in the Work of Medical (Pharmaceutical) Representatives]. V: *Sotsialna farmatsiia: stan, problemy ta perspektyvy [Social Pharmacy: Status, Problems and Prospects: International. scientific-practical Internet conference*. Kharkiv, Ukraine, March, 17-20th, 2014]: mizhnar. nauk.-prakt. internet-konf. Kharkiv, Ukraina, 17-20 Berezen 2014. Kharkiv: Vyd-vo NFaU, [in Ukrainian].

Zorina, O., Shitova, T. i Harchenko, G., 2010. Vozmozhnosti professionalnogo rosta provizora: mnogoplanovost farmatsevticheskih znaniy [Opportunities for professional growth of a pharmacist: the diversity of pharmaceutical knowledge]. *Provizor* [*Pharmacist*]. 2010, [online] 3. Dostupno: http://www.provisor.com.ua/archive/2010/N03/profrp_0310.php [Data zvernennya 16 Gruden 2020], [in Russian].

Ivanov, N. V., 2009. *Sotsialnyie potrebnosti i perspektivyi molodyih spetsialistov na otechestvennom ryinke lekarstv: avtoreferat [Social Needs and Prospects of Young Professionals in the Domestic Medications Market: abstract]*. Kandidat nauk. Volgogradskiy gosudarstvennyiy meditsinskiy universitet [Volgograd State Medical University].

Istoriia stvorennia likiv i rozvytku khimiko-farmatsevtychnoi promyslovosti [History of the Creation of Medications and the Development of the Chemical and Pharmaceutical Industry]. *Farmatsiia radianskoho chasu [Pharmacy of the Soviet era*], 2019 [online] Dostupno: http://surl.li/xfqh. [Data zvernennia 16 Hruden 2020], [in Ukrainian].

Mozghova, N., 2017 Medychni predstavnyky: pravovyi status ta osoblyvosti roboty [Medical representatives: legal status and features of work]. *Apteka online* [*Pharmacy Online*], 30 Sichen, 3. [online] Dostupno: http://www.apteka.ua/article/394120, [in Ukrainian].

Nersesyan, M. M., Mihaylova, S. A. i Gatsan, V. V., 2015. Rezultatyi sotsiologicheskogo oprosa vrachey ob informatsionnoy rabote meditsinskih predstaviteley farmatsevticheskih kompaniy regiona Kavkazskih mineralnyih vod. [Results of a sociological survey of doctors about the information work of medical representatives of pharmaceutical companies in the Caucasian Mineral Waters region]. *Sovremennyie problemyi nauki i obrazovaniya [Modern Problems of Science and Education*], [online] 3. Dostupno: https://www.science-education.ru/pdf/2015/3/627.pdf [Data zvernennya 16 Gruden 2020], [in Russian].

Novikova, L., 2019. Meditsinskiy predstavitel – professiya nastoyaschego i buduschego [Medical Representative-Profession of the Present and the Future]. *HR-Portal* [online] Dostupno: http://surl.li/xfqs. [Data zvernennya 16 Gruden 2020], [in Russian].

Ponomarenko, M. S., Siatynia, M. L., Babskyi, A. A. ta in., 2007. Istorychni etapy rozvytku informatsiinoi roboty ta prezentatsii likarskykh zasobiv i suchasni pidkhody shchodo vvedennia farmatsevtychnoho produktu na spozhyvchyi rynok Ukrainy. Dotrymannia etychnykh zasad promotsii ta reklamy. Povidoml. I. [Historical Stages of Development of Information Work and Presentation of Medicines and Modern Approaches to the Introduction of a Pharmaceutical Product on the Consumer Market of Ukraine. Adherence to the Ethical Principles of Promotion and Advertising. Message I*]. Farmatsevtychnyi zhurnal [Pharmaceutical Journal*], 3, s.15-23, [in Ukrainian].

Ponomarenko, M. S., Siatynia, M. L., Babskyi, A. A. ta in., 2007. Istorychni etapy rozvytku informatsiinoi roboty ta prezentatsii likarskykh zasobiv i suchasni pidkhody shchodo vvedennia farmatsevtychnoho produktu na spozhyvchyi rynok Ukrainy. Dotrymannia etychnykh zasad promotsii ta reklamy. Povidoml. II. [Historical Stages of Development of Information Work and Presentation of Medicines and Modern Approaches to the Introduction of a Pharmaceutical Product on the Consumer Market of Ukraine. Adherence to the Ethical Principles of Promotion and Advertising. Message II]. *Farmatsevtychnyi zhurnal [Pharmaceutical Journal*], 4, s. 10-16, [in Ukrainian].

Suhova, T. N., 2009. *Vzaimootnosheniya vrachey i predstaviteley farmatsevticheskogo biznesa v sovremennom obschestve [The Relationship Between Doctors and Representatives of the Pharmaceutical Business in Modern Society]*. Kandidat nauk. Volgogradskiy nauchnyiy tsentr Rossiyskoy akademii meditsinskih nauk i administratsii Volgogradskoy oblasti [Volgograd Scientific Center of the Russian Academy of Medical Sciences and Administration of the Volgograd Region], [in Russian].

Siatynia, M. L. *Istoriia farmatsii: navch. posib*. [*History of Pharmacy: textbook*]. Lviv, 2002, [in Ukrainian].

Shirokova I., 2009. Farmatsevticheskie kadryi – vsegda v tsene [Pharmaceutical Personnel is Always Valuable]. *Remedium : zhurnal o ryinke lekarstv i meditsinskoy tehnike* [*Remedium: a Magazine about the Medications Market and Medical Technology*], 11, s. 34-38, [in Russian].

Alshakka, M.A, Mohamed Izham M.I, Mohamed Hassali and Subish P., 2010. Promoting the role of Malaysian non-governmental organizations in the safety of medicines. *The Internet Journal of Third World Medicine,* [online] 9 (1). Available at: http://surl.li/xfse [Accessed 16 December 2020], [in English].

Geprüfte(r) Pharmareferent/in / IHK Gießen-Friedberg (2020). [online] Available at: http://surl.li/xfsh [Accessed 18 December 2020], [in German].

International Standard Classification of Occupations, *ISCO-08,* [online] 1. Available at: http://surl.li/xfsi [Accessed 10 August 2012], [in English].

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ІСТОРИЧНИЙ ГЕНЕЗИС СТАНОВЛЕННЯ І РОЗВИТКУ ПРОФЕСІЇ «МЕДИЧНИЙ ПРЕДСТАВНИК» В УКРАЇНІ

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Реферат:

Актуальність дослідження зумовлена необхідністю врегулювання на державному рівні професійної підготовки медичних представників фармацевтичних компаній як ключових фігур вітчизняного фармацевтичного ринку у системі формальної, неформальної та інформальної освіти.

Мета: на основі вивчення історії становлення і розвитку професії «медичний представник» охарактеризувати особливості розвитку професійної підготовки даних фахівців в Україні.

Методи: загальнонаукові (аналіз, синтез, порівняння, узагальнення) – для вивчення наукових джерел; конкретно-науковий (порівняльно-історичний) – для виявлення особливостей становлення професії медичного представника на українському фармацевтичному ринку;

Результати: досліджено історичний генезис проблеми інформування в галузі фармації; обґрунтовано умови, що сприяли розвитку в Україні професії «медичний представник»; охарактеризовано професійні функції медичних представників; визначено особливості розвитку їх професійної підготовки в системі формальної, неформальної та інформальної освіти України.

Висновки: розвиток професії «медичний представник» розпочався у 90-х роках минулого століття і пов'язаний із становленням фармацевтичного ринку лікарських засобів і препаратів; професійними функціями медичних представників є інформаційна, презентаційна і просвітницька; ці функції спрямовані на виведення на вітчизняний фармацевтичний ринок брендованих дженериків; в Україні підготовка медичних представників здійснюється лише фармацевтичними компаніями і представництвами; на відміну від світової практики, вітчизняні асоціації фармацевтичних (медичних) працівників залишаються осторонь від професійної підготовки медичних представників; професія «медичний представник» в Україні дотепер нелегітимізована; нагальною є потреба вдосконалення професійної підготовки медичних представників фармацевтичних компаній через розроблення і впровадження освітньо-професійних програм на другому (магістерському) рівні вищої освіти та підвищення кваліфікації в системі післядипломної освіти.

Ключові слова: *безперервна професійна освіта, фармацевтична освіта, післядипломна медична освіта, медичний представник, фармацевтичні компанії.*

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PEDAGOGICAL TECHNOLOGY OF ENTREPRENEURIAL COMPETENCE DEVELOPMENT OF FUTURE QUALIFIED WORKERS IN THE PROJECT ACTIVITY PROCESS

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Abstract.

Relevance: The new quality of vocational education is focused not so much on the assimilation of a certain amount of knowledge and skills by students, but on the development of personality. Institutions of vocational (professional and technical) education should form key competencies, i.e. professional competencies. The issue of development of entrepreneurial competence of young people is especially acute. This is possible through the use of modern educational technologies.

Purpose: to characterize the pedagogical technology of development of entrepreneurial competence of future skilled workers in the process of project activity, to highlight the criteria for the effectiveness of its implementation.

Methods: analysis of scientific literature, legislative and normative documents – to clarify current trends in the formation of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity; methods of analysis and synthesis – to formulate criteria and indicators of the effectiveness of the implementation of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the project activity process, data systematization, generalization of professional experience to develop theoretical and methodological approaches to determine the conditions for testing its effectiveness; comparative analysis, synthesis and methods of expert evaluation – to form requirements for experimental verification of the effectiveness of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity.

Results: criteria and indicators of effectiveness of the implementation of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity at the present stage of development of society are formulated.

Conclusions: the effectiveness of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the project activity process is experimentally tested; criteria and performance indicators are formulated – this, in turn, will allow to switch the organization of the educational process from "one-actor theater" to cooperation and productive project activities.

Keywords: *modernization of professional education, pedagogical technology, entrepreneurial competence, project activity, institutions of vocational (professional and technical) education, efficiency criteria.*

Introduction. The use of modern educational technologies in the practice of teaching is a prerequisite for intellectual, creative and moral development of young people. Modern technologies allow students to become more active participants in the educational process. They also help teachers to create new approaches, methods, models of teaching and education (Padalka and Nisimchuk, 1995). For example, a teacher may conduct an online survey at any stage of the lesson to determine the level of mastery of the material being studied. The learning process becomes more dynamic with the use of digital textbooks, when the student can use links to relevant materials or resources. Young people can seek answers to questions, form their active position, and then defend it (Alekseeva ta Sokhatska, 2020; Radkevych, 2019).

Pedagogical theory offers many learning technologies: differentiated-individual, problem-based, heuristic, visual, game, dialogue, information, health-preserving, etc. The choice of the teacher is made depending on the content of training, psychological features of students, didactic tasks and conditions of activity (Radkevych, Orlov, Bazyl and Radkevych, 2020). We offer for your consideration the pedagogical technology of development of entrepreneurial competence of future skilled workers in the process of project activity.

Sources of research. The problem of ordering and systematization of pedagogical technologies has been considered by such scientists as V. P. Bespalko, E. V. Rudensky, A. Ya. Savelyev, G. K. Selevko, V. A. Slastyonin, V. T. Fomenko, and others. Analysis of the training of future teachers based on the introduction of modern and innovative pedagogical technologies is found in the works of foreign and domestic teachers (Yu. K. Babansky, A. Disterweg, L. V. Zankov, J. A. Comenius, J. Locke, A. S. Makarenko, M. Montessori, J.-J. Rousseau, V. O. Sukhom-linsky, V. F. Shatalov and others), and attempts to classify existing pedagogical technologies have been made by G. K. Selevko, S. O. Sysoeva, O. M. Pekhota, D. V. Chernilevsky and others.

The article aims to characterize the pedagogical technology of development of entrepreneurial competence of future skilled workers in the process of project activity, to highlight the criteria for the effectiveness of its implementation.

Results and discussion. The concept of modernization of vocational education among the important goals states: the development of students' independence and ability to self-organization; willingness to cooperate, development of ability to creative activity. Its implementation requires specific pedagogical technologies. In our opinion, the pedagogical technology of development of entrepreneurial competence of future skilled workers in the process of project activity can be important, because it provides a system of step-by-step pedagogical actions on training, education and personal development, aimed at the use of forms, methods, techniques of project activity for the guaranteed development of future professionals' qualities, skills and abilities necessary to open and successfully run their own business. The goal is to form young people's entrepreneurial competence by means of project activity. The task is to create appropriate conditions that promote the activation of cognitive interest and independent acquisition of knowledge from various sources; formation of the ability to use knowledge in order to solve cognitive tasks; development of communication and research skills; active development of critical thinking; personal optimization of time costs, rational use of intellectual, physical and emotional resources, increasing productivity.

The content of technology is aimed at: the use of technological tools for the organization of project activity; creative disclosure of the student's personality in the process of project activity and independent work; combination of game forms and design-research work; creating conditions for a rational combination of cognitive, educational, research, creative activities, economic simulations and other activities important for opening and successful conducting by future skilled workers of own business.

The main idea is that students carry out with great enthusiasm only that project activity which they have chosen themselves; activity is not built in line with the subject. The result – students' mastery of the algorithm and the ability to perform project work contributes to the formation of cognitive interest, the development of entrepreneurial competence; ability to speak and defend their active position, independence and self-organization of educational activities; realization of creative potential in research, subject-productive and project activity (Yershova, 2018, p. 155).

Practical significance: increasing the efficiency of the educational process through the use of interactive teaching methods; filling the variable part of the curriculum with disciplines with innovative content and teaching methods; psychological and pedagogical diagnostic support of the educational process and personal development, which includes a set of socio-economic, psychological-pedagogical and medical-physiological

factors; formation of skills important for entrepreneurial activity (to assess the need for resources and plan their use in solving problems in professional activities; to work in a team; the ability to build communication based on goals and communication situations; to evaluate critically and rethink the accumulated experience) (own and someone else's), to reflect on professional and social activities, to solve problems in professional activities on the basis of analysis and synthesis, to offer organizational and managerial solutions and assess the conditions and consequences of decisions taken; to participate in the implementation of technological and product innovations; to plan and implement measures aimed at activity implementation; to analyze the competitive environment; to develop business plans for the creation and development of new organizations, business ideas; the assistance in organizing comprehensive training of future skilled workers for entrepreneurial activity in VET institutions (capable of building a strategy of personal and career development); the use of mechanisms for rapid response to rapid socio-economic, political, cultural transformations; ensuring the development of personality (memory, thinking, creative, communicative and organizational abilities; education of will, ability to manage own emotional states, integrate life experience).

The expected socio-economic effect: increasing the competitiveness of the worker in the conditions of development of small business; meeting the demands of the modern labor market for creative workers capable of self-employment; increasing the ability of graduates of VET institutions to cope with stress in business; accelerating the processes of digitalization of doing business (Osovska, 2003).

During the use of pedagogical technology in the educational process of developing entrepreneurial competence of future skilled workers in the process of project activities, students create a project, comprehend real processes, live specific problem (production) situations, participate in penetrating phenomena, constructing new processes, objects, etc. The teacher is a consultant, motivating and directing research, analytical, project, creative activities of the student. The student independently chooses an effective route for solving a subject, meta-subject, personal problem from many options, using a variety of sources of information, materials, forms, methods of project activities. It is extremely important to show young students their personal interest in the acquired knowledge, the development of entrepreneurial competence, which can and should be useful to them in professional life to build a trajectory of success. This requires a problem taken from real life, familiar and significant for the student. To solve it, the student needs to apply the acquired knowledge, new knowledge that has yet to be acquired in order to develop entrepreneurial competence.

The teacher can suggest sources of information, or can simply direct the opinion of young students in the right direction for independent search. But as a result, students must independently and jointly solve the problem, applying the necessary knowledge, sometimes from different fields, and get a real and tangible result. All work on the problem, therefore, acquires the contours of the project activity. During the project activity specially created problematic business situations contribute to the formation and development of the student's necessary system of knowledge, skills, key competencies, professional competencies (entrepreneurial), and provide a high level of development of learning and self-learning skills through the formation and development of special style of mental activity, creative business thinking. Problem-based business thinking develops creative activity and independence of students, opens opportunities for creative cooperation between teacher and student.

The advantages of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity are obvious. The use of technological tools for the organization of project activities allows to achieve significant changes in learning outcomes. Teachers have the opportunity to implement new models of organization of the educational process. Rationally and optimally organized group and collective activities can create wonders: to liberate the student's thinking; to develop the ability to cooperate, to work in team; to assess adequately and worthily the ability to put forward interesting non-traditional business ideas, their in-depth analysis. After such work, its participants with interest and desire will perform the functions of organizers, managers, activists, entrepreneurs.

During the implementation of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activities, a number of identified features that may complicate the process of achieving the result provided by technology should be taken into account:

- to involve young students systematically in independent work with new material, prepare them for self-education;
- it is not easy to successfully solve problems of an educational nature, especially those related to the assessment of personal and semantic growth of young students;
- problematic business situations can be applied only on such material, which allows ambiguous, sometimes alternative approaches, assessments, interpretations;
- problematic business situations can be applied only on the material of a high level of significance (methodological, general scientific, theoretical);
- this type of training is justified if the learners have the necessary starting level of knowledge, skills, abilities, key competencies, professional competencies;
- problematic business situations require much more time to use research methods (Petrenko, Kustrich and Homeniuk, 2015).

It is possible to talk about the content of the procedure for diagnosing the effectiveness of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity only after resolving the issue of performance criteria. In the general case, performance indicates the degree of correspondence between the results achieved and projected (set). Criteria for measuring the effectiveness of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity – an issue from which it is necessary to begin a scientific discussion on the diagnosis of innovative pedagogical technologies. Due to uncertainty of the criterion justification for diagnosing learning technologies, a number of teachers and employers have doubts and concerns about the effectiveness of innovative pedagogical technologies in terms of learning, development of key competencies, professional competencies (the issue of development of entrepreneurial competence is especially acute nowadays) defined by curricula and programs in a given period of time; they are wary of pedagogical innovations, showing in some places justified, but, unfortunately, often unnecessary "pedagogical conservatism".

The analysis of possible complicating factors has allowed us to formulate criteria for the effectiveness of the implementation of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity:
- technological culture of the teacher;
- availability of the teacher's own experience of using pedagogical technologies, in particular pedagogical technology of development of entrepreneurial competence of future skilled workers in the process of project activity;
- creative "refinement" and transformation of technology;
- creating a situation of success during the joint project activity of students and teacher in the implementation of technology;
- organic interconnection of technology components;
- possibilities of technology in actualization, self-development of young people and teacher;
- noticeable changes in the state of young people (in their motivation for project activity, knowledge, skills, emotions, etc.) in the implementation of certain pedagogical technology (Fomichev, 2014, pp. 32-34).

In order to experimentally test the effectiveness of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity, we find out what entrepreneurial competence is . M.V. Tkachenko (2018, p. 2-3) concretized the essence of the concept of "entrepreneurial competence of future professionals" as a "complex socio-economic and psychological-activity phenomenon, concretized by a dynamic set of values and worldviews, knowledge, skills, ways of working, experience, professionally significant qualities that holistically determine a person's preparedness for entrepreneurial activity within the implementation of professional and functional tasks, in particular the ability to self-employment (starting own business), the ability to analyze market opportunities of the enterprise, master leading economic roles, objectively assess individual personal abilities to entrepreneurship. The structure of entrepreneurial competence of future professionals includes interrelated components: motivational and valuable; knowledge and content; personal-reflexive; operational and activity".

The experimental base has been the following state educaional institutions: "Higher Vocational School № 11 Khmelnytsky", Vinnytsia Center for Vocational Education of Processing Industry","Lviv Higher Vocational Art School","Odessa Higher Vocational School of Trade and Food Technology","Regional Center for Vocational Education of Garment

Production and Services of Kharkiv Region","Cherkasy Professional Road Lyceum", Melitopol Multidisciplinary Center of Vocational Education and Training, Educational and Scientific Center of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine, Art College of Art Modeling and Design.

Analysis of the results of experimental pedagogical research on the use of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the process of project activity can be presented in the tables 1 – 4.

Table 1

Levels of formation of motivational-valuable component of students of VET institutions during the ascertaining and forming experiment (%)

Scales	Ascertaining experiment			Forming experiment		
	high	*medium*	*low*	*high*	*medium*	*low*
Positive attitude to vocational education as the beginning of the implementation of educational and professional trajectory in the field of entrepreneurship	38	35	27	51	37	12
The predominance in the structure of motives for the pursuit of entrepreneurial success	38	47	15	44	51	5
Correspondence of career orientations to entrepreneurial activity as an alternative direction of professional career	33	47	20	37	48	15
Attitude to entrepreneurial activity as personally and socially significant	36	44	20	38	47	15
Shifting the emphasis in the process of creating a business project to the imagination, creating constructive images and their implementation	37	36	27	50	36	14
Organization of economic training practice in really acting commercial firms	36	42	22	37	48	15

Table 2

Levels of formation of knowledge and content component of students of VET institutions during the ascertaining and forming experiment (%)

Scales	Ascertaining experiment			Forming experiment		
	high	*medium*	*low*	*high*	*medium*	*low*
Awareness of the period of receiving vocational education as a basic stage of a career in entrepreneurship	26	39	35	30	47	23
Knowledge of varied career paths	33	41	26	44	45	11
Requirements of the business environment to the knowledge, skills, general and professional competencies of the entrepreneur, the qualities of his personality	37	45	18	43	40	17
Teacher's readiness to use the project method in preparing students for entrepreneurship	36	45	19	42	41	17
Success of mastering the necessary knowledge and skills, practical experience in the process of implementing the developed project in the field of entrepreneurship	37	46	17	42	42	16

Table 3

Levels of formation of operational and activity component of students of VET institutions during the ascertaining and forming experiment (%)

Scales	Ascertaining experiment			Forming experiment		
	high	*medium*	*low*	*high*	*medium*	*low*
Actions aimed at career planning in the field of entrepreneurship as an alternative educational and professional trajectory	28	41	31	32	48	20
Setting and solving educational and professional tasks in accordance with the requirements of entrepreneurial activity	38	46	16	44	50	6
Awareness raising	26	42	32	34	49	17
Development and self-development of personality qualities important for entrepreneurial activity	35	40	25	46	48	6
Orientation of education to personality-oriented education and activity approach taking into account psychological and age features	37	46	17	45	49	6

Table 4

Levels of formation of personal-reflexive component of students of VET institutions during the ascertaining and forming experiment (%)

Scales	Ascertaining experiment			Forming experiment		
	high	*medium*	*low*	*high*	*medium*	*low*
The ability of the student of VET institutions to analyze personal qualities and performance results in the process of obtaining professional education in the context of long-term plans for entrepreneurial activity	25	34	41	35	46	19
The ability of the student of VET institutions to analyze professional activity and career development	22	33	45	28	32	40
Adequate personal self-esteem	38	48	14	42	54	4
Development of reflexive analysis	37	47	16	43	53	4
The ability of the student to analyze personal qualities and performance results in the process of obtaining professional education in the context of long-term plans for entrepreneurial activity	36	47	17	42	53	5

The analysis of students' responses shows a significant improvement of students' knowledge in the field of business design, formation of projective skills and positive business thinking. The students of this group have begun to actively use professional terminology and from the test it has become clear that future professionals have a systematic idea of why, when and how they can engage in entrepreneurial activity (Yenyhin, 2011, pp. 155-156).

The results of the formative stage of the pedagogical experiment suggest that the proposed experimental factors have had a positive effect on the dynamics of development of all components of the perception of students of VET institutions regarding entrepreneurial activity, and a significant difference in the relevant indicators has taken place for all components except the operational and activity component. However, we do not consider this result of the experiment for the formation of operational and activity component of the students of VET institutions (regarding entrepreneurial activity) to be negative, as both at the beginning of the experiment and at the time of its completion, the high and average level of its manifestation was over 90% (91, 3 at the ascertaining stage and 96,6 at the formative), that is, it was already high enough at the beginning of the experiment.

Conclusions. The peculiarity of the use of pedagogical technology for the development of entrepreneurial competence of future skilled workers in the project activity process is its combination with traditional forms of education that provide training with the development of internal potential and entrepreneurial activity of the student's personality. The basis of pedagogical technology, in this case, is a competency-based approach in education, which is implemented through the use of innovative teaching methods in training entrepreneurs who will work in various sectors of the economy. Criteria for the effectiveness of its implementation are: establishing direct contacts between future and existing entrepreneurs; transfer of entrepreneurs' own practical experience in doing business to future professionals; acquaintance with the activities of entrepreneurs through the imitation of their functions by students in the process of project activities; involvement of students in entrepreneurial activity.

List of references

Алєксєєва, С.В., Базиль, Л.О., Байдулін, В.Б., Ваніна, Н.М., Єршова, Л.М., Закатнов, Д.О., Орлов, В.Ф. та Радкевич, О.П., 2019. Основи інноваційного підприємництва: програма навчальної дисципліни для закладів професійної (професійно-технічної) освіти. *Професійна освіта*, 2 (83), с. 33-35.

Алєксєєва, С.В, Базиль, Л.О., Гриценок, І.А., Єршова, Л.М., Закатнов, Д.О., Орлов, В.Ф. та Сохацька. Г.В., 2020. *Підготовка майбутніх кваліфікованих кадрів до підприємницької діяльності в умовах розвитку малого бізнесу: теорія і практика*: монографія. Житомир: «Полісся».

Єнигін, Д.В., 2011. Порівняльний аналіз результатів експериментального дослідження з перевірки ефективності технології формування проективних умінь майбутніх учителів іноземних мов. *Современные научные исследования и инновации*, 2, 56-63.

Єршова Л., 2018. Від купця – до підприємця: трансформація цінностей української економічної еліти у XIX – на початку XX століття. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка*, 15, 154-161.

Осовська, Г., 2003. *Основи менеджменту*. Київ: Кондор.

Падалка, О.С. та Нісімчук, А.М., 1995. *Педагогічні технології*. Київ: Українська енциклопедія.

Петренко, Н., Кустріч, Л. та Гоменюк, М. 2015. *Управління проектами*. Київ: Центр учбової літератури.

Ткаченко, М.В., 2018. *Формування підприємницької компетентності майбутніх фахівців ресторанного господарства у професійно-технічних навчальних закладах*. Кандидат наук. Інститут професійно-технічної освіти НАПН України. Київ.

Фомичев, Р.С., 2014. Критерии и показатели эффективности реализации современных педагогических технологий в процессе модернизации общего образования. *Гуманитарные научные исследования,* 11, 32-39.

Alekseeva, S. and Sokhatska, H., 2020. Shaping a cognitive component of entrepreneurial competency during professional training of futures pecialists. *Professional Pedagogics*, 1(20), с. 127-133. DOI: https://doi.org/10.32835/2707-3092.2020.20.

Yershova, L., 2019. Developing entrepreneurial competency of future qualified specialists using self-management technology. *Professional Pedagogics*, 2 (19), с.92-100.

Radkevych, V., Orlov. V., Bazyl, L. and Radkevych. O., 2020. *Interdisciplinary Approach to the Economic-Legal Socialization of Specialists in Modern Labor Market*, 25(6), pp.208-218. doi: Utopía y Praxis Latinoamericana,10.5281/zenodo.3987608

Radkevych, O., 2019. Project management software in the field of professional (vocational) education, *Professional Pedagogics*, (2(19), pp.124-132. DOI:10.32835/2223-5752.2019.19.124-132.

Translated & Transliterated

Alieksieieva, S.V., Bazyl, L.O., Baidulin, V.B., Vanina, N.M., Yershova, L.M., Zakatnov, D.O., Orlov, V.F. ta Radkevych, O.P., 2019. Osnovy innovatsiinoho pidpryiemnytstva: prohrama navchalnoi dystsypliny dlia zakladiv profesiinoi (profesiino-tekhnichnoi) osvity [Fundamentals of innovative entrepreneurship: curriculum for vocational education.]. *Profesiina osvita* [*Vocational education*], 2 (83), s. 33-35, [in Ukrainian].

Alieksieieva, S.V, Bazyl, L.O., Hrytsenok, I.A., Yershova, L.M., Zakatnov, D.O., Orlov, V.F. ta Sokhatska. H.V., 2020. *Pidhotovka maibutnikh kvalifikovanykh kadriv do pidpryiemnytskoi diialnosti v umovakh rozvytku maloho biznesu: teoriia i praktyka: monohrafiia [Preparation of future qualified personnel for entrepreneurial activity in the conditions of small business development: theory and practice: monograph*]. Zhytomyr: «Polissia», [in Ukrainian].

Yenyhin, D.V., 2011. Porivnialnyi analiz rezultativ eksperymentalnoho doslidzhennia z perevirky efektyvnosti tekhnolohii formuvannia proektyvnykh umin maibutnikh uchyteliv inozemnykh mov [Comparative analysis of the results of an experimental study to verify the effectiveness of technology for the formation of projective skills of future foreign language teachers]. *Sovremennyie nauchnyie issledovaniya i innovatsii [Modern Research and Innovation*], 2, 56-63 [in Ukrainian].

Yershova L., 2018. Vid kuptsia – do pidpryiemtsia: transformatsiia tsinnostei ukrainskoi ekonomichnoi elity u XIX – na pochatku XX stolittia [From a tradesman to an entrepreneur: the Ukrainian business leaders' values transformation in XIX and early XX centuries]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific Herald of the Institute of Vocational Education and Training of the National Academy of Pedagogical Sciences of Ukraine. Vocational pedagogy*], 15, 154-161, [in Ukrainian].

Osovska, H., 2003. *Osnovy menedzhmentu* [*Fundamentals of management*]. Kyiv: Kondor, [in Ukrainian].

Padalka, O.S. ta Nisimchuk, A.M., 1995. *Pedahohichni tekhnolohii* [*Pedagogical technologies*]. Kyiv: Ukrainska entsyklopediia, [in Ukrainian].

Petrenko, N., Kustrich, L. ta Homeniuk, M. 2015. *Upravlinnia proektamy* [*Project management*]. Kyiv: Tsentr uchbovoi literatury, [in Ukrainian].

Tkachenko, M.V., 2018. *Formuvannia pidpryiemnytskoi kompetentnosti maibutnikh fakhivtsiv restorannoho hospodarstva u profesiino-tekhnichnykh navchalnykh zakladakh [Formation of entrepreneurial competence of future specialists of restaurant business in vocational schools*]. Kandydat nauk. Instytut profesiino-tekhnichnoi osvity NAPN Ukrainy. Kyiv, [in Ukrainian].

Fomichev, R.S., 2014. Kriterii i pokazateli effektivnosti realizatsii sovremennyih pedagogicheskih tehnologiy v protsesse modernizatsii obschego obrazovaniya [Criteria and indicators of efficiency of realization of modern pedagogical technologies in the course of modernization of general education]. *Gumanitarnyie nauchnyie issledovaniya [Humanities Research*], 11, 32-39, [in Russian].

Alekseeva, S. ta Sokhatska, H., 2020. Shaping a cognitive component of entrepreneurial competency during professional training of futures pecialists. *Professional Pedagogics*, 1(20), c.127-133. https://doi.org/10.32835/2707-3092.2020.20, [in English].

Yershova, L., 2019. Developing entrepreneurial competency of future qualified specialists using self-management technology. *Professional Pedagogics*, 2 (19), c.92-100, [in English].

Radkevych, V., Orlov. V., Bazyl, L., and Radkevych. O., 2020. *Interdisciplinary Approach to the Economic-Legal Socialization of Specialists in Modern Labor Market*.25(6), pp.208–218. doi: Utopía y Praxis Latinoamericana,10.5281/zenodo.3987608, [in English].

Radkevych, O., 2019. Project management software in the field of professional (vocational) education, *Professional Pedagogics*, 2(19), pp.124-132. doi:10.32835/2223-5752.2019.19.124-132, [in English].

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ПЕДАГОГІЧНА ТЕХНОЛОГІЯ РОЗВИТКУ ПІДПРИЄМНИЦЬКОЇ КОМПЕТЕНТНОСТІ МАЙБУТНІХ КВАЛІФІКОВАНИХ РОБІТНИКІВ У ПРОЦЕСІ ПРОЄКТНОЇ ДІЯЛЬНОСТІ

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Реферат.

Актуальність: Нова якість професійної освіти орієнтована не стільки на засвоєння учнівською молоддю певної суми знань, умінь, скільки на розвиток особистості. Заклади професійної (професійно-технічної) освіти мають формувати ключові компетенції, професійні компетентності, особливо гостро постає питання розвитку підприємницької компетентності учнівської молоді. Це можливо завдяки використанню сучасних освітніх технологій.

Мета: охарактеризувати педагогічну технологію розвитку підприємницької компетентності майбутніх кваліфікованих робітників у процесі проєктної діяльності, висвітлити критерії ефективності її реалізації.

Методи: аналіз наукової літератури, законодавчо-нормативних документів – для з'ясування сучасних тенденцій формування педагогічної технології розвитку підприємницької компетентності майбутніх кваліфікованих робітників у процесі проєктної діяльності; методи аналізу і синтезу – для формулювання критеріїв та показників ефективності реалізації педагогічної технології розвитку підприємницької компетентності майбутніх кваліфікованих робітників у процесі проєктної діяльності, систематизація даних, узагальнення професійного досвіду для розроблення теоретичних і методичних підходів до визначення умов перевірки її результативності; порівняльний аналіз, синтез та методи експертного оцінювання – для формування вимог щодо експериментальної перевірки результативності педагогічної технології розвитку підприємницької компетентності майбутніх кваліфікованих робітників у процесі проєктної діяльності.

Результати: сформульовані критерії та показники ефективності реалізації педагогічної технології розвитку підприємницької компетентності майбутніх кваліфікованих робітників у процесі проєктної діяльності на сучасному етапі розвитку суспільства.

Висновки: експериментально перевірено результативність педагогічної технології розвитку підприємницької компетентності майбутніх кваліфікованих робітників у процесі проєктної діяльності, сформульовано критерії та показники ефективності її реалізації – це, в свою чергу, дозволить переключити організацію освітнього процесу з «театру одного актора» на співпрацю і продуктивну проєктну діяльність.

Keywords: *модернізація професійної освіти, педагогічна технологія, підприємницька компетентність, проєктна діяльність, заклади професійної (професійно-технічної) освіти, критерії ефективності.*

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DEVELOPMENT OF DUAL EDUCATION IN GERMANY IN THE HISTORICAL CONTEXT

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Abstract.

Relevance: it is designed with socio-economic requirements for finding ways to reform professional ed-ucation in Ukraine, which requires taking into account Germany's experience in the field of professional training of competitive personnel and introducing a dual form of education.

Aim: of the article was to reveal the basic historical preconditions for the emergence and stages of de-velopment of dual education in Germany, analyses its features to ensure its effective and organic implemen-tation in the system of professional (vocational-technical) education of Ukraine.

Methods: theoretical (analysis, synthesis, interpretation, abstraction, generalization, analogy, compari-son); combination of logical and historical, comparative historical methods; empirical (praximetric).

Results: were investigated the development of a dual system of education of Germany in the historical context: from medieval handicraft guilds to modern problems associated with the globalization of educa-tional sphere, modernization and informatization of the economy and production. The main stages of devel-opment of dual education in Germany are also characterized: the creation of labour schools, the reform of labour (folk) school of G. Karushsteiner, disintegration of education during the economic crisis, the revival of a dual system of education and its problems in the era of globalization. The article provides the results of the analysis of historical and pedagogical studies of various authors, official normative legal documents that regulate the process of dual education in Germany, which allowed determining the patterns and peculiarities of its development.

Conclusions: Historical and pedagogical analysis of the peculiarities of the process of formation and de-velopment of the dual education system in Germany in different historical periods allowed to distinguish its features: practice-oriented, integrity, innovation, flexibility, intellectualization, dynamism, social orientation and individualization. Implementation of elements of the dual education system in educational systems of other countries should take place not only involving German experience of legislative, economic regulation of this system and participation of employers in it, but also consider its historical genesis.

Keywords: *dual education of Germany; labour school; folk school; professional school; professional education; practi-cal training; theoretical preparation.*

Introduction. Dual education in Germany is a unique national educational system, due primarily to its history and stages of industrial development. In Germany, dual education is regulated mainly by three laws and one provision: the Vocational Training Act (BBiG); the Vocational Training Promotion Act (BerBiFG); youth law on labour protection (JArbSchG); profession regulations (HWO). Training regulations (Ausbildungsverordnungen) regulate professions that require special training.

The key to quality vocational education and training in Germany is its close connection with the economy, in particular the active cooperation of educational institutions with enterprises. It stimulated the rise of the general level of education of the population, as evidenced by the growing number of educated people in the country: in 1976 only 38% of the population had no vocational or higher education, in 2013 this figure fell to 15%. In addition, the contractual basis of dual education makes it possible to carry out training in the required professions and

provides almost 100% employment of young students.

It should be added that in Germany, two-thirds of students spend their time at work, which, in turn, provides it with the image of the country with the lowest unemployment rate. This fact testifies to the existence of an established mechanism of social partnership, which has been created and consolidated its positions over the years. Therefore, in order to import dual education to other countries and its quality implementation in vocational education and training institutions, it is necessary to study thoroughly its development in the historical context and taking into account the political, economic and social aspects.

The study of the development of dual education in Germany in the historical context and taking into account the political, economic and social aspects shows that it combined both the historical experience of the nation and the traditions of German pedagogical thought and the experience of the German labour school. This adds uniqueness to Germany's vocational education and training system and encourages scholars to do comparative research to understand better the possibilities and features of its implementation.

Sources. The stages of the emergence of dual vocational education in Germany have been studied in the works of such scientists as N. Abashkina, R. Arnold, J. Baumert, G. Belkovsky, H. Benner, I. Boychevskaya, K. Bucher, G. Gruner, K. Koenig, T. Kozak, A. Lipsmeyer, L. Melnikova, G. Fedotova, H. Fur, K. Stratmann and others. According to them, the history of the dual system of vocational education and training in Germany dates back to the early Middle Ages.

The results of the analysis of scientific works, which studied foreign systems of vocational education and training, showed the need for a thorough consideration of the experience of training workers in the dual form of education in Germany, in particular its features and development problems.

In view of the above, the relevance of this study is due to socio-economic requirements for finding ways to reform vocational education in Ukraine, which require consideration of Germany's experience in training competitive staff and the introduction of a dual form of education.

Aim: of the article was to reveal the basic historical preconditions for the emergence and stages of development of dual education in Germany, analyses its features to ensure its effective and organic implementation in the system of professional (vocational-technical) education of Ukraine.

Methods: theoretical (analysis, synthesis, interpretation, abstraction, generalization, analogy, comparison,); combination of logical and historical, comparative historical methods; empirical (praximetric).

Results and discussion. The institutional, legal, economic, and cultural foundations of dual education in Germany were laid in the last 20 years of the nineteenth century and the first 20 years of the twentieth century. (Greinert, 1993; Stratmann and Schlösser, 1990), but students learning in the workplace has a very long history.

The beginning of the development of dual vocational education and training in Germany, scientists date back to the reign of Charles Velukuy. Then there was an orderly and legally regulated vocational training, which young people aged 12 to 18 years, had the opportunity to receive. They came to the master to study as his students. The training period usually lasted four years. The master shared knowledge with students and provided the hone of their skills.

In terms of craft activities, professional training and education was carried out on the basis of methods of repetition, imitation and formation of skills and abilities to perform complex operations. This type of training was the first stage in the formation of the dual system of vocational education in Germany, although it was represented only by its practical component.

In the twelfth century in all sectors of the German economy commodity-money relations spread due to the emergence and development of cities, which contributed to the separation of crafts from agriculture. At the same time, artisans became the owners of certain means of production, which led to the development of artisan apprenticeship. Students worked with their master- craftsmen in the store or travelled with master-merchants to trade in goods. Students usually followed the so-called principle of Imitatio Majorum, which refers to the consistent observation, imitation, autonomous implementation and configuration. This training involved instilling in students the skills to perform certain operations and their understanding and entry into the social role through the profession. However, as we understand, the systematic transmission of theoretical knowledge to students was virtually absent. Such training, typical for many countries at that time, was called «dogmatic.» It was not able to meet the needs of practice, so the student workshop, which emerged in the Gothic era, becomes a kind of solution to meet practical needs.

The Gothic era (mid-thirteenth century), which is characterized by the creation of principalities, urban development, the creation of military-trade unions and the widespread use of writing materials, had a great influence on education. During this period the second component of the dual system of vocational education and training, the theoretical, was outlined in student workshops. Under such conditions, the development of society caused changes in education: not a banal observation of the master and imitation of his actions, but the study of theoretical information.

During the Renaissance (around 1400), the teaching of the craft was made impossible by the lack of theoretical training with using new technologies. Thus, vocational education in Germany has been enriched by another component - advanced training. It was held by other masters, often abroad, where new styles and ideas were adopted. This made it possible to accumulate the experience of different countries, and for its transfer in professional practice there was a "professional school" - a new place of realization of the theoretical component of dual vocational education and training.

In the XV-XVI centuries in different regions of Europe political structures – states – appeared and, accordingly, the process of economic competition between them begins. The German state during this period has achieved global economic development. Cities gained freedom and autonomy, which led to the transformation of artisans into owners of means of production, the emergence and development of associations of artisans in unions. It should be added that these unions were created on a professional basis, and were designed to protect the interests of artisans. Such events created in Germany the appropriate circumstances for the "maturation" of urban crafts and craft training. Craft schools were established to provide workers' qualifications. During this period the vocational education and training became an important tool for the state to recognize its independence and gain economic influence.

At the same time, city merchants and artisans managed to open guild and craft schools for their children, in which they taught in their native language. These schools had the task to help children in their future trade business and in the development of various crafts. Students were taught to read, write, count, for which they used methods of imitation, repetition and formation of skills and abilities to perform complex operations. However, theoretical training in the workplace was given very little time.

It should be noted that studying the process of craft education in Germany from its inception to the XV-XVI centuries, we can mostly trace the process of forming the content of the practical component of the dual system of vocational education and training. With the advent of states in Europe, a need for an organic combination of practical and theoretical components appeared. However, the educational institutions available at that time provided practical training mostly, and very little time was given to the theoretical component in the workplace.

In the system of vocational education and training in Germany, the theoretical component began to be established in the early XVI century due to the emergence of religious Sunday schools. In these schools, students learned to write, read, count, and the word of God. But education in these schools still was not compulsory. It should be emphasized that artisan unions already understood the importance of students' acquisition of systematic theoretical knowledge, and therefore, this fact was reflected in the guild statutes of many existing at that time the duchies. The training of the craft took place according to the strict rules of the guild statutes – this is the so-called "training of masters" – according to the classical model "student – apprentice – master".

Industrialization had changed the nature of labour, which led to a new stage in the development of the dual system of vocational education and training. Craft apprenticeship, due to the unjustified narrow specialization and low level of qualification of future workers, had ceased to meet the country's needs for qualified personnel. The most common methods of observation and simulation at that time had low quality, and the development of the professional level of training required changes. Attempts have been made to change the form of student learning: the introduction of compulsory attendance for theoretical knowledge. This contributed to the emergence of curricula and the emergence of the foundations of didactics of vocational education. The development of industry was seen by artisan workshops as a threat to "social laws", so they considered it was necessary to prevent the "danger of destruction" of the foundations and traditions of handicraft production. At the same time, craft was the main factor in craft professional education: ideological motives prevailed over professional ones; training was aimed at developing not so much professional as socially significant personality traits, in particular the formation of social responsibility in students.

Despite the fact that Germany in the eighteenth century departed from the medieval attitudes in the field of vocational education and training, reorientation,

demanded by industrial development, did not happen. Therefore, the system of vocational education and training in the country functioned until the first half of the nineteenth century on the basis of already existing craft principles, practically without taking into account industrial and technical ones.

During the Renaissance, real schools appeared, which made it possible to launch a new model of education that created competition for the guild method of teaching. The curriculum contained only those subjects whose study provided better preparation of students for practical activities. In addition, the craft program provided students with a series of operations required to obtain the final product. During the study of the craft, the main attention was paid to the fact that students in the process of work acquired the skills of visual-motor coordination, mastered the basic qualities necessary for each type of activity.

Development and implementation of the idea of real education and preparation of young people for practical activities in the late XVIII century characterized by the emergence of a special type of school for the poorest sections of the population, the so-called industrial school (from the Latin. Industria – diligence), which taught only the craft, educating an obedient and diligent worker. Mental education was limited to reading skills, and education was provided by conversations on religious topics to develop patience and diligence. This negative trend was caused by the intensified development of manufacturing in Germany, which required numerous workers. The following figures testify the spread of this type of school: in Bohemia in 1798 there were 674 industrial schools, in Westphalia – 231, in Prussia almost all garrison schools became industrial, in Bavaria in 1807-1808 there were 450, in Württemberg in 1822 – 342 schools (Abel, 1960).

Until the middle of the XIX century, industrial schools were gradually disappearing. This was due to the replacement of manufacturing by a machine industry that produced many goods and had lower human costs. In addition, at the beginning of industrialization, attempts to stimulate the development of handicraft production and raise the level of education of the population were made. Mandatory attendance at Sunday schools was regulated as a method of combating illiteracy. From 1820, professional educational and training institutions were established. In addition, due to the emergence of new technologies and forms of labour organization, advanced industries in Germany have initiated large-scale reforms in the system of vocational education and training.

In January 1871, the German Empire was created by uniting German cities under the leadership of O. Bismarck, who headed the government of the Kingdom of Prussia and the North German Union (Toropov, 2002). The completion of German unification created a single internal market, contributed to its strong economic growth and transformation into the world's second industrialized power. In view of this, the requirements for intellectualization and integration of production activities in enterprises had increased, which, in turn, raised the issue of professional development of workers.

Due to the rapid development of science and technology and the associated complication of production in the late XIX - early XX centuries in Germany, the question of purposeful training of qualified personnel for various areas of economic life became acute. Existing since the sixteenth century public schools, which taught literacy, morality, obedience and discipline, did not take into account the needs of industrial life and the so-called middle class. Thus, at the end of the XIX century among teachers – supporters of the labour school, a new direction emerged, which was more in line with the spirit of the time.

In 1876, the German economist, sociologist and politician K. Bücher developed the concept that reorganized public schools (Volksschule) must have so-called training workshops, which indicated the concentration of vocational education in schools and workshops. In 1878, an attempt to update the system of vocational education and training was made, namely to move the training of workers from the sphere of production to special training workshops, in which the educational process took place under the guidance of masters. However, the model of training workshops became widespread only in the twenties of the XX century. This happened due to the dual principle of vocational education that was formulated by G. Kershensteiner: practical training is carried out in production, theoretical classes – in vocational school. G. Kershensteiner implemented the reform of the labour (folk) school, setting as its main goal: civic education of youth; integration of theory and practice in teaching; understanding of social laws and processes for their application in one's own life; understanding the feasibility, order, division of functions, as well as the need to adapt to the environment. This led to the opening of an additional level of professional education – the eighth grade and training not only the profession skills, but also teaching the theoretical foundations of professional knowledge. G. Kershensteiner's reformist

idea, which was to create vocational schools for the training of artisans by analogy with high schools, which traditionally trained future university students, solved several pressing public and state problems (Toropov, 2002). On one hand, the recognition of the importance and thoroughness of vocational training by citizens and future students of vocational schools was ensured, and on the other hand, the problem of labour force training and efficiency and productivity was solved.

In the 90s of the XIX century, a better combination of practical and theoretical components of the dual system of vocational education and training appeared, as the German manufacturing industry had experienced a shortage of skilled workers. Therefore, vocational schools were opened at enterprises. These institutions combined the acquisition of working specialities by students at school and their work in manufacture. Initially, these were the so-called «student corners», and in 1906 the first factory school (Werkschule) was established (Khyzhnyak, 2019).

Mechanization of labour and jobs, the high cost of industrial equipment and the complex nature of production processes had created the preconditions for a vocational school to become a place of education and training of future skilled workers. Only in the early twentieth century day schools were introduced instead of religious Sunday schools (evening) (Khyzhnyak, 2019). This contributed to the purposeful acquisition by students of a certain amount of theoretical knowledge, which was an integral part of dual vocational education.

In the early twentieth century in Munich, G. Kershensteiner introduced a new, practice-oriented type of school for which the profession was the centre of attention. Thus, in the 1900/1901 academic year, the first vocational schools for butchers, confectioners, chimney sweeps, hairdressers and hairdressers were established in Munich (Khyzhnyak, 2019). They became an example of a new, professionally divided type of school that complemented industrial training. The main task of such schools was general labour training. In addition, there was a clear line between the theoretical and practical components of vocational education and training. These schools were providedwith their own laboratories and workshops, school gardens, drawing and drawing rooms, kitchens and more. It should be noted that, according to G. Kershensteiner (1954), the load of theoretical training should be at least 7-9 hours a week, and theoretical training should not be carried out late in the evening.

It should be emphasized that the start of the consolidation of dual vocational education and training of students for the needs of specific industries (Kutscha, 2006) was the publication by the German Committee for Technical Education in 1919 the first systematized curricula of various vocational schools. Two components of the dual system of education and training – practical and theoretical training of students – had finally been balanced and approved at the state and legislative levels: the Statement on the regulation of the student education system was adopted at the XX Congress of German Trade Unions (Büchter, 2013). However, the official year of birth of the dual system of vocational education and training is considered to be 1938. This year in Germany the general compulsory education in vocational schools was introduced at the legislative level and the concept of "dual system of vocational education" was justified in the scientific sphere.

The political crisis of the first quarter of XX century affected the economies of European countries, including Germany. This slowed down the development of vocational education and training systems. The relationship and coordination of enterprises with vocational schools began to recover only after 1945. At the same time, practical education began to dominate the production, and educational material was mainly focused on the production content of the enterprise.

In the early 60s of the twentieth century, significant changes in the field of educational policy were due to scientific and technological progress. The recovery-legislative period in vocational education began, which lasted from 1961 to 1989. Its characteristic features were: renewal of the system of primary vocational education and legislative and regulatory support: adoption of the Law "On the Unified Socialist Education System" and the Law "On Vocational Education", Improvement of vocational training programs, official recognition of the dual education system in Germany (Kozak, 2017).

The further period of modernization of vocational education continues to this day and is characterized by changes and updates of all curricula and programs; modernization of professional training of high school students at enterprises, its rationalization and strengthening of state influence.

Despite the support of the state and employers, the establishment of vocational centres and the high employment rates of young people in Germany compared to other countries, we must recognize certain problems inherent in the dual system of vocational education and training. They are generated by: the

rapid growth of new high-tech industries and, as a consequence, the need to quickly update the content of vocational education and training; the development of Internet technologies and technologies in general, based on electronic control systems, require highly intelligent professionals with a high level of theoretical training, as well as gradually displacing human labour in manufacture; the beginning of the recession in industrialized countries, which affects the reduction of jobs, the demand for skilled workers in the labour market and the demand for significant resources of enterprises for their training.

The era of globalization has become the another challenge for the German system of vocational education and training, as according to A. Pleshakova (Pleshakova, 2018) every fifth German inhabitant has a foreign origin. This has exacerbated the problem of preserving identity and demonstrated that, along with legislative and economic mechanisms to support the functioning of the dual system of vocational education and training, the human factor remains decisive.

German migration policy in recent years has been a test of strength for the dual system of vocational education and training. This raised the following issues: cultural adaptation of refugees; the need for Native German cultural dominance to ensure the sustainability and traditions of dual education; education of gender equality; minimizing the influence of national migrant communities for the effectiveness of the process of adaptation of migrant students.

To solve the problems of youth employment, training and retraining of skilled workers, dual education is recognized as the best because it is able to: provide a high level of their professional qualifications, sufficient theoretical training, as well as to form social responsibility of future professionals. In addition, the prospects for its application are based on the actual focus on real production, as well as the balance of industrial and theoretical training.

Conclusions. The study, conducted on the basis of the comparative-historical method, as well as the analysis of domestic and foreign scientific sources and regulatory framework, made it possible to draw the following conclusions.

The emergence of a dual system of vocational education and training in Germany (early ninth century) was characterized by a complete denial of theoretical training.

The emergence of Gothic student workshops and vocational schools during the Renaissance, as well as the organization of craft schools and the emergence of religious Sunday schools in Germany in the early seventeenth century, contributed to the establishment of a theoretical component of dual education.

The historical period of development of dual education in Germany from the XVIII century to the beginning of the XX century is expedient to divide into three stages:

- XVIII century – formation and development of real and industrial schools, the dominance of the idea of education and training of law-abiding artisans and harmoniously developed citizens;
- the end of the XVIII - XIX centuries - the emergence of an industrial school, which taught only crafts, educating an obedient and diligent worker, the introduction of compulsory attendance at Sunday schools;
- late XIX - early XX century - creation of additional schools and development of the system of dual vocational education and training, consolidation at the scientific and legislative levels of the balance of theoretical and practical components of the dual system of vocational education and training.

According to the results of the analysis of the historical stages of development of dual education in Germany, the following features can be distinguished: practical orientation, integrativeness, innovation, intellectualization, flexibility, dynamism, social orientation and individualization.

The prospect of further research is a comparative analysis of borrowing the dual education system of Germany by foreign countries and designing a model of its implementation in Ukraine, as well as studying current problems of the dual education system and ways to solve them in Germany and Ukraine.

List of references

Абашкіна, Н. В. 1998. *Принципи розвитку професійної освіти в Німеччині.* Київ. Україна: Вища школа.

Бойчевська, І., 2017. Дуальна система Німеччини. *Навчально-методичний центр професійно-технічної освіти у Сумській області*, [online] Доступно: http://nmcpto.sumy.ua/wpcontent/uploads/2017/04/Дуальна-система-Німеччини.pdf5 [Дата звернення 11 Березень 2021].

Булах, К. В. та Жукова, Н. Н., 2017. История развития дуальной системы профессионального образования в странах европейского союза. *Вестник АГУ*, 4, с. 57-64.

Грайнерт, В.Д., 2017. *Профессиональное образование в Европе. Сравнение возникновения и развития трех классических моделей*. 2-е изд., Бальтманнсвайлер.

Герлянд, Т. М., Дрозіч, І. А., Кулалаєва, Н. В., Романова, Г. М. та Шимановський, М. М., 2019. *Організація дуальної форми навчання у закладах професійної (професійно-технічної) освіти:* практ. посіб. Житомир: Полісся.

Есенина, Е. Ю., Куртеева, Л. Н., Осадчева, С. А. та Сатдыков, А. И., 2018. Трудовое воспитание и профессиональное обучение в германии: краткий исторический обзор. *Образование и наука,* 20 (9), с. 56-74.

Козак, Т. Б., 2017. Становлення та розвиток початкової професійної освіти в Німеччині: історико-педагогічний аналіз. *Молодий вчений,* 4 (44), с. 372-377.

Корнеева, Л. И., 2004. Становление профессионального обучения и повышения квалификации кадров в Германии: логико-исторический анализ. *Образование и наука*, 3, с. 53-60.

Міністерство освіти і науки України, 2015. *Дуальна освіта.* [online] (Останнє оновлення 2 Березень 2021) Доступно: https://mon.gov.ua/ua/osvita/profesijno-tehnichna-osvita/dualna-osvita [Дата звернення 11 Березень 2021].

Пєшкова, Г., 2018. Вчитися на роботі: як працюватиме дуальна освіта в Україні. *Український інтерес.* [online] Доступно: https://uain.press/education/vchytysya-na-roboti-yak-zapratsyuye-dualna-osvita-v-ukrayini-943921 [Дата звернення 11 Березень 2021].

Плешакова, А. Ю., 2018. Дуальная система образования Германии: исторический контекст. *Научный діалог,*10, с. 301–312.

Торопов, Д. А., 2002. *История развития немецкой системы профессионального образования.* Москва: ИСПО РАО.

Хижняк І. та Глазкова І., 2019. Становлення теоретичного та практичного компонентів дуальної системи освіти в Німеччині. *Професіоналізм педагога: теоретичні й методичні аспекти.* 9, с. 70-83.

Abel, H., 1959. Polytechnische Bildung und Berufserziehung in internationaler Sicht. *International Rewiev of Education*, 5, pp. 369-382.

Arnold, R., 1990. *Berufspaedagogik: Lehren und Lernen in der beruflichen Bildung: Ein Studienbuch.* Frankfurt: Diesterweg.

Benner, H., 1987. Arbeiten zur Ordnung der Berufsausbildung vom DATSCH bis zum BIBB. *Wirtschaft und Berufs-Erziehung, 10*, pp. 295-308.

Rein, V., 2017. Towards the Compatibility of Professional and Scientific Learning Outcomes: Insights and Options in the Context of Competence Orientation. *International Journal for Research in Vocational Education and Training, 4* (4), pp. 325-345. Available at: https://doi.org/10.13152/IJRVET.4.4.2f [Accessed 11 March 2021].

Reuter-Kumpmann, H., 2004. From divergence to convergence. A history of vocational education and training in Europe. *Vocational Training European Journal*, 32, pp. 6-17.

Translated & Transliterated

Abashkina, N. V., 1998. Pryntsypy rozvytku profesiinoi osvity v Nimechchyni [*Foundations of vocational education development in Germany]*. Kyiv, Ukraine: Vyshcha shkola, [in Ukrainian].

Boichevska I. B. Osoblyvosti profesiinoho navchannia v mezhakh dualnoi systemy osvity v Nimechchyni [Features of vocational training within the dual education system in Germany.]. *Navchalno-metodychnyi tsentr profesiino-tekhnichnoi osvity u Sumskii oblasti [Educational-methodical center of vocational education in the Sumy area*]. [online]. Dostupno: http://dspace.udpu.org.ua:8080/jspui/bitstream/6789/494/1/Osoblyvosti%20profesiinoho%20navchannia%20v%20mezhakh%20dualnoi%20systemy%20osvity%20Nimechchyny.pdf [Data zvernennia 11 Berezznia 2021], [in Ukrainian].

Bulah, K. V. ta Zhukova, N. N., 2017. Istoriya razvitiya dualnoy sistemyi professionalnogo obrazovaniya v stranah yevropeyskogo soyuza. [Development of a dual vocational education system in the countries of the European Union], *Vestnik AGU*, 4, s. 57-64.

Graynert, V.D., 2017. *Professionalnoe obrazovanie v Evrope. Sravnenie vozniknoveniya i razvitiya treh klassicheskih modeley. [Education in Europe. Comparison of the emergence and development of three classical models]*. 2-e izd., Baltmannsvayler, [in Russian].

Herliand, T. M., Drozich, I. A., Kulalaieva, N. V., Romanova, H. M., ta Shymanovskyi, M. M., 2019. *Orhanizatsiia dualnoi formy navchannia u zakladakh profesiinoi (profesiino-tekhnichnoi) osvity [Organization of a dual form of training in professional education institutions (vocational)]: prakt. posib*. Zhytomyr: Polissia, s. 304, [in Ukrainian].

Yesenina, Y. Y., Kurteyeva, L. N., Osadcheva, S. A. ta Satdykov, A. I., 2018. Trudovoye vospitaniye i professional'noye obucheniye v germanii: kratkiy istoricheskiy obzor [Labor education and vocational training in Germany: a brief historical overview]. *Obrazovaniye i nauka [Education and science]*, 20 (9), s 56-74, [in Russian].

Kozak, T., 2017. Stanovlennia ta rozvytok pochatkovoi profesiinoi osvity v Nimechchyni: istoryko-pedahohichnyi analiz. [Formation and development of initial vocational education in Germany: historical and pedagogical analysis]. *Molodyi vchenyi [Young scientist]*, 4 (44), s. 372-377, [in Ukrainian].

Korneeva, L. I., 2004. Stanovlenie professionalnogo obucheniya i povyisheniya kvalifikatsii kadrov v Germanii: logiko-istoricheskiy analiz [Formation of vocational training and professional development of personnel in Germany: logical-historical analysis]. *Obrazovanie i nauka [Education and science],* 3, s. 53-60, [in Russian].

Ministerstvo osvity i nauky Ukrainy, 2015. Dualna osvita [Department of education and science of Ukraine. Dual education]. [online] (Ostannie onovlennia 2 Berezen 2021) Dostupno: https://mon.gov.ua/ua/osvita/profesijno-tehnichna-osvita/dualna-osvita [Data zvernennia 11 Berezen 2021], [in Ukrainian].

Pieshkova, H., 2018. Vchytysia na roboti: yak pratsiuvatyme dualna osvita v Ukraini. Ukrainskyi interes [Learn at work: how dual education will work in Ukraine. Ukrainian interest]. [online] Dostupno: https://uain.press/education/vchytysya-na-roboti-yak-zapratsyuye-dualna-osvita-v-ukrayini-943921 [Data zvernennia 11 Berezen 2021], [in Ukrainian].

Pleshakova, A. Yu., 2018. Dualnaya sistema obrazovaniya Germanii: istoricheskiy kontekst [The dual education system in Germany: a historical context]. *Nauchnyiy dialog [Scientific dialogue]*, 10, s. 301-312, [in Russian].

Toropov, D. A., 2002. *Istoriya razvitiya nemetskoy sistemyi professionalnogo obrazovaniya [The history of the development of the German vocational education system]*. M.: ISPO RAO, [in Russian].

Khyzhniak I. ta Hlazkova I., 2019. Stanovlennia teoretychnoho ta praktychnoho komponentiv dualnoi systemy osvity v Nimechchyni. [Formation of theoretical and practical components of the dual education system in Germany]. *Profesionalizm pedahoha: teoretychni y metodychni aspekty [Teacher`s professionalism: theoretical and methodical aspects]*. 9, s. 70-83, [in Ukrainian].

Abel, H., 1959. Polytechnische Bildung und Berufserziehung in internationaler Sicht. *International Rewiev of Education*, 5, s. 369-382, [in English].

Arnold, R., 1990. *Berufspaedagogik: Lehren und Lernen in der beruflichen Bildung: Ein Studienbuch*. Frankfurt: Diesterweg, [in English].

Benner, H., 1987. Arbeiten zur Ordnung der Berufsausbildung vom DATSCH bis zum BIBB. *Wirtschaft und Berufs-Erziehung*, 10, pp. 295-308, [in English].

Rein, V., 2017. Towards the Compatibility of Professional and Scientific Learning Outcomes: Insights and Options in the Context of Competence Orientation. *International Journal for Research in Vocational Education and Training*, 4 (4), pp. 325-345. Available at: https://doi.org/10.13152/IJRVET.4.4.2f [Accessed 11 March 2021], [in English].

Reuter-Kumpmann, H., 2004. From divergence to convergence. A history of vocational education and training in Europe. *Vocational Training European Journal*, 32, pp. 6-17, [in English].

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РОЗВИТОК ДУАЛЬНОЇ ОСВІТИ НІМЕЧЧИНИ В ІСТОРИЧНОМУ КОНТЕКСТІ

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Реферат:

Актуальність зумовлена соціально-економічними вимогами до пошуку шляхів реформування професійної освіти в Україні, що потребують урахування досвіду Німеччини в сфері професійної підготовки конкурентоспроможних кадрів і запровадження на цьому підґрунті дуальної форми здобуття освіти.

Мета полягає у розкритті основних історичних передумов виникнення та етапів розвитку дуальної освіти в Німеччині, аналізі її особливостей для забезпечення її ефективного та органічного впровадження в систему професійної (професійно-технічної) освіти України.

Методи: теоретичні (аналіз, синтез, інтерпретація, абстрагування, узагальнення, аналогія, порівняння,); поєднання логічного й історичного, порівняльно-історичних методів; емпіричні (праксиметричні).

Результати: досліджено розвиток дуальної системи освіти Німеччини в історичному контексті: від середньовічних ремісничих гільдій до сучасних проблем, пов'язаних із глобалізацією освітнього простору, модернізацією та інформатизацією економіки й виробництва. Також охарактеризовано основні етапи розвитку дуальної освіти Німеччини: створення трудових шкіл, реформа трудової (народної) школи Г. Кершенштейнера, дезінтеграція освіти в період економічної кризи, відродження дуальної системи освіти та її проблеми в епоху глобалізації. Представлено результати аналізу історико-педагогічних досліджень різних авторів, офіційних нормативних правових документів, що регламентують процес дуальної освіти Німеччини, що дали змогу визначити закономірності та особливості її розвитку.

Висновки: Історико-педагогічний аналіз особливостей процесу становлення і розвитку дуальної системи освіти у Німеччині в різні періоди її історії дав змогу виокремити такі її особливості: практикоорієнтованість, інтегративність, інноваційність, гнучкість, інтелектуалізацію, динамічність, соціальну спрямованість та індивідуалізацію. Впровадження елементів дуальної системи освіти в освітні системи інших країн повинно відбуватися не лише з урахуванням досвіду, накопиченого ФРН в галузі законодавчого, економічного регулювання цієї системи і участі роботодавців в ній, а й поєднанні з дослідженням її історичного генезису.

Ключові слова: *дуальна освіта Німеччини; трудова школа; народна школа; професійна школа; професійна освіта; практична підготовка; теоретична підготовка.*

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TRENDS IN THE DEVELOPMENT OF THE PROFESSIONAL PRE-HIGHER EDUCATION IN THE MODERN CONDITIONS

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Abstract.

The *relevance* of the study is predetermined by the need to define the place of professional pre-higher education in the domestic educational system and the prospects for the development of this newly formed link of professional education.

Aim: to outline the main directions of development of professional pre-higher education in the modern conditions of reforming the educational activity in Ukraine.

Methods: theoretical analysis of scientific sources – to determine the level of research of the problem; comparison – in order to study scientific approaches to solving the problem.

Results: It is proved that today the state of training applicants of professional education does not fully meet the modern needs of the labor market. The main factors that negatively affect the state of training these specialists were identified, namely: the long process of forming the system of professional pre-higher education and structural changes in the activities of the educational institutions of such type; incompleted legislative and legal regulation of this educational level; insufficient funding of the sphere; imperfect mechanism of forming the state order, which does not fully reflect the needs of the labor market; insufficient participation of employers in forming the content of education, solving problems of professional pre-higher education; insufficient personnel potential and imperfect system of professional development and internship of pedagogical staff etc.

Conclusions: the scientific article outlines the main directions of developing professional pre-higher education: completing the process of its legal framework forming; standardization of training applicants of the educational and professional degree of "junior bachelor"; consolidating the principles of student-oriented learning in the educational process; expanding the network of institutions with modern training and production infrastructure and forming the single system of professional education, which would combine professional-technical and professional pre-higher education; implementing new decentralized model of management and financing of the sphere; improving the quality of pedagogical staff who train applicants of education on this level.

Keywords: *professional pre-higher education, trends of development, student-oriented education, pedagogical staff, postgraduate education.*

Introduction. Reforming the education system of Ukraine is due to the integration aspirations of the country to the European community, as well as the need to improve the level and quality of the educational services, which should increase the competitiveness of graduates in the domestic and international labour markets. The consequence of this is introducing new legislation into educational activities, changing the established approaches to the organization and implementation of the educational process, developing modern standards for training specialists in various fields, introducing new levels and types of education, forms of obtaining it, etc.

It should be noted that the consequences of reforming the educational space involved all the educational institutions of Ukraine, however, it is lokely

the sphere of vocational education underwent the most profound changes.

The scientific community considers that the system of the vocational education includes vocational (vocational-technical) training (or vocational pre-higher education) and higher professional education (Luhovyi and Talanova, 2017). At the same time, it should be noted that a person may acquire certain professional competencies at other levels of education.

The two-tier system of the vocational education existed until 2017 when after the adoption of the Law of Ukraine "On Education" the professional pre-higher education was singled out the system of higher education as a separate integral part of the education system in Ukraine. The event gave grounds to assert the expansion of the vocational education system, the formation of its third link, the professional pre-higher education.

Sources. Topical issues of functioning and developing the vocational education in Ukraine, training skilled workers for various sectors of the economy were the subject of research of many scientists, including: V. Andrushchenko, S. Honcharenko, M. Zhurovsky, I. Zyazyun, A. Kalensky, O. Kovalenko, L. Korotkova, V. Kremin, N. Kuzmina, V. Kurok, M. Lazaryev, V. Luhovy, P. Luzan, L. Lukyanova, N. Nychkalo, V. Radkevych, O. Radkevych, L. Pukhovska, S. Sysoyeva and others.

V. Suprun and V. Maksymchuk studied the issues of decentralization and optimization of managing professional (vocational and technical) and professional pre-higher education in the modern socio-economic conditions; organizing the educational process in the institutions of the professional pre-higher education was researched by T. Ravchyna and H. Shemelyuk (2019); introducing the information technologies into the vocational training was investigated by M. Horikhovsky, Y. Zhuravel, Y. Tsykalyuk, I. Tarasyuk; the main directions of the legislative support of the professional pre-higher education were studied by V. Zeleny and others. However, given the short period of time that passed since the professional pre-higher education was singled out into the separate component of the education system, there are still insufficiently studied questions about determining its place in the national educational space, as well as the promising areas for its further development.

Aim: is to identify the problem issues of functioning the system of the professional pre-higher education and trends in its development in the current conditions of reforming the education system in Ukraine.

Methods: theoretical analysis of scientific sources – to determine the level of research of the problem; comparison – in order to study scientific approaches to solving the problem.

Results and discussion. According to Article 16 of the Law of Ukraine "On Education", "professional higher education is aimed at forming and developing educational qualifications and it confirms the ability of a person to perform typical specialized tasks in the particular field of the professional activity related to performing tasks of the increased complexity and/or limited management functions characterized by some uncertainty of conditions and require applying the provisions and methods of the relevant science field, and ends with the acquisition of the appropriate educational and/or professional qualifications" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2017).

In the pedagogical science, the concept of "trend" means a priority area in which the development of the particular phenomenon is carried out. Therefore, in the study the main directions of the development of the professional pre-higher education in terms of reforming the educational activities in Ukraine will be analyzed.

One of the trends in the development of the professional pre-higher education at the present stage is completing the process of its legal definition and implementing the new legislation in the educational activities in order to bring the functioning of the professional pre-higher education institutions to the requirements of the national and European educational space.

As it was noted earlier, in accordance with the provisions of the new version of the Law of Ukraine "On Education", professional pre-higher education was singled out into the independent integral part of the education system. It led to the situation when technical schools and colleges that trained specialists at the educational and qualification level of "junior specialist", were deprived of the status of higher education institutions of 1st–2nd levels of accreditation.

These steps at the state level have led to some uncertainty among teachers and students of technical schools and colleges as for the prospects for the further development of this area of education, as the loss of the status of higher education institutions along with the other unsolved problems may significantly reduce the number of the potential applicants and, as a consequence, to the decline of this part in the vocational education.

In order to reform the system of training of junior specialists, bringing it to the requirements of the national and international regulations, solving the current problems and increasing the level of the educational services suggested by technical schools and colleges, as well as complying the norm of the second paragraph of subppoint 2 of paragraph 6 of Chapter XII of the Law of Ukraine "On Education", the draft Law of Ukraine "On the Professional Pre-Higher Education" was prepared and adopted by the Verkhovna Rada of Ukraine in June 2019.

This law regulates "the procedure, conditions, forms and peculiarities of obtaining professional pre-higher education and regulates public relations arising in the process of realizing the citizen's constitutional right to education, rights and obligations of individuals and legal entities involved in exercising this right, it also determines the competence of the state bodies and local self-government bodies in the field of the professional pre-higher education". In addition, it "establishes the basic legal, organizational, financial principles of the professional pre-higher education system, creates the conditions for combining education with production in order to train competitive professionals to meet the needs of the society, labour market and the state" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2019).

According to the provisions of the law, technical schools and colleges, which previously had the status of higher educational institutions of the 1st and 2nd levels of accreditation, must be reorganized and "professional colleges – institutions of the professional pre-higher education or structural subdivisions of higher education institutions, other legal entities, which conduct educational activities related to obtaining professional pre-higher education, may conduct research and/or creative artistic and/or sports activities, provide the combination of theoretical training with job training" must be organised on their basis (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2019). The other types of institutions of the professional pre-higher education are military colleges for sergeants and vocational colleges with specific training conditions.

Training specialists of the educational degree "professional junior Bachelor" (instead of the current educational level "junior specialist") able to effectively carry out practical activities in various sectors of the economy and to meet employers' demands in the domestic and international labour markets must become the main result of the educational activity of institutions of professional pre-higher education. At the same time, the possibility of training professional junior Bachelors by some institutions of the professional (vocational) education is provided, in case of obtaining the appropriate license and compliance with the standards of the professional pre-higher education.

The above mentioned legislative changes make an important step in the process of reforming the professional pre-higher education which will introduce the conceptual framework of the competence approach in the educational activities of vocational colleges. The dominant idea of competence-based learning is to shift the emphasis from the process of obtaining relevant knowledge, skills and abilities in the particular field to achieving specific learning outcomes (competences) that determine the ability of the specialist to effectively perform tasks of the future professional activity. Therefore, one of the trends in the further development of the professional pre-higher education which will achieve the set aim, is improving the quality of the educational services by standardizing students training of the educational and professional degree of "junior Bachelor".

At the same time, oner should agree with the opinion of scientists that at the present stage "standardizing competence education in terms of justification of aims, content, evaluation of competences of students and graduates of vocational education is still carried out at an intuitive level" (Kalens'ky et al., 2018, p. 15). The development of standards of the professional pre-higher education will solve these problems.

Nowadays, in this country standards for training professionals of various specialties at various levels of education, including the professional pre-higher education, are actively developed. The standard of the professional pre-higher education defines the set of requirements for the educational and professional programmes of the professional pre-higher education that are common to all the educational and professional programmes within the certain specialty (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2019). It determines the content of the educational activities, competences and final learning outcomes that must be achieved by students during training in the specialty within the educational-professional programme.

The standard of the professional pre-higher education defines the following requirements to the educational-professional programme: the list of obligatory general and special competences and results of training students of the professional pre-higher education; requirements for the prior education of persons who can start training under this programme; the amount of ECTS credits required to obtain the professional Bachelor degree in the

relevant specialty; forms of certification of students of the professional pre-higher education; requirements for the internal quality providing system; requirements of the professional standards (if any). These provisions are contained in the Guidelines for the development of the standards of the professional pre-higher education approved by the Order of the Ministry of Education and Science of Ukraine of July 13, 2020, No. 918. This normative document also defines the procedure of developing and asserting the standards of the professional pre-higher education, the structure and the recommendations for their developing. It was designed to assist stakeholders in developing standards and unifying approaches to defining the content requirements.

The next direction of developing the professional pre-higher education to ensure the implementation of the competence paradigm, is the humanization of the education. Its essence is in reorienting the educational process from the traditional knowledge based approach consisting in transmitting the necessary knowledge and forming skills within the relevant specialty to the student-centred educational process where the student's personality, educational needs and necessary social skills prevail and they will allow him to effectively carry out the professional activities and successfully socialize in the society.

It should be noted that for the first time at the legislative level the Law of Ukraine "On Professional Pre-higher Education" formulates the concept of the "student-oriented teaching" and defines it as "the approach to the educational process, which includes: encouraging students of the professional pre-higher education to the role of the autonomous and responsible entities of the educational process; creating the educational environment focused on meeting the needs and interests of students of the professional pre-higher education, including providing opportunities for forming individual educational plan; building the educational process on the basis of mutual respect and partnership of students of the professional higher education and administration, pedagogical (scientific and pedagogical) and other employees of the institution of the professional pre-higher education" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2019).

Among the main principles of the student-oriented educational activities there are the following: learning as a teacher-student interaction; mutual understanding in the relationship between them (the presence of mutual trust, respect; desire to work together); relying on students' cognitive activity (expression of their own thoughts; searching for new ideas, solutions; constructing their own understanding of the objective phenomena and processes; acquiring new skills, etc.); expanding student's autonomy, granting the right to choose; reflective approach of teachers and students to the processes of teaching and learning; teachers' and students' mutual satisfaction with the educational process (Ravchyna and Shemelyuk, 2019, p. 201). This will allow students to be active participants in the educational process and independently choose their own educational plan.

Creating the extensive network of institutions based on the currently functioning colleges and technical schools and forming the united system of the professional vocational education, which would combine vocational and professional pre-higher education is an important trend in the further development of the professional pre-higher education.

According to the data of the Strategy for the development of higher education for 2021–2031, as of the beginning of the 2019–2020 academic year, the number of universities, institutes and academies increased compared to the 2014–2015 academic year by 1.4% (to 281 institutions) while the number of technical schools, colleges and vocational schools decreased by 12.7% (338 institutions), and compared to 1991 – by 51.1% (Strategy for the Development of Higher Education for 2021–2031, p. 9). This indicates the continuing trend of increasing the number of higher education institutions and reducing the number of institutions of the professional pre-higher and vocational education. The main reason for this phenomenon, in the author's opinion, is the low prestige of working professions in the society and the desire of applicants for higher education and their parents to obtain university diploma.

Thus, according to the Ministry of Education and Science of Ukraine in 2019, 14.7% of graduates of basic secondary education in Ukraine chose to study in the system of the vocational (technical) education, 64.8% continued their studies to complete the secondary education in general secondary education institutions (schools)) and 19.6% school graduates in the institutions of higher (currently professional pre-higher – the author''s note) education (colleges, technical schools) (Strategy for the development of higher education for 2021–2031, p. 9).

Such situation leads to the shortage of skilled workers in the country and oversaturation of the labour market with higher education institutions graduates, who have to hold jobs and perform the functions of specialists, whose training should be carried out by vocational (technical) education institutions, colleges and technical schools. Given the above

mentioned, it is important to take appropriate measures to change the correlation towards increasing the share of graduates entering vocational pre-higher education institutions, compared with those who choose to enter higher education institutions.

Therefore, in the author's opinion, there is an urgent need of creating the network of the educational institutions with modern training and production infrastructure, which would unite institutions of the professional pre-higher and vocational education in the unified system of the vocational education and take into account the needs of regional labour markets for skilled workers. At the same time, it is necessary to promote at the state level the need to obtain working specialties and create decent working conditions and payment for vocational education institutions graduates.

Improving the teaching staff quality of the professional pre-higher education institutions is a current trend in the development of this component of education, as one of the main factors influencing the quality of training is the staffing of educational institutions. The effectiveness of the educational process, the implementation of the ideas of the competence approach education, the use of the new teaching and learning technologies directly depends on the personality of the teacher, their professional and other competences, motivation to teach in the new conditions, awareness of the need for continuous self-development and self-improvement. It is the teacher who creates the favourable atmosphere for learning, awakens students' interest in the cognitive activities, motivates them to acquire competences and future professional activities, helps to meet students' educational needs and forms them as self-sufficient, enterprising and creative personalities.

However, there also exists a negative trend that was observed in the last several years – the transition of qualified teachers from colleges and technical schools to institutions of higher education or other working places. Among the main reasons for this phenomenon are the following: unsatisfactory working conditions, outdated material and technical base, low wages, low authority of the teacher in the society, etc. Therefore, the state policy in the field of the professional pre-higher education should be aimed at raising the interest of teachers of colleges and technical schools in keeping their positions and involving highly qualified professionals by way of creating favourable working conditions for them, ensuring the necessary level of social and legal protection, wages and opportunities for their further professional development.

Many institutions of the professional pre-higher education are characterized by the high level of the scientific and/or practical experience of most teachers and by the insufficient level of their pedagogical skills. For example, in the institutions of the professional pre-higher education, most teachers are qualified professionals with the extensive experience in enterprise or production, but they are not sufficiently aware of the modern approaches to the organization of the educational process or pedagogical interaction with students, colleagues, etc. (Ravchina and Shemelyuk, 2019, p. 205).

For solving this and the other issues related to the development of the professional competences of teachers of the vocational higher education institutions in Ukraine, there is a system of postgraduate education, which is an integral part of the system of continuing adult education.

Researchers see the main tasks of the system of postgraduate education of the scientific and pedagogical employees as follows:

- improvement of the normative-legal provision of the system of postgraduate pedagogical education;
- development of the standards of postgraduate pedagogical education, focused on the modernization of the system of in-service training, advanced training and internships of teachers, research and teaching staff and heads of educational institutions;
- introduction of innovative technologies of pedagogical support and advanced training of pedagogical employees, scientific and pedagogical staff and managers of the education system taking into account modern tendencies of reforming and modernizing the Ukrainian education system;
- promoting the use of the perspective training during in-service training of teachers, research and teaching staff and educational managers in accordance with the requirements of the society and the development of the state (Tolochko, 2019, p. 45).

According to the relevant law, pedagogical staff of the professional pre-higher education institutions must improve their skills annually. At the same time, the total amount of the academic hours for advanced training for five years cannot be less than 120 hours, of which a certain number of hours must be aimed at improving knowledge, skills and practical skills in working with students with special educational needs and adult students. The results of the professional development must be taken into account when attesting teachers and appointing them to the position or making the employment contract (Law of Ukraine, 2019).

Conclusions. The state of training students of the professional education does not fully meet the modern needs of the labour market. Factors that negatively affect the state of training relevant professionals are as follows: the long process of forming the system of the professional pre-higher education and structural changes in the activities of the relevant educational institutions; incomplete legislative and departmental legal regulation of the level of education; insufficient funding for the industry; imperfect mechanism of forming the state order, which does not fully reflect the needs of the labour market; insufficient participation of employers in shaping the content of education, solving the problems of the professional pre-higher education; insufficient personnel potential and imperfection of the system of advanced training and internship of teachers, etc.

At the same time, government agencies, educational institutions and other stakeholders take measures to bring the situation in line with the needs of the society and the requirements of the domestic and international regulations in the field of education. This concerns, first of all, developing and improving the legal framework for providing educational services in the field of the professional pre-higher education, introducing the competence-based approach to education, standardizing training, involving business entities in the development of educational standards. The positive aspect is that the expert community and scientists are actively involved in the process. However, some of the outlined issues need further solving.

Based on the analyzed state of functioning the system of the professional pre-higher education in the modern conditions, the main trends in the development of this education component can be defined, namely: completion of the process forming its regulatory framework; standardization of training students of the educational and professional degree "junior Bachelor"; consolidation of the principles of student-oriented learning in the educational process; expansion of the network of institutions with modern training and production infrastructure and the formation of the united system of the professional education, which would combine vocational (vocational and technical) and professional pre-higher education; improving the quality of teachers involved in training students. The identified trends do not cover all the prognostic areas of developing the system of the professional pre-higher education, they can be expanded and supplemented in accordance with the implementation of measures to reform this component of education and research in the field of the educational activities..

List of references

Верховна Рада України. Законодавство України, 2017. *Про освіту. Закон України*. [online] (Останнє оновлення 23 Квітень 2021). Доступно: https://zakon.rada.gov.ua/laws/show/2145-19#Text [Дата звернення 31 Січень 2021].

Верховна Рада України. Законодавство України, 2019. *Про фахову передвищу освіту. Закон України*. [online] (Останнє оновлення 20 Березень 2020). Доступно: https://zakon.rada.gov.ua/laws/show/2745-19#Text [Дата звернення 4 Березень 2021].

Каленський, А. А., Лузан, П. Г., Ваніна, Н. В. та Пащенко, Т. М., 2018. *Стандартизація професійної освіти: теорія і практика;* монографія. Житомир: «Полісся».

Луговий, В. І. та Таланова, Ж. В., 2017. Особливості стандартизації професійної невищої і вищої освіти: теоретико-методологічний аспект. *Педагогіка і психологія. Вісник НАПН України*, 1(94), с. 5-20.

Методичні рекомендації щодо розроблення стандартів фахової передвищої освіти. Наказ Міністерства освіти і науки України від 13.07.2020 № 918. [online] Доступно: https://mon.gov.ua/ua/npa/pro-zatverdzhennya-metodichnih-rekomendacij-shodo-rozroblennya-standartiv-fahovoyi-peredvishoyi-osviti [Дата звернення 7 Березень 2021].

Равчина, Т. і Шемелюк, Г., 2019. Організація освітнього процесу в системі фахової передвищої освіти у вимірі законодавчих змін. *Вісник Львівського університету. Серія педагогічна*, 34, с. 198-208.

Стратегія розвитку вищої освіти на 2021-2031 роки. [online]. Доступно: https://mon.gov.ua/storage/app/media/rizne/2020/09/25/rozvitku-vishchoi-osviti-v-ukraini-02-10-2020.pdf [Дата звернення 7 Березень 2021].

Толочко, С. В., 2019. *Теоретичні й методичні засади формування науково-методичної компетентності викладачів у системі післядипломної педагогічної освіти.* Доктор наук. Національний педагогічний університет імені М. П. Драгоманова.

Translated & Transliterated

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2017. Pro osvitu. Zakon Ukrainy [On Education. Law of Ukraine]. [online] (Ostannie onovlennia 23 Kviten 2021). Dostupno: https://zakon.rada.gov.ua/laws/show/2145-19#Text [Data zvernennia 31 Sichen 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2019. Pro fakhovu peredvyshchu osvitu. Zakon Ukrainy [On Professional Pre-higher Education. Law of Ukraine]. [online] (Ostannie onovlennia 20 Berezen 2020). Dostupno: https://zakon.rada.gov.ua/laws/show/2745-19#Text [Data zvernennia 4 Berezen 2021], [in Ukrainian].

Kalenskyi, A. A., Luzan, P. H., Vanina, N. V. ta Pashchenko, T. M., 2018. Standartyzatsiia profesiinoi osvity: teoriia i praktyka; monohrafiia *[Standardization of Vocational Education: Theory and Practice: monograph]*. Zhytomyr: «Polissia», [in Ukrainian].

Luhovyi, V. I. ta Talanova, Zh. V., 2017. Osoblyvosti standartyzatsii profesiinoi nevyshchoi i vyshchoi osvity: teoretyko-metodolohichnyi aspekt [Features of standardization of vocational and professional higher education: theoretical and methodological aspect]. Pedahohika i psykholohiia. Visnyk NAPN Ukrainy *[Pedagogy and psychology. Bulletin of the National Academy of Pedagogical Sciences of Ukraine]*, 1(94), s. 5-20, [in Ukrainian].

Metodychni rekomendatsii shchodo rozroblennia standartiv fakhovoi peredvyshchoi osvity. Nakaz Ministerstva osvity i nauky Ukrainy vid 13.07.2020 № 918 [Methodical recommendations for developing the standards of professional pre-higher education. Order of the Ministry of Education and Science of Ukraine dated 13.07.2020 № 918]. [online] Dostupno: https://mon.gov.ua/ua/npa/pro-zatverdzhennya-metodichnih-rekomendacij-shodo-rozroblennya-standartiv-fahovoyi-peredvishoyi-osviti [Data zvernennia 7 bereznia 2021], [in Ukrainian].

Ravchyna, T. ta Shemeliuk, H., 2019. Orhanizatsiia osvitnoho protsesu v systemi fakhovoi peredvyshchoi osvity u vymiri zakonodavchykh zmin [Organization of the educational process in the system of professional pre-higher education in the terms of legislative changes]. *Visnyk Lvivskoho universytetu. Seriia pedahohichna [Bulletin of Lviv University. The series is pedagogical]*, 34, s. 198-208, [in Ukrainian].

Stratehiia rozvytku vyshchoi osvity na 2021-2031 roky [Strategy for the development of higher education for 2021-2031]. [online]. Dostupno: https://mon.gov.ua/storage/app/media/rizne/2020/09/25/rozvitku-vishchoi-osviti-v-ukraini-02-10-2020.pdf [Data zvernennia 7 Berezen 2021], [in Ukrainian].

Tolochko, S. V., 2019. *Teoretychni y metodychni zasady formuvannia naukovo-metodychnoi kompetentnosti vykladachiv u systemi pisliadyplomnoi pedahohichnoi osvity [Theoretical and methodical bases of forming scientific and methodical competence of teachers in the system of postgraduate pedagogical education]*. Doktor nauk. Natsionalnyi pedahohichnyi universytet imeni M. P. Drahomanova, [in Ukrainian].

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ТЕНДЕНЦІЇ РОЗВИТКУ ФАХОВОЇ ПЕРЕДВИЩОЇ ОСВІТИ В СУЧАСНИХ УМОВАХ

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Реферат.

Актуальність дослідження зумовлена необхідністю визначення місця фахової передвищої освіти у вітчизняній освітянській системі та перспектив розвитку цієї новоутвореної ланки професійної освіти.

Мета: окреслити основні тенденції розвитку фахової передвищої освіти в умовах реформування освітньої системи України.

Методи: теоретичний аналіз наукових джерел – для з'ясування рівня дослідженості проблеми; порівняння – з метою вивчення наукових підходів до розв'язання проблеми.

Результати: доведено, що сучасний стан підготовки здобувачів професійної освіти не повною мірою відповідає актуальним потребам ринку праці; виокремлено основні чинники негативного впливу на стан підготовки відповідних фахівців (тривалий процес формування системи фахової передвищої освіти та структурні зміни в діяльності відповідних освітніх закладів; незавершеність законодавчого та відомчого нормативно-правового регулювання даного рівня освіти; недостатнє фінансування галузі; недосконалий механізм формування державного замовлення, що не повною мірою відображає потреби ринку праці; недостатня участь роботодавців у формуванні змісту освіти, розв'язанні проблем фахової передвищої освіти; недостатній кадровий потенціал та недосконаліть системи підвищення кваліфікації та стажування педагогічних працівників тощо).

Висновки: основними тенденціями розвитку фахової передвищої освіти є: завершення процесу формування нормативно-правової бази; стандартизація підготовки здобувачів за освітньо-професійним ступенем «молодший бакалавр»; закріплення принципів студентоорієнтованого навчання в освітньому процесі; розширення мережі закладів із сучасною навчально-виробничою інфраструктурою та формування єдиної системи професійної освіти, яка б поєднувала професійно-технічну та фахову передвищу освіту; реалізація нової децентралізованої моделі управління та фінансування галузі; вдосконалення якісного складу педагогічних працівників, які здійснюють підготовку здобувачів освіти.

Ключові слова: *фахова передвища освіта, тенденції розвитку, студентоорієнтоване навчання, педагогічні працівни-ки, післядипломна освіта.*

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PEDAGOGICAL CONDITIONS FOR THE FORMATION OF FUTURE TEACHERS' READINESS FOR TOLERANT EDUCATION OF ELEMENTARY SCHOOLCHILDREN

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Abstract:

Relevance: the need to determine the pedagogical conditions of future teachers' readiness for tolerant education of junior high school students due to the processes of globalization, European integration and reform of the modern elementary school, which define the framework of the educational space, built on the statement of man as the largest social value, the principles of humanism, child-centeredness and tolerance, and require a teacher willingness to dialogue by establishing with junior high school students relations of trust, cooperation, compromise, joy, camaraderie, empathy and psychological comfort with younger students.

Goal: based on the analysis of psychological and pedagogical achievements of modern teachers to determine the pedagogical conditions for the formation of future teachers' readiness for tolerant education of primary school children.

Methods: theoretical: analysis, synthesis, theoretical generalization.

Results: based on the generalization of the results of the analysis of psychological and pedagogical sources, the pedagogical conditions of preparation of future teachers for tolerant education of junior schoolchildren are defined as a set of favorable factors that ensure effective implementation of the model of future teachers' readiness for tolerant education of junior schoolchildren.

Conclusions: The pedagogical conditions for the formation of future teachers' readiness for tolerant education of junior schoolchildren are highlighted: pedagogical consensus on the orientation to tolerant education, reflection in the content of professional training of the basic principles of tolerant education, introduction of contextual learning and quasi-professional situations.

Keywords: *pedagogical conditions, training of future teachers, tolerant education, readiness for tolerant education, primary school.*

Introduction. Globalization, European integration, reform as processes that characterize the modern education system, affirm the person as the greatest social value, outline the framework of educational space based on humanism, child-centeredness and tolerance, thus requiring the teacher to be ready for dialogue by establishing relations with younger students. , cooperation, compromise, joy, camaraderie, empathy and psychological comfort.

A professionally competent primary school teacher is perceived in society as a person who is able to establish contacts with all participants in the educational process (students, their parents, colleagues), regardless of age, nationality, social status, belonging to different cultures, etc .; thereby asserting his own tolerant position (Cherednyk, 2020, p. 17). Thus, the future teacher must be a bearer of humanistic values, able to show tolerant behavior and cultivate it in younger students.

Since the process of formation of future teachers' readiness for tolerant education of primary school students is complex, long and covers various areas of

personality (cognitive, emotional-value, activity-communicative), it can not be realized without creating pedagogical conditions, isolation, justification and characteristics of which are for the purpose of this article.

Resources. The theoretical basis of the study were international documents (Declaration of Principles of Tolerance (1995), Convention on Human Rights (1948), Convention on the Rights of the Child (1989), Constitution of Ukraine (1996), Laws of Ukraine "On Education" (2017), "On Higher Education"). "(2014), legal documents of the education system of Ukraine: National Strategy for Education Development in Ukraine until 2021 (2013), Sustainable Development Strategy" Ukraine - 2020 "(2015), the Concept of the New Ukrainian School (2016), the Concept of Development pedagogical education (2018), as well as modern scientific research of the problem of formation of future teachers' readiness for tolerant education of junior schoolchildren, namely: methodological foundations of modern philosophy of education (V. Andrushchenko, V. Kremen, V. Lutay, V. Ognevyuk, etc. .); general issues of tolerance pedagogy (M. Andreev, O. Bezkorovaina, O. Griva, G. Kobernyk, L. Moskalyova, Y. Todortseva, etc.); its education in junior high school students (M. Horvat, O. Savchenko and etc.), improving the process of preparation future teachers of primary school (O. Bida, V. Bondar, O. Budnyk, J. Kodlyuk, L. Koval, A. Kramarenko, O. Matvienko, L. Perminova, L. Petukhova, O. Fediy, L. Khomych, L. Khoruzha, etc.); psychological and pedagogical principles of formation of pedagogical tolerance of future teachers (T. Atroshchenko, N. Byrko, T. Varenko, Y. Gordienko, A. Goryanska, Y. Irkhina, E. Kaikova, O. Kondratieva, R. Kostruban, I. Kryvoshapka L Matsyuk, M. Melnychuk, O. Ruda, A. Skok, O. Stolyarenko, I. Sukhopara, etc.); application of foreign experience in training future teachers to cultivate tolerance (O. Orlovska and others).

Goal of the article: on the basis of the analysis of psychological and pedagogical literature to single out, theoretically substantiate and characterize pedagogical conditions of formation of future teachers' readiness for tolerant education of junior schoolchildren.

Research methods: theoretical: analysis, synthesis, theoretical generalization.

Results and discussion. Analysis of general pedagogical works on the formation of readiness of future teachers for professional activity O. Bida, V. Bondar, I. Shaposhnikova, L. Kanishevskaya, N. Klokar, L. Koval, A. Kramarenko, research on the preparation of future primary school teachers for various types and aspects of education, the formation of tolerance of future teachers as a necessary component of readiness for educational activities, etc. allowed us to identify a number of conditions, compliance with which ensures the formation of readiness of future teachers for tolerant education of primary school children.

In this context, by conditions we mean the necessary circumstances that make possible the above process, "a set of interrelated and interdependent factors that ensure the process of formation" (Wolf, 2017, p. 58) of readiness of future teachers for tolerant education of primary school children.

In the modern pedagogical literature there are several approaches to determining the conditions of the process of formation of readiness for education: detailed descriptive - an attempt to detail the necessary circumstances so as not to lose anything important; conceptual - the separation of a number (2-3) of the main conditions as the minimum necessary for the process; organizational - delineation of only those conditions that ensure the implementation of a particular experimental model; step-by-step - presentation of a set of requirements in a clearly defined sequence (stages of formation of the specified qualities) (Cherednyk, 2020, p. 100).

An example of the first approach is the study of V. Lyapunova (2017), in which the author widely uses general professional and pedagogical approaches. Describing the pedagogical conditions for the implementation of her training system, the researcher identified eight main requirements, including: the functioning of a tolerant educational space in the educational system of values, based on the concepts of consensus (compromise), compromise, mutual acceptance, etc. (Lyapunova, 2017, p. 289); motivation of students' educational and professional activities to master various ways of "being a tolerant teacher", which is expressed in the ability to comprehend the pedagogical reality (Lyapunova, 2017, p. 291); use of pedagogical resources of educational disciplines for formation of readiness for tolerant interpersonal and professional interaction (Lyapunova, 2017, p. 296); integration of information important from the point of view of research to the content of the normative and variable part of training programs, first of all - to psychological and pedagogical disciplines (Lyapunova, 2017, p. 300), etc.

The conditions defined by the researcher are of a general nature and may extend to various aspects of the preparation of future teachers for professional activities, in particular, and the formation of their readiness for tolerant education of primary school

children. In a purely practical plane, we drew attention to the idea of consensus as the basis of a tolerant educational space, which we will develop in further research.

An analysis of the modern scientific literature shows that most researchers of the problems of preparing future teachers for a tolerant solution of educational problems outline the conditions for the effectiveness of this training in general. Thus, the researcher of the formation of readiness of future teachers of the humanities to prevent and resolve conflicts in educational work with students K. Rozum (2015, p. 11) considers the main conditions for ensuring this process to stimulate the development of moral, emotional and volitional qualities of teachers; creating a tolerant environment in the student group; saturation of the educational process with active methods that will promote the formation of future teachers' skills and abilities to prevent and resolve conflicts.

The main pedagogical conditions for ensuring the tolerance of students in the process of civic education, researchers (O. Kozlova, T. Grebenik, K. Rozum and others) consider the formation of a tolerant space, characterized by the unity of all subjects of the educational process and forms of organization of their relations. educational process, the basis of which is the subject-subject relationship in the system "educator-pupil".

According to L. Matsuk (2002, p. 16), the readiness of future primary school teachers for legal education of junior schoolchildren should be formed under the conditions of professional training (formation of legal knowledge in the process of studying professionally oriented disciplines, improving the content of legal education of future teachers). diagnostics of professional readiness), concentrating general pedagogical training, intellectual and psychological qualities and professional competencies.

O. Budnyk (2015, p. 441) refers to the pedagogical conditions of effective solution of tasks of professional training of future primary school teachers for social and pedagogical activity: integrity of training; step-by-step socio-pedagogical orientation of the content of free economic education education on the priority formation of moral-aesthetic and social-communicative components of readiness; humanization of professional training; formation of a positive social and educational environment in the educational institution.

Studying the processes of formation of professional readiness of future primary school teachers to work with children who have suffered domestic violence, O. Sakalyuk (2016, p. 13) concluded that their effectiveness depends on ensuring the humanistic orientation of professional and humanitarian training of students, democratization of educational the environment of the institution of higher education, stimulation of independent-volitional efforts of students, attraction of potential of pedagogical practice and independent work of students as carriers of practical experience, attitudes, values.

Considering the conditions for the formation of pedagogical tolerance of future teachers of foreign languages in primary school, Yu. Gordienko (2017, p. 11) clearly connects them with the relevant component of the model: theoretical and methodological - scientific and methodological support of the process of pedagogical tolerance; semantic - tolerance-oriented content of training; methodical - a high level of professional competence of teachers in the field of pedagogical tolerance; practical - creating a tolerant educational environment.

According to N. Byrko (2013, p. 9), the effectiveness of professional training of students to form tolerance of primary school students is ensured by implementing a set of pedagogical conditions that include: taking into account the individual level of tolerance of future teachers as a basis for professional activity; filling the content of educational work in the institution of higher education with materials on the development of tolerance and its components; introduction of ideas of pedagogy of tolerance. The conditions defined by the researcher are not directly conditions for preparing future teachers for tolerant education of primary school children, but they relate to the process of educating students, which is based on tolerance and aims to form the quality of tolerant personality (Cherednyk, 2020, p. 104).

Proponents of the organizational approach interpret the conditions not as existing circumstances, but as a system of measures: education of their individual components (attitudes, values, knowledge, skills and abilities) (Yu. Pidborsky); application of humanistically oriented pedagogical technologies within the multicultural approach to the study of philological disciplines; integration of the use of educational potential of philological disciplines in extracurricular activities of students (F. Asanova); optimal combination of theoretical, methodological and practical components of training future teachers for the formation of interethnic tolerance; taking into account the peculiarities of personality-oriented learning (I. Zalesova).

Thus, R. Kostruban (2016, p. 9) came to the conclusion about the importance of using a holistic interconnected set of specifically implemented in the

educational process of specific psychological and pedagogical measures that ensure future primary school teachers achieve the appropriate level of tolerance in humanitarian training: 1) using the potential of a systems approach for the formation of the motivational and value component of tolerance in future teachers; 2) development and implementation of the professional profile of the future teacher taking into account the cognitive-semantic component of tolerance, which includes personal characteristics; 3) activation of the conative-reflexive component of tolerance of future teachers by means of training.

Based on the fact that the preparation of future teachers for tolerant education involves the development of tolerance as a professional quality, certain conditions for the formation of pedagogical tolerance of future teachers can be taken into account when determining the conditions for preparing future teachers for tolerant education of primary school children.

Researchers in this area have built a pedagogical model of consistent formation of tolerance in students of higher pedagogical educational institutions, which outlines the main conditions for its implementation (enrichment with information on the principles of communicative tolerance; organization of tolerant interaction in educational and professional interaction, etc.); of this process: updating educational information with the theory of pedagogical and psychological tolerance, training of skills of analysis, construction and presentation of ways to resolve conflict pedagogical situations by means of teacher-facilitator (Yu. Todortsev); development and implementation of new approaches and recommendations for the formation of the content component of educational programs for the training of future high school teachers on the basis of increasing the number of hours for the study of elective subjects on the problems of education tolerance; creative combination of content, forms and technologies for the development of personal and professional qualities; introduction of innovative learning technologies in training; study of the experience of teachers-practitioners; taking into account progressive ideas of foreign experience, etc. (O. Orlovska).

Recently, a step-by-step approach has become widespread among researchers, according to which the conditions for carrying out a certain type of training for future teachers are associated with a specific stage. This approach is followed by A. Logvinenko, who considers the optimal three-stage (motivational-instructional, communicative-behavioral; independent-creative) approach to the organization of the process of training future foreign language teachers to the formation of tolerance of primary school students; I. Kryvoshapka, which determines the main conditions for the implementation of the process of educating tolerance of future teachers in higher education (enrichment of the content of the special course interdisciplinary links in psychological and pedagogical disciplines with emphasis on the course "Fundamentals of pedagogical skills"; special course "Pedagogy of tolerance in higher education"; creative use of innovative personality-oriented technologies, etc.), linking them with certain stages of training (informative; motivational; activity-creative).

Thus, the analysis of scientific research on the conditions of formation of future teachers' readiness for tolerant education and its individual aspects shows that researchers associate them with four groups of factors: the educational environment in which the process of training; available qualities of process participants; the content of the training process and its organization.

One of the main conditions for the formation of tolerance in future teachers, scientists consider the presence of a tolerant educational environment (space): "functioning of a tolerant educational space" (V. Lyapunov), "formation of tolerant space" (O. Kozlova, T. Grebenik), "creation of tolerant educational space "(I. Krivoshapka), etc. That is why we refer to the first group of conditions those related to the educational environment, but we will consider it not as a condition, but as a guide.

Researchers have identified a number of main features of a tolerant environment: creating an atmosphere of nonviolence and safe interaction in the student environment; democratic style of pedagogical leadership and pedagogical communication; cooperation and dialogue between all subjects of the educational process, etc. (V. Lyapunova, 2017); establishing relations of mutual understanding and mutual demands on the basis of trust, respect, patience, friendly relations between the administration, teachers and students; creating an emotionally positive atmosphere and psychologically comfortable conditions for creative self-realization and cognitive activity of students, etc. (I. Kryvoshapka, 2015); joint development of rules of conduct in the audience; agreement that the classroom is a zone free from ridicule, mockery and aggression; observance of fundamental human rights and freedoms; creating situations of success; assessment of actions, not personal characteristics of subjects; respect for the opinion and position of another; assertiveness of behavior; transfer of conflict situations in

a positive direction; dialogicity and reflectivity of interaction; compliance with the regulations during classes (Yu. Gordienko, 2017, p. 175).

It is logical that the presence of a tolerant educational environment (space) in the process of training future primary school teachers will positively affect the formation of readiness for tolerant education of students, but we believe that the creation and improvement of a tolerant educational environment is not a condition but a parallel training of a specialist in the process, its integral part.

We believe that the first important condition for the formation of future teachers' readiness for tolerant education of primary school students is consensus, a kind of agreement of the subjects of educational environment to adhere to the principles of tolerance in training, which either states a tolerant educational environment or declares the intentions of subjects educational process for its creation. In this sense, we develop V. Lyapunova's idea of consensus as the basis of a tolerant educational space. However, we consider it not only as a principle of organization of the educational environment, but also as a condition for the formation of readiness of future teachers for tolerant education of primary school students (Cherednyk, 2020, p. 117).

Consensus is a general agreement of the participants in the educational process, which is characterized by the absence of serious objections to significant issues of content and organization of educational activities, which is achieved as a result of a procedure aimed at taking into account the views of all participants and converging differences. According to O. Hryhor, consensus is not unanimity, as there is no need for a complete coincidence of positions of all participants in the process to make a decision. Consensus presupposes only the absence of direct objections and fully allows for a neutral position (refraining from openly expressing one's own views) as well as individual objections to decisions (unless they usually undermine the basis of the agreement reached). However, consensus is not a majority decision because it is incompatible with the negative position of at least one participant (Grygor, 2014, p. 400].

In our study, pedagogical consensus is a basic condition for the process of preparing future teachers for tolerant education of primary school children and involves the consent of participants in the educational process to adhere to the principles of tolerance: teachers (inclusion in the content of disciplines related to tolerant education; cultivation of tolerant attitude; educational process, application of methods and techniques that promote the detection and development of tolerance, etc.), students (recognition of the principles of tolerance, their observance, cultivation of tolerant relationships in the student environment, etc.), administration (promoting tolerance, democratic principles, etc.).

Consensus does not arise by itself. It can exist as a tribute to a tradition that has long existed in the educational environment of free economic education, as a result of solving a difficult pedagogical situation, the need to implement a certain idea initiated from outside (government programs, concepts, orders or arise within the environment (testing of scientific developments of teachers, work to improve the educational process and microclimate in student groups, etc.).

In our study, consensus is defined as the result of several factors: tradition, the implementation of the ideas of tolerant education and the concept of the New Ukrainian School (Cherednyk, 2020).

The second group of conditions for the formation of the readiness of future teachers for tolerant education of primary school students, researchers include the presence of certain qualities of the subjects of educational activities. First of all, such qualities of students are: motivation of students to master various ways "to be a tolerant teacher"; increasing attention to the motivational component of readiness (V. Lyapunova, O. Budnyk); culture of communication as comprehension of others in dialogue and synergetic thinking (O. Kozlova, T. Grebenik); taking into account the individual level of tolerance (N. Byrko); skills of polysubjective and dialogical communication (Yu. Irkhin).

We believe that the requirements for the qualities of students are not entirely correct, as the vast majority of them can be formed in the process of training future teachers. In addition, the preparation of future teachers for tolerant education of primary school students involves the coverage of all students, and then should be standardized in the widespread practice of teachers. The requirements for teachers of higher education are part of the pedagogical consensus, because the teacher recognizes the need to prepare students for a tolerant education, and therefore takes responsibility for compliance with these standards in their own activities. Therefore, in our study we do not consider it necessary to make certain requirements for participants in the educational process, but emphasize the need for their willingness to act on the basis of tolerance, which is provided by the above condition - the presence of pedagogical consensus on tolerant education of primary school children.

The next group of conditions is put forward by scientists to the semantic component of training and use of pedagogical resources of academic disciplines, integration of meaningful information (V. Lyapunova), tolerant-oriented content (Yu. Gordienko), filling the content with materials on tolerance development and its components (N. Byrko), enrichment of information with appropriate content (M. Yakibchuk, I. Kryvoshapka), updating educational information with the theory of pedagogical and psychological tolerance (Yu. Todortseva).

We share the views of these researchers on the dependence of the process of preparing future teachers for tolerant education on the presence in the content of material on tolerant education, as well as methods and techniques for its implementation. Therefore, the second condition for the preparation of future teachers for tolerant education of primary school students is the reflection in the content of professional training of the basic principles of tolerant education. This logically follows from the pedagogical consensus: the recognition of the need to prepare students for tolerant education necessitates the consolidation of these ideas in the content in the form of educational guidelines - components of subject competencies, content lines, individual topics of educational programs or content emphasis, examples, problem statement and so on.

In our study, this condition is implemented through the development of a list of abilities, specific knowledge and skills of the student, obtained in the process of training and necessary for the introduction of tolerant education of primary school children; introduction of these abilities to the content of educational disciplines as educational landmarks; development of methodical recommendations on reflection of certain aspects of tolerant education at studying of concrete subjects.

Thus, the second pedagogical condition for the formation of future teachers' readiness for tolerant education of primary school students, we have identified the reflection of the ideas of tolerant education in the content of academic disciplines (Cherednyk, 2020, p. 120).

Another group of conditions concerns the organization of the educational process: the use of interactive technologies, dialogical methods, a combination of theoretical and practical stages of learning (V. Lyapunov), saturation of the educational process with active methods aimed at forming skills to prevent and resolve conflicts (K. Rozum), personality-oriented approach (O. Kozlova, T. Grebenyk), attracting the potential of pedagogical practice and independent work (O. Sakalyuk), introduction of ideas of pedagogical tolerance (N. Byrko), personality-oriented technologies, active methods and techniques (I. Kryvoshapka). Of course, each of the researchers laid down his own logic in determining the conditions depending on the specifics of the subject of study and the tasks they set for themselves and the models they proposed for their solution.

We assume that the educational guideline (predicted result) of our study is the readiness of future primary school teachers to tolerant education of primary school children, which is a set of abilities, the core of which is the ability to solve specific professional problems related to tolerant education of students. based on the knowledge acquired in the learning process. Therefore, the leading condition for the organization of student training should be the emphasis on professional practical orientation, which determines the selection of methods, techniques and means of educational activities, which in essence is the introduction of contextual learning and, consequently, student involvement in quasi-professional activities.

Thus, we consider it quite logical to determine the third important condition for the formation of future teachers' readiness for tolerant education of primary school students - the introduction of contextual learning and quasi-professional activities.

In modern pedagogical literature, the practical orientation of the educational process is called contextual learning. According to N. Demyanenko (2016, pp. 53-54), contextual learning is a conceptual basis for the implementation of the competency approach in professional pedagogical education and provides a dynamic movement of student activity from the actual educational (emphasis in lectures and seminars on the social context of professional activity) through quasi-professional (various forms of imitation of professional activity) and educational-professional to real professional. And quasi-professional activity, in turn, directs students to goal-setting, analysis and evaluation of problem situations, self-assessment in professional activities, constructing models of interaction, understanding the diversity of pedagogical options, problematizing the educational process and finding optimal solutions to succeed in professional activities (Demyanenko , 2016, pp. 55).

In this sense, we share the views of I. Zalesova and Y. Todortseva, who consider the conditions of training future teachers to "create situations of multicultural content" (I. Zalesova), "design and presentation of ways to resolve conflict pedagogical

situations by means of teacher-facilitator" (Yu. Todortseva), but we transfer these ideas to the field of quasi-professional activities and contextual learning.

Conclusions. Thus, the above-mentioned pedagogical conditions of training future teachers for tolerant education of primary school children (pedagogical consensus on the orientation to tolerant education, reflection in the content of professional training of the basic principles of tolerant education, implementation of contextual learning and quasi-professional situations) are understood as favorable. effective implementation of the model of formation of future teachers' readiness for tolerant education of junior schoolchildren.

List of references

Бирко, Н. М., 2013. *Педагогічна майстерня формування толерантності сучасного громадянина: методичний посібник*. Хмельницький: ХГПА. 184 с.

Будник, О. Б., 2015. *Теоретичні та методичні засади професійної підготовки майбутніх учителів початкових класів до соціально-педагогічної діяльності*. Доктор наук. Житомирський державний педагогічний університет імені І.Я.Франка.

Вовк, Л. М., 2017. *Педагогічні умови формування гендерної культури молодших школярів у навчально-виховній діяльності початкової школи*. Кандидат наук. Східноукраїнський національний університет імені Володимира Даля.

Гордієнко, Ю. А., 2017. *Формування педагогічної толерантності майбутніх учителів іноземних мов початкової школи*. Кандидат наук. Національний педагогічний університет ім. М. П. Драгоманова.

Григор, О., 2014. Теоретико-методологічні основи дослідження консенсусу. *Гілея : науковий вісник*, 89, с. 397-401.

Дем’яненко, Н., 2013. Контекстність освітнього простору вищої школи : рівень магістратури. *Вища освіта України,* 1, с. 50-56.

Кострубань, Р. В., 2016. *Формування толерантності у майбутніх учителів у процесі гуманітарної підготовки у педагогічних коледжах*. Кандидат наук. Бердянський державний педагогічний університет.

Кривошапка, І. В., 2015. *Виховання толерантності майбутніх викладачів вищої школи в умовах магістратури*: автореф. Кандидат наук. Полтавський національний педагогічний університет імені В.Г.Короленка.

Ляпунова, В. А., 2017. *Теоретичні і методичні засади професійної підготовки майбутніх вихователів до формування толерантності дітей у дошкільних навчальних закладах*. Доктор наук. Інститут педагогічної освіти і освіти дорослих НАПН України.

Мацук, Л. О., 2002. *Підготовка майбутніх учителів початкових класів до правового виховання молодших школярів*: автореф. Кандидат наук. Тернопільський державний університет імені Володимира Гнатюка.

Розум, К. В., 2015. *Формування готовності майбутніх учителів гуманітарного профілю до запобігання і розв'язання конфліктів у навчально-виховній роботі з учнями: автореферат*. Кандидат наук. Південноукраїнський національний педагогічний університет ім. К.Д. Ушинського.

Сакалюк, О. П., 2016. *Формування професійної готовності майбутніх учителів початкової школи до роботи з дітьми, які зазнали сімейного насильства*: автореф. Кандидат наук. Національний педагогічний університет ім. М. П. Драгоманова.

Чередник, Л.М., 2020. *Формування у майбутніх учителів готовності до толерантного виховання молодших школярів*. Кандидат наук. Бердянський державний педагогічний університет.

Translated & Transliterated

Byrko, N. M., 2013. *Pedahohichna maisternia formuvannia tolerantnosti suchasnoho hromadianyna: metodychnyi posibnyk [Pedagogical workshop of tolerance formation of a modern citizen: methodical manual]*. Khmelnytskyi: KhHPA, [in Ukrainian].

Budnyk, O. B., 2015. *Teoretychni ta metodychni zasady profesiinoi pidhotovky maibutnikh uchyteliv pochatkovykh klasiv do sotsialno-pedahohichnoi diialnosti [Theoretical and methodological principles of professional training of future primary school teachers for socio-pedagogical activities]*. Doktor nauk. Zhytomyrskyi derzhavnyi pedahohichnyi universytet imeni I.Ia.Franka, [in Ukrainian].

Vovk, L. M., 2017. *Pedahohichni umovy formuvannia hendernoi kultury molodshykh shkoliariv u navchalno-vykhovnii diialnosti pochatkovoi shkoly [Pedagogical conditions of formation of gender culture of junior schoolchildren in educational activity of primary school]*. Kandydat nauk. Skhidnoukrainskyi natsionalnyi universytet imeni Volodymyra Dalia, [in Ukrainian].

Hordiienko, Yu. A., 2017. *Formuvannia pedahohichnoi tolerantnosti maibutnikh uchyteliv inozemnykh mov pochatkovoi shkoly [Formation of pedagogical tolerance of future teachers of foreign languages of primary school]*. Kandydat nauk. Natsionalnyi pedahohichnyi universytet im. M. P. Drahomanova, [in Ukrainian].

Hryhor, O., 2014. *Teoretyko-metodolohichni osnovy doslidzhennia konsensusu [Theoretical and methodological bases of consensus research]*. Hileia : Naukovyi visnyk,89, s. 397-401, [in Ukrainian].

Demianenko, N., 2013. *Kontekstnist osvitnoho prostoru vyshchoi shkoly : riven mahistratury [The context of the educational space of higher education: the level of master's degree]*. Vyshcha osvita Ukrainy, 1, s. 50-56, [in Ukrainian].

Kostruban, R. V., 2016. *Formuvannia tolerantnosti u maibutnikh uchyteliv u protsesi humanitarnoi pidhotovky u pedahohichnykh koledzhakh [Formation of tolerance in future teachers in the process of humanitarian training in pedagogical colleges.]*. Kandydat nauk. Berdianskyi derzhavnyi pedahohichnyi universytet, [in Ukrainian].

Kryvoshapka, I. V., 2015. *Vykhovannia tolerantnosti maibutnikh vykladachiv vyshchoi shkoly v umovakh mahistratury: avtoref. [Education of tolerance of future teachers of higher school in the conditions of a magistracy]*. Kandydat nauk. Poltavskyi natsionalnyi pedahohichnyi universytet imeni V.H.Korolenka, [in Ukrainian].

Liapunova V. A., 2017. *Teoretychni i metodychni zasady profesiinoi pidhotovky maibutnikh vykhovateliv do formuvannia tolerantnosti ditei u doshkilnykh navchalnykh zakladakh [Theoretical and methodological principles of professional training of future educators for the formation of children's tolerance in preschool educational institutions]*. Doktor nauk. Instytut pedahohichnoi osvity i osvity doroslykh NAPN Ukrainy, [in Ukrainian].

Matsuk, L. O., 2002. *Pidhotovka maibutnikh uchyteliv pochatkovykh klasiv do pravovoho vykhovannia molodshykh shkoliariv : avtoref. [Preparation of future primary school teachers for legal education of junior schoolchildren]*. Kandydat nauk. Ternopilskyi derzhavnyi universytet imeni Volodymyra Hnatiuka, [in Ukrainian].

Rozum K. V., 2015. *Formuvannia hotovnosti maibutnikh uchyteliv humanitarnoho profiliu do zapobihannia i rozviazannia konfliktiv u navchalno-vykhovnii roboti z uchniamy: avtoref. [Forming the readiness of future teachers of the humanities to prevent and resolve conflicts in educational work with students]*. Kandydat nauk. Pivdennoukrainskyi natsionalnyi pedahohichnyi universytet im. K.D. Ushynskoho, [in Ukrainian].

Sakaliuk, O. P., 2016. *Formuvannia profesiinoi hotovnosti maibutnikh uchyteliv pochatkovoi shkoly do roboty z ditmy, yaki zaznaly simeinoho nasylstva : avtoref. [Formation of professional readiness of future primary school teachers to work with children who have experienced domestic violence]*. Kandydat nauk. Natsionalnyi pedahohichnyi universytet im. M. P. Drahomanova, [in Ukrainian].

Cherednyk, L.M., 2020. *Formuvannia u maibutnikh uchyteliv hotovnosti do tolerantnoho vykhovannia molodshykh shkoliariv [Formation of future teachers' readiness for tolerant education of junior schoolchildren]*. Kandydat nauk. Berdianskyi derzhavnyi pedahohichnyi universytet, [in Ukrainian].

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ПЕДАГОГІЧНІ УМОВИ ФОРМУВАННЯ У МАЙБУТНІХ УЧИТЕЛІВ ГОТОВНОСТІ ДО ТОЛЕРАНТНОГО ВИХОВАННЯ МОЛОДШИХ ШКОЛЯРІВ

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Реферат:

Актуальність: необхідність визначення педагогічних умов формування у майбутніх учителів готовності до толерантного виховання молодших школярів обумовлена процесами глобалізації, євроінтеграції та реформування сучасної початкової школи, що окреслюють рамки освітнього простору, побудованого на утвердженні людини як найбільшої соціальної цінності, засадах гуманізму, дитиноцентризму й толерантності, та вимагають від педагога готовності до діалогу шляхом встановлення з молодшими школярами відносин довіри, співпраці, компромісу, радості, товариськості, емпатії та психологічного комфорту.

Мета: на основі аналізу психолого-педагогічного доробку сучасних педагогів визначити педагогічні умови формування у майбутніх учителів готовності до толерантного виховання молодших школярів.

Методи: теоретичні: аналізу, синтезу, теоретичного узагальнення.

Результати: на основі узагальнення результатів аналізу психолого-педагогічних джерел педагогічні умови підготовки майбутніх учителів до толерантного виховання молодших школярів визначено як сукупність сприятливих факторів, що забезпечує ефективну реалізацію моделі формування у майбутніх учителів готовності до толерантного виховання молодших школярів.

Висновки: виокремлено педагогічні умови формування у майбутніх учителів готовності до толерантного виховання молодших школярів: педагогічний консенсус щодо орієнтації на толерантне виховання, відображення у змісті професійної підготовки основних засад толерантного виховання, упровадження контекстного навчання та квазіпрофесійних ситуацій.

Ключові слова: *педагогічні умови, підготовка майбутніх педагогів, толерантне виховання, готовність до толерант-ного виховання, початкова школа.*

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SMART-COMPLEX IN THE VOCATIONAL TRAINING OF A MODERN TEACHER

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Abstract.

Relevance. The transformation and development of modern information technologies (IT) have affected the educational process of all educational institutions, which makes it necessary to justify the application of numerous pedagogical innovations using IT in the vocational training of future teachers. This makes developing important for future educators to understand the SMART-complex as a component of the information education environment, since in order to develop the SMART-complex, the teacher must understand its` structure and the interaction of all components.

Purpose: to highlight and characterize the main elements of the SMART-complex as an educational information environment of an educational institution, to prove the advisability of their use in the training of future teachers.

Methods: direct analysis and synthesis are for substantiating the relevance of the problem, that is under consideration; deduction is for identifying the main structural elements of the SMART-complex, modelling is for the image of the structural appearance of the SMART-complex, generalization is for taking the stock of the work.

Results: the emergence of the concept of the SMART-complex and some elements of its structural type were analysed; the existing SMART-complex models were described and generalized and their main structural elements were defined; the need to introduce SMART-complex as a component of the information education environment was noted.

Conclusions: SMART-complex is an information dynamic system of educational and methodological direction with defined SMART-criteria (specific, measurable, attainable, relevant, time-bound), with static, dynamic and environmental components; SMART-cloud resource is a system for personalized delivery and processing of electronic content; services (e.g., cloud-based electronic storage) for handling documents, spread sheets, electronic presentations; video-web conferencing for creation of electronic questionnaires, tests; application of this resource allows to organise both general and individual work with the content, in fact SMART-cloud resource is a «core» of SMART-complex; available SMART-complexes correspond to the modern educational needs in the context of fulfilling the tasks of the New Ukrainian School and can be used in the training of future teachers.

Keywords: *SMART-complex, informational educational environment, concept of SMART-complex, SMART-textbook, intellectual learning, components of SMART-complex.*

Introduction. A concept of a "SMART-complex" has appeared relatively recently in Ukrainian pedagogical science. This term was coined by the scientists of the Institute of Vocational and Technical Education of The National Academy of Educational Sciences of Ukraine, and a structural type of SMART-complex in the information environment of the educational institution was proposed. However,

the world community knows these complexes are known as "smart" learning environments. Of course, SMART-complexes use a whole range of digital technologies to support educational activities and innovative methods of creating of the educational environment.

At the moment information technologies (IT) are being actively changed, improved and introduced into the educational process of all educational institutions. Therefore we consider it necessary to give teachers a basic understanding of main elements of the structural type of SMART-complex as a component of the informational and educational environment. For qualitative development of the complex it is necessary to fully understand the need to use a certain component. Considering the fact that the informational educational environment and the smart environments are receiving increasing attention of the research community, there are certain problems with terminology (How is "smart" learning different from the traditional one? What is the structure of a reasonable learning environment?). Equally important are the standards that smart environments must meet, since having a reference model we can draw conclusions about the quality of a work one or another environment and the innovation of subsequent developments in that direction.

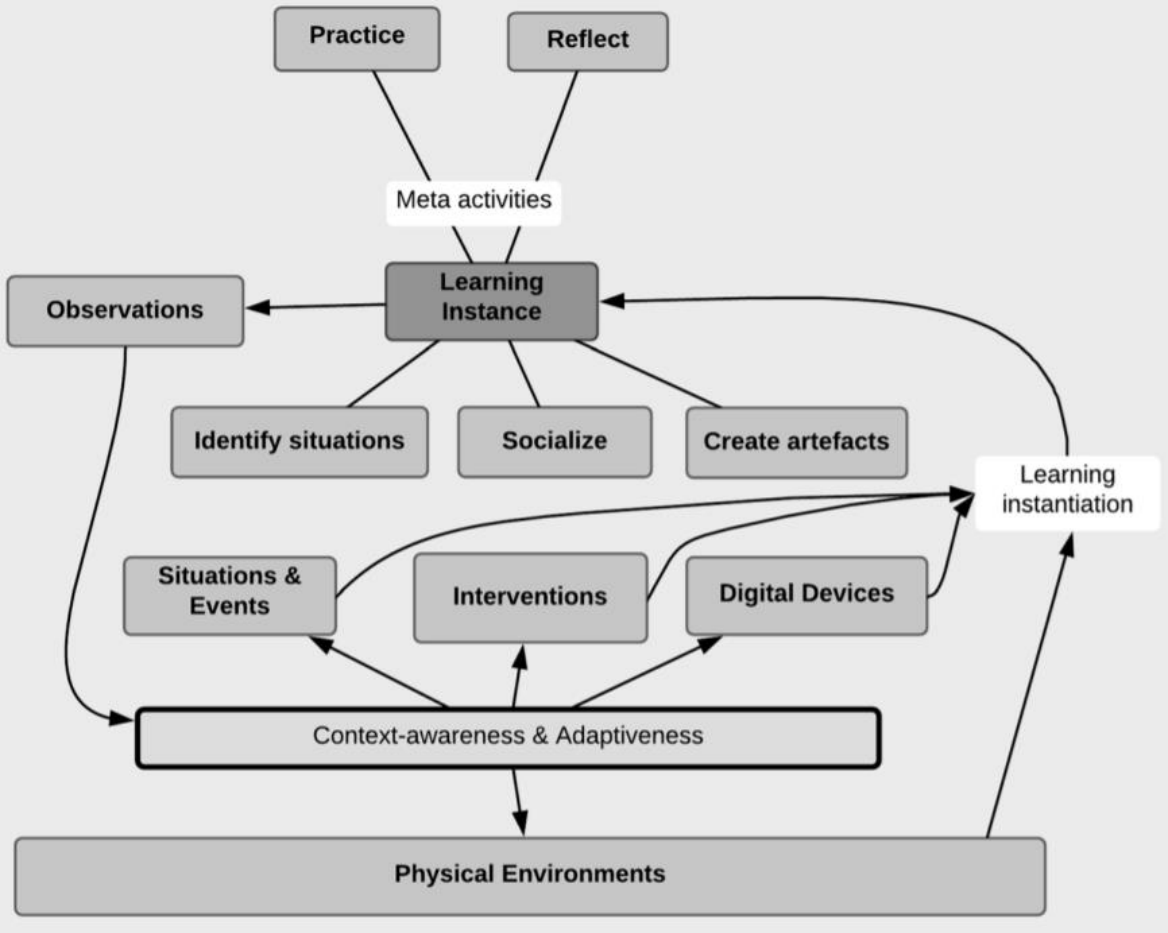
References. IT technologies in the structure of education have been studied by Lapinskyi V. V., Kademiia M. Yu., Makarenko L. L., Miziuk V. A., Morze N. V., Pryhodii M. A. The information environment issues and systems have been researched by Bazelyuk O. V., Bakhmat N. V., Kartashova L. A., Lytvynova S. H., Smyrnova I.M., Plish I. V., Yashanov S. M. The structure of SMART-complex has been analyzed by national scientists (Bykov V. Yu. Voloshyna T. V. Hurzhii A. M. Hlazunova O. H. Kononenko A. H. Lypska L. V. Pinchuk O. P. Pryhodii M. A. Spirin O. M.), and foreign scientists (T. El, J. Mason, R. Koper, etc.). Ukrainian researchers (O. Hurzhii, A. Zuieva, A. Kononenko, L. Lypska, O. Prokhorchuk, M. Pryhodii) have also developed a model of SMART-complex as a component of the informational educational environment of the institution of professional (vocational-technical) education. However, the individual components of this model require some refinement. After analysing the works of famous Ukrainian scientists and researchers V. Bykov (2020), A. Hurzhii (2018), I. Smyrnova (2020), S. Yashanov (2019), A. Kononenko (2020), L. Makarenko (2020), M. Pryhodii (2020) and others in developing the information educational environment and electronic educational resources, we have come to the conclusion, considering the need for modern teachers to perform many functions simultaneously, the simplest model of SMART-complex should be created. The task of scientists is to optimize SMART-complexes on educational needs as much as possible and to justify their use in professional training of future educators.

The purpose of the article is to highlight and characterize the main elements of the SMART-complex as an educational information environment of an educational institution, to prove their usefulness in the training of future teachers.

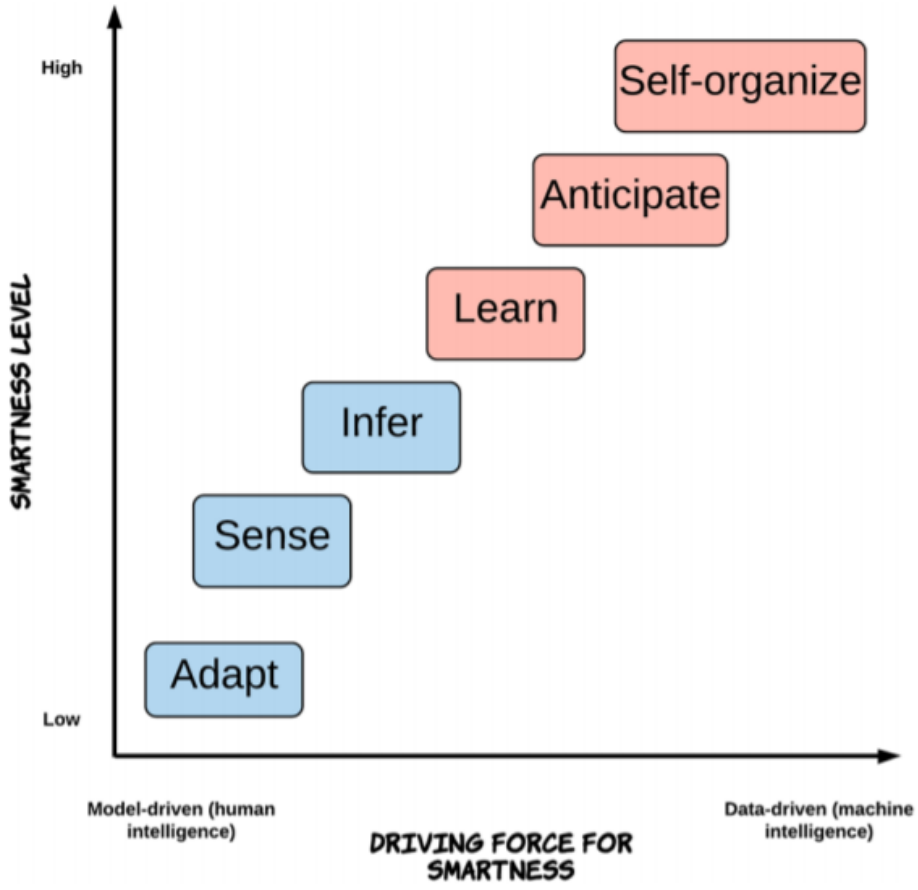
Methods: direct analysis and synthesis are for substantiating the relevance of the problem that is under consideration; deduction is for identifying the main structural elements of the SMART-complex, modelling is for the image of the structural appearance of the SMART-complex; generalization is for taking the stock of the work.

Results and discussion. Digital education is implemented in the following areas: accessibility of technologies for pupils, teachers, administrators, educational Internet, multimedia-digital content, digital competence, literacy of teachers and pupils (Bazeliuk, 2018; Bykov, Spirin and Pinchuk, 2020; Yershov, 2019). The reform and development of the informational and educational space in Ukraine requires the deliberate development of a modern information and educational environment of higher education institutions, pedagogical and balanced design and use of computer-based methodical teaching systems, as well as corresponding improvements in the system of training and further training of pedagogical, scientific and educational personnel and managers (Bykov, Spirin and Pinchuk, 2020, p.28).

At present the world standards for SMART-complex design have not been developed yet. Scientists have been working in this direction but the work is far from being completed, because SMART-technology is a new form of interaction. Furthermore, it is constantly progressing. In 2018, Tore Hoel and Jon Mason (2018, p.11) researched intellectual learning and digital standardization. Their analysis shows that for both areas of analysis – research of intellectual learning and ITLET standardization – the conceptual development that establishes grounds to guide and encourage further development of the technology is necessary. They developed two models, a basic model of intelligent learning processes (Drawing 1) and a model of the characteristics of the environment in which intelligent learning takes place (Drawing 2).



Drawing 1. Hoel and Mason Intelligent Environment Reference Model



Drawing 2. Driving forces for different levels of reasonableness in the Human Learning Interface System (Hoel, Mason, 2018)

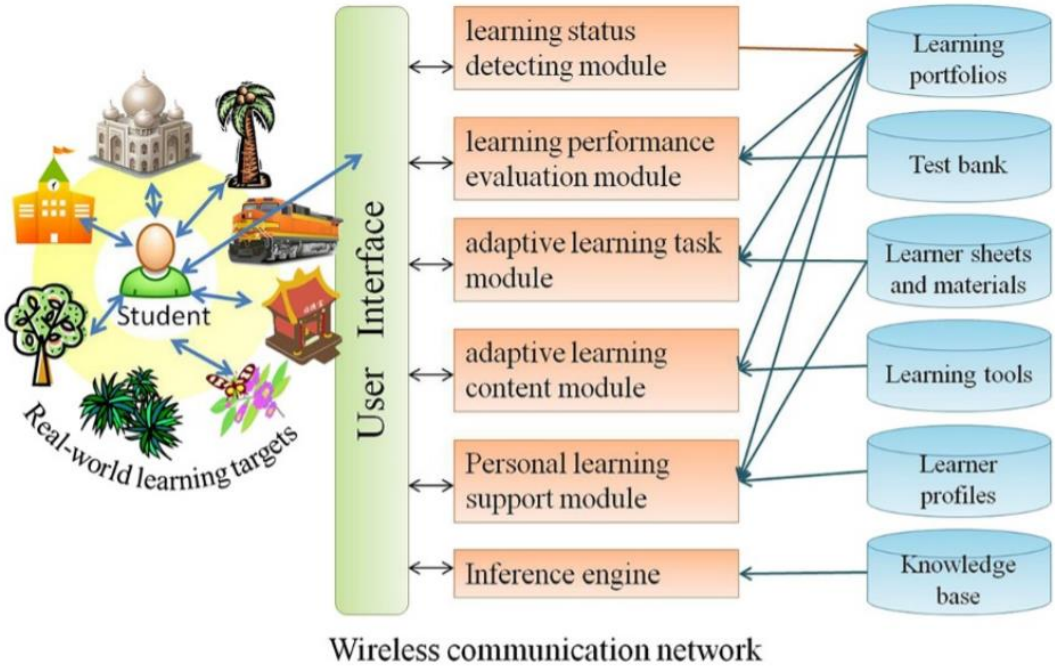
Scientists have developed a basic reference model for a reasonable learning environment, based on the Koper concept introduced in 2014. The elements of the model can be described as follows: learning instance, i.e. a key element to be studied in the Human Learning Interface System is a unit of learning, involving the main activities represented in the learning and available through the Human Learning Interface System. A learning instance is created by introducing from the physical environment and other contextual influential factors, for example, the teacher defines the tasks and goals, sets the event, etc.; the teacher does the actions implying the use of digital devices. In order for the training to take place, the student must identify the situation (objectives, objectives of the training, schedule, etc.); the student must interact with other students, directly or indirectly; the student must create results for the translation of knowledge; the student must perform meta-activity through practice and reflexion.

The sensors of the intelligent educational environment monitor every activity of the subject; observations revert back to a context and adaptability mechanism that regulates input factors for subsequent learning. The conceptual work on intelligent learning was complemented by laboratory work on setting up and testing reasonable solutions in the classroom.

Research has shown that the more sophisticated Human Learning Interface Systems are, the more difficult it is to identify pedagogical practices, examples of used technologies and recognized standardization issues. One explanation for this observation is that the development of new learning technologies and new practices is a dynamic phenomenon.

The model presented in Drawing 2 describes the driving forces of smartness in a smart learning environment and the corresponding levels of smartness. Systems, that can adapt, feel and infer what is happening in a training scenario can also be based on human intelligence in real time, as well as on a system recorded as metadata ontology, student models, learning structure, etc. Systems begin to learn and take action without any human control, and then organize themselves and act as an independent agent in the learning scenario, and the system tends to be based on machine intelligence and run on big data. The model in drawing 2 complements their basic model. Although the first model describes how learning begins, the new model describes how learning environments are created – the context of learning and expected accomplishments (Hoel, Mason, 2018).

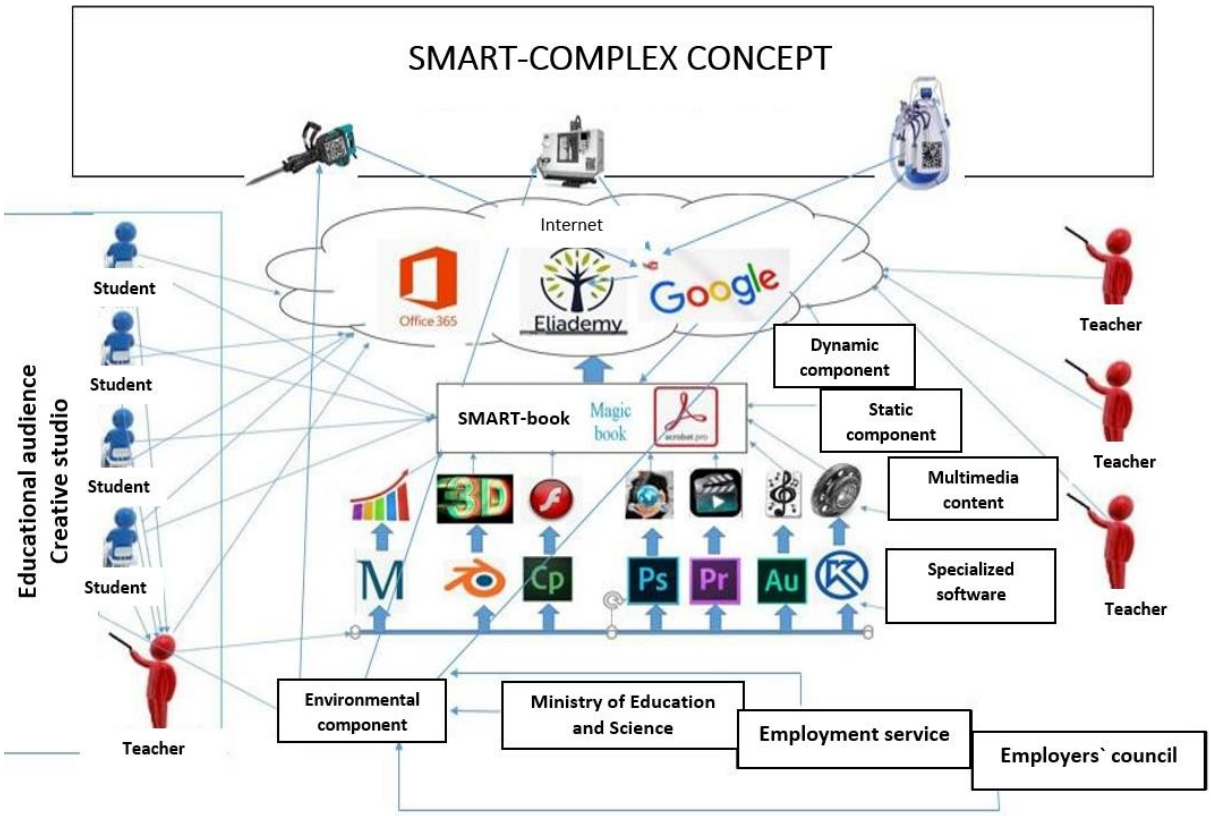
Gwo-Jen Hwang (2014) developed the concept of the structure of the intelligent learning environment.



Drawing 3. Structure of the Gwo-Jen Hwang SMART learning complex

The scientist notes that SMART-complexes for learning are defined as minimally contextually dependent (only on the Internet and in the real world the state of learners' learning is considered as a context of learning), minimally adaptive (i.e., adaptive to emotional states, while cognitive abilities, motivation, socio-economic factors are not taken into account) and minimally personalized (i.e., pedagogical oriented guidance is not used) (Hwang, 2018).

Certain Ukrainian scientists (Lypska, 2019, p.12) define the SMART-complex as a complex information dynamic system of educational and methodological direction, corresponding to SMART-criteria, which provides holistic information about the educational subject with the possibility of rapid access to educational content and a rapid assessment of training activities by participants in the training process. Principles of SMART-complex system: interactivity, adaptability, and openness. It has a static, dynamic and ecological component and is distributed according to standard modules, which include a learning management system (LMS – learning management system), educational content, authoring tools (authoring tools), delivery system, the system of training and evaluation of educational applicants and participants (Drawing4) (Lypska, 2019, p.13).



Drawing 4. SMART-complex concept

Learning management system (LMS) is a system that manages educational activities. The scope of the system is the development, management and dissemination of online training material, providing access to multiple users at the same time. The most famous LMS are: iSpring Online, Blackboard Learning System, Moodle, Adobe Captivate Prime, Google Classroom, etc. In the case of these systems, they also serve as a shell through which a user can access training programmes and courses. An advantage for the administrator in this case, thanks to this option, is the possibility to carry out operational control of the educational process in general (Miziuk, 2020, p.32).

Massive Open Online Courses (MOOC) are becoming more and more popular all over the world. The main advantages of these courses for the users are that they are free of charge, provided remotely and at the same time allow improvement of the program through such segments as intermediate tasks, tests, and final certification. Time limits and deadlines are set for the completion of tasks and courses, and it certainly motivates and further serves as a qualitative organization of the educational process. Now it is not the teacher who controls the process, but the student who will understand that if the task is not completed in time at one stage, they will have to start all over again. Quality platforms and pioneers of the sector are EdEra and Prometheus, which are well-known in our country. Among foreign platforms, it is worth mentioning Coursera, EdX, Udemyand Canvas Network (osvita.ua, 2020).

Authoring tools used in the development of educational content serve to create authentic educational materials. To the final educational product can be defined such forms as screen capture, electronic textbooks, course editors, questionnaires, presentations (and all for their creation), simulators, video trainings, tools for online seminars and tests. These development materials are available on the Learning

Management System (LMS) platforms (The Best Learning Management Systems, 2020).

Scientists classify components of a SMART-complex into static and dynamic ones. Electronic textbooks are the most appropriate form for information that time has little or no influence upon. This is because they do not have time-dependent variables that can be updated according to scientific discoveries, research, and mainstream trends in the theoretical framework. Such content is called static or fixed component. The optimal content of an electronic textbook (based on the principle of the static component) can include, first of all, axioms, proven theorems and other information with the characteristics of a scientific constant. The second function of the electronic textbook should be offline access and options of the SMART-complex (if there is no internet connection) (Yashanov, 2019, p.43).

Cloud technologies and services, systems for distance learning online are considered to be the optimal way to provide the dynamic component. Alternative platforms for dynamically variable information content can be groups, chat rooms, pages in social media, specialized sites, etc. These platforms allow you to promptly submit and update information, to work with participants of the educational process according to the principle of «in-time» (Hurzhii, 2018, p.202).

The main objective of the environmental component is to transform the educational environment into a synergistic system using SMART-complexes. For this purpose developers and participants (moderators, administrators) of the educational process need to create a friendly environment for creation and introduction of innovations. Innovations will not only arise, but also cause public resonance, motivation for application and improvement, development (Smyrnova, 2017, p.291).

The structure of SMART-complex has the option of installing SMART-textbooks and SMART-modules. SMART-textbook is an Internet application that contains media files – graphics, videos, sound and text files, animation, 3D models, and anchor links. This type of electronic textbook contains the built-in option to be installed and synchronized with the platform – SMART-cloud resource and allows complementing the main content with educational SMART-modules (Kartashova, 2018, p.196).

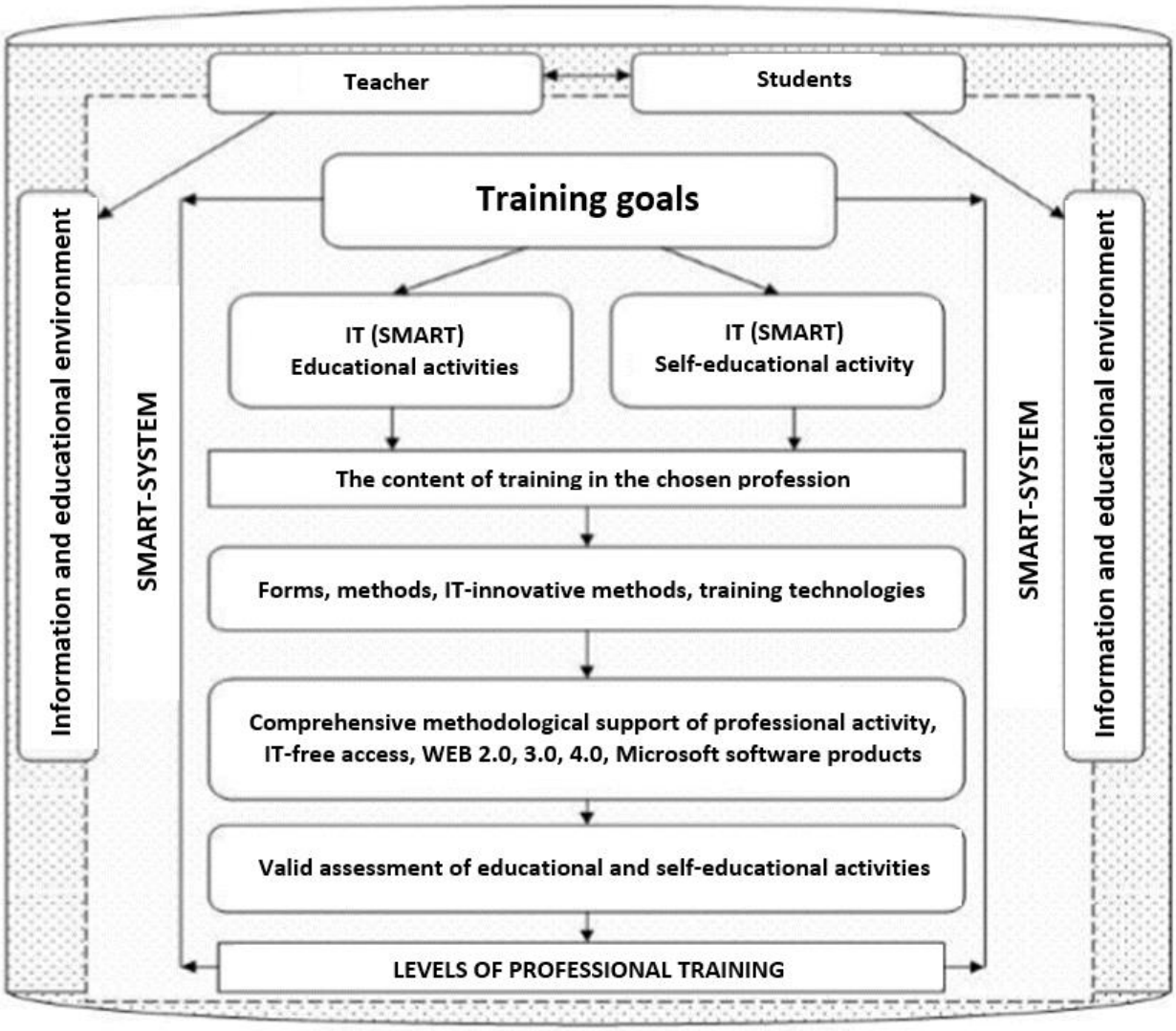
The SMART- module is a holistic electronic content that displays a learning theme divided into subthemes. Like a SMART-textbook, it allows you to use different media files. The difference from the textbook (but not always) is the availability of navigation by sub-themes, time scale, test questions and links to other sections of the SMART-complex in the modules (Makarenko, 2013, p.102).

Such scientists as Bykov V.Yu. (2020), Pryhodii (2020), Kononenko A.H. (2020) developed the structure of the SMART-complex methodological system and found that the application of SMART-complexes in the methodological system of modern information and education technologies implies the identification and implementation of regularities, SMART-complex systems related to the interior IT-infrastructure, improvement of the IT knowledge and skills of the teacher (personal and professional qualities), improvement of the information culture of pupils and students, formation of a clear matrix of the knowledge system, skills, personal professional skills. The scientists have carried out a comprehensive description of the components, the regularity of the external relations of the system in the corresponding educational (educational-professional) environment (Pryhodii, 2020, p.111), on the basis of which the components in the educational environment of the educational institution have been developed:

- IT-subject component is a methodical system for the training of stundents, with the likely presence of components of different numbers depending on the class, the school profile and the level of the student; and these components can be at different levels of hierarchy and in different relationships;
- IT-locality – this methodological system should be developed taking into account the specifics of the region;
- IT-dynamism reflects the changes and development of SMART-components as a methodological system, depending on the demands of the labour market, society and the demands for innovation in education and science;
- IT-integrity implies the property of the components of the SMART-complex to have a clear purpose, place and related functions that serve the overall purpose of the IT-structure;
- structure is an important criterion for the evaluation and functioning of the SMART-complex methodological system, since it determines its effectiveness by analysing the properties of its structure and methods of validating evaluation;
- IT-focus is intended to be specific during the educational process and to be able to improve certain elements without disrupting the functioning of the SMART-complex;
- SMART-interdependence of the SMART-complex and the information and educational

environment (the formation and development of the SMART-complex as a component of the methodological system takes place in interaction with the information and educational environment of the educational institution) (Kononenko, 2020, p.39).

The process of using SMART-complexes in the methodological system of modern information and education technologies is considered as complex pedagogical education with IT dynamic component, which is a set of interrelated components: objectives, forms, content, innovative methods, IT-technologies, comprehensive methodological support of vocational training, valid evaluation, self-educational activities of pupils and students (Drawing 5).



Drawing 5. Structure of the methodological system using the SMART-complex by Kononenko (2020, p. 40)

In our opinion this structure is useful for the development and design of SMART-complexes also for educational institutions.

Conclusions. SMART-complex is an information dynamic system of educational and methodological direction with defined SMART-criteria (specific, measurable, attainable, time-bound), with static, dynamic and ecological components. SMART-cloud resource is a system for personalized delivery and processing of electronic content; services (e.g. cloud-based electronic storage); working with documents, spread sheets, electronic presentations; videoconferences; for creating electronic questionnaires, tests. Thus, by using this resource, it is possible to organise both general and individual work with the content, because in fact SMART-cloud resource is a "core" of SMART-complex.

After analysing the available concepts and models for information educational environments and SMART-complexes, we have come to the conclusion that they successfully meet modern educational needs in the context of the implementation of the tasks of the New Ukrainian School and can be recommended to use in the course of secondary school teacher training.

List of references

Базелюк, О., 2018. Зміст і структура цифрової культури педагогічних працівників закладів професійної освіти. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка*, 16, с. 81-87. DOI: http://doi.org/10.32835/2223-5752.2018.16.81-87.

Биков, В. Ю., Спірін, О. М. та Пінчук, О. П., 2020. Сучасні завдання цифрової трансформації освіти. *Вісник Кафедри ЮНЕСКО «Неперервна професійна освіта XXI століття»*, [online] 1, с. 27-36/ Доступно: https://www.unesco-journal.com.ua/index.php/journal/article/view/7/6 [Дата звернення 01 Травень 2021].

Гуржій, А. М., Глазунова, О. Г. та Волошина, Т. В., 2018. Використання хмарних електронних ресурсів і сервісів у навчанні ІТ-фахівців. В: *Modern achievements of science and educations: XIII International conference. Netaniya, Israel, 6-13 September, 2018*. Хмельницький: б. в, [online] с. 202. Доступно: http://elar.khnu.km.ua/jspui/bitstream/123456789/6643/1/MASE-2018.pdf#page=203 [Дата звернення 11 Травень 2021].

Єршов М. О., 2019. Сучасні проблеми формування цифрової компетентності учнів у закладах загальної середньої освіти. В: *Інформаційно-цифровий простір України: трансформаційні процеси і перспективи розвитку. Матеріали методологічного семінару НАПН України*. 4 квітня 2019 р. / За ред. В.Г. Кременя, О.І. Ляшенка; укл. А.В. Яцишин, О.М.Соколюк, с. 79-85.

Карташова, Л. А., Бахмат, Н. В. та Пліш, І. В., 2018. Розвиток цифрової компетентності педагога в інформаційно-освітньому середовищі закладу загальної середньої освіти. *Інформаційні технології і засоби навчання*, [online] 68 (6), с.193-205. Доступно: https://core.ac.uk/download/pdf/162002579.pdf [Дата звернення 12 Травень 2021].

Кононенко, А. Г. та Масліч, С. В., 2020. Використання SMART- комплексів у методичній системі сучасних інформаційно-освітніх технологій. *Освіта та педагогічна наука,* 1 (173), с. 37-46. DOI: https://doi.org/10.12958/2227-2747-2020-1(173)-37-46 [Дата звернення 11 Травень 2021].

Липська, Л. В., Зуєва, А. Б. та Прохорчук, О. М., 2019. Методичні рекомендації з розроблення SMART-комплексів для професійної підготовки кваліфікованих робітників будівельної галузі. Житомир: «Полісся».

Макаренко, Л. Л. та Шпильовий, Ю. В., 2020. Особливості застосування технологій комп'ютерного моделювання при вивченні дисциплін інформатичного циклу майбутніми педагогами професійного навчання. *Науковий часопис Національного педагогічного університету імені М. П. Драгоманова. Серія 5 : Педагогічні науки : реалії та перспективи : зб. наук. Праць,* 75 (т.1), с. 125-131. DOI: https://doi.org/10.31392/NPU-nc.series5.2020.75.27.

Освіта.ua, 2020. Популярні платформи онлайн-курсів (MOOC), [online] (Останнє оновлення 29 Жовтень 2013) Доступно: http://osvita.ua/abroad/higher_school/distance-learning/37601/ [Дата звернення 11 Травень 2021].

Пригодій, М. та Криворот, Т., 2020. Використання мережевих навчально-методичних комплексів у фаховій підготовці майбутніх викладачів. *Професійна педагогіка,* [online] *1*(20), pp.109-117. DOI: https://doi.org/10.32835/2707-3092.2020.20.109-117

Смирнова, І.М., 2017. Розроблення електронних освітніх ресурсів як складової інформаційного освітнього середовища навчального закладу. В: *Науково-методичне забезпечення професійної освіти і навчання: збірник матеіалів XI всеукраїнської науково-практичної конференції (звітної), присвяченої 25-річчю НАПН України. К. : ІПТО НАПН України*., с. 290-292, [online] Доступно: https://www.ivet.edu.ua/images/docx/Thesis_18_04_17.pdf#page=290 [Дата звернення 11 Травень 2021].

Яшанов, С. та Дзус, С., 2019. Розвиток дидактичних принципів у системі інформатичної підготовки учителя технологій при використанні технологій комп'ютерного моделювання. *Освітній дискурс: збірник наукових праць,* 11 (3), с. 41-53

Hoel, T. and Mason, J., 2018. Standards for smart education – towards a development framework. *Smart Learning Environments,* [online] 5 (3). DOI: https://doi.org/10.1186/s40561-018-0052-3 [Дата звернення 11 Травень 2021].

Hwang, GJ., 2014. Definition, framework and research issues of smart learning environments – a context-aware ubiquitous learning perspective. *Smart Learning Environments.* 1, 4. https://doi.org/10.1186/s40561-014-0004-5

Makarenko, L., Slabko, V., Kononenko, A., Musorina, M. and Smyrnova, I., 2020. Pedagogical aspects of ensuring the efficiency of education of Applicants of higher education institutions of Ukraine in the process of research of technical disciplines. *Journal of Critical Reviews, 7* (13), p.116-118.

Miziuk, V., Gumennykova, T., Pankovets, V., Liapa, M., Gramatyk, N. and Drahiieva, L., 2020. Applying Instructional Design Methods to Improve the Effectiveness of Blended-Learning. *International Journal of Management*, 11 (5), pp. 31-42.

Elearning Industry, 2020. The Best Learning Management Systems (2020 Update), [online] Ailable at: https://elearningindustry.com/the-best-learning-management-systems-top-list [Дата звернення 11 Травень 2021].

Translated & Transliterated

Bazeliuk, O., 2018. Zmist i struktura tsyfrovoi kultury pedahohichnykh pratsivnykiv zakladiv profesiinoi osvity [Content and structure of digital culture of VET institutions' teachers]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPS Ukrainy. Profesiina pedahohika [Scientific herald of the Institute of vocational education and training of NAES Ukraine. Professional Pedagogy],* 16, s. 81-87. DOI: http://doi.org/10.32835/2223-5752.2018.16.81-87, [in Ukrainian].

Bykov, V. Yu., Spirin, O. M. ta Pinchuk, O. P., 2020. Suchasni zavdannia tsyfrovoi transformatsii osvity [Modern problems of digital transformation of education]. *Visnyk Kafedry YuNESKO «Neperervna profesiina osvita KhKhI stolittia»* [*Bulletin of the UNESCO Chair "Continuing Professional Education of the XXI Century"*], [online] 1, s. 27-36/ Dostupno: https://www.unesco-journal.com.ua/index.php/journal/article/view/7/6 [Data zvernennia 01 Traven 2021].

Hurzhii, A. M., Hlazunova, O. H. ta Voloshyna, T. V., 2018. Vykorystannia khmarnykh elektronnykh resursiv i servisiv u navchanni IT-fakhivtsiv [The use of cloud electronic resources and services in the training of IT professionals]. V: *Modern achievements of science and educations: XIII International conference*. Netaniya, Israel, 6-13 September, 2018. Khmelnytskyi: b. v, [online] s. 202. Dostupno: http://elar.khnu.km.ua/jspui/bitstream/123456789/6643/1/MASE-2018.pdf#page=203 [Data zvernennia 11 Traven 2021].

Yershov, M.-O., 2019. Suchasni problemy formuvannia tsyfrovoi kompetentnosti uchniv u zakladakh zahalnoi serednoi osvity [Modern problems of formation of digital competence of students in general secondary education institutions]. V: Informatsiino-tsyfrovyi osvitnii prostir Ukrainy: transformatsiini protsesy i perspektyvy rozvytku [Information and digital educational space of Ukraine: transformation processes and prospects of development]. Materialy metodolohichnoho seminaru NAPN Ukrainy. 4 kvitnia 2019 r. / Za red. V.H. Kremenia, O.I. Liashenka; ukl. A.V. Yatsyshyn, O.M. Sokoliuk, s. 79-85, [in Ukrainian].

Kartashova, L. A., Bakhmat, N. V. ta Plish, I. V., 2018. Rozvytok tsyfrovoi kompetentnosti pedahoha v informatsiino-osvitnomu seredovyshchi zakladu zahalnoi serednoi osvity [Development of digital competence of the teacher in the information and educational environment of general secondary education]. *Informatsiini tekhnolohii i zasoby navchannia* [Information Technologies and Learning Tools], [online] 68 (6), s.193-205. Dostupno: https://core.ac.uk/download/pdf/162002579.pdf [Data zvernennia 12 Traven 2021].

Kononenko, A. H. ta Maslich, S. V., 2020. Vykorystannia SMART- kompleksiv u metodychnii systemi suchasnykh informatsiino-osvitnikh tekhnolohii [The use of SMART-complexes in the methodological system of modern information and educational technologies]. *Osvita ta pedahohichna nauka [Education and pedagogical science]*, 1 (173), s. 37-46. DOI: https://doi.org/10.12958/2227-2747-2020-1(173)-37-46 [Data zvernennia 11 Traven 2021].

Lypska, L. V., Zuieva, A. B. ta Prokhorchuk, O. M., 2019. *Metodychni rekomendatsii z rozroblennia SMART-kompleksiv dlia profesiinoi pidhotovky kvalifikovanykh robitnykiv budivelnoi haluzi [Methodical recommendations for the development of SMART-complexes for the training of skilled workers in the construction industry]*. Zhytomyr: «Polissia».

Makarenko, L. L. ta Shpylovyi, Yu. V., 2020. Osoblyvosti zastosuvannia tekhnolohii kompiuternoho modeliuvannia pry vyvchenni dystsyplin informatychnoho tsyklu maibutnimy pedahohamy profesiinoho navchannia [Features of the application of computer modeling technologies in the study of computer science disciplines by future teachers of vocational training]. *Naukovyi chasopys Natsionalnoho pedahohichnoho universytetu imeni M. P. Drahomanova. Seriia 5 : Pedahohichni nauky : realii ta perspektyvy : zb. nauk. prats [Scientific journal of the National Pedagogical University named after Drahomanov. Series 5: Pedagogical*

sciences: realities and prospects: coll. Science. wash.], 75 (t.1), s. 125-131. DOI: https://doi.org/10.31392/NPU-nc.series5.2020.75.27.

Osvita.ua, 2020. *Populiarni platformy onlain-kursiv (MOOC)*, [online] (Ostannie onovlennia 29 Zhovten 2013) Dostupno: http://osvita.ua/abroad/higher_school/distance-learning/37601/ [Data zvernennia 11 Traven 2021].

Pryhodii, M. ta Kryvorot, T., 2020. Vykorystannia merezhevykh navchalno-metodychnykh kompleksiv u fakhovii pidhotovtsi maibutnikh vykladachiv. *Profesiina pedahohika [Professional pedagogy]*, [online] 1(20), rr.109-117. DOI: https://doi.org/10.32835/2707-3092.2020.20.109-117

Smyrnova, I.M., 2017. Rozroblennia elektronnykh osvitnikh resursiv yak skladovoi informatsiinoho osvitnoho seredovyshcha navchalnoho zakladu [The use of network educational and methodological complexes in the professional training of future teachers]. V: *Naukovo-metodychne zabezpechennia profesiinoi osvity i navchannia: zbirnyk mateialiv XI vseukrainskoi naukovo-praktychnoi konferentsii (zvitnoi), prysviachenoi 25-richchiu NAPN Ukrainy*. K. : IPTO NAPN Ukrainy., s. 290-292, [online] Dostupno: https://www.ivet.edu.ua/images/docx/Thesis_18_04_17.pdf#page=290 [Data zvernennia 11 Traven 2021].

Yashanov, S. ta Dzus, S., 2019. Rozvytok dydaktychnykh pryntsypiv u systemi informatychnoi pidhotovky uchytelia tekhnolohii pry vykorystanni tekhnolohii kompiuternoho modeliuvannia [Development of didactic principles in the system of information training of technology teachers using computer modeling technologies]. *Osvitnii dyskurs: zbirnyk naukovykh prats [Educational discourse: a collection of scientific papers]*, 11 (3), s. 41-53

Hoel, T. and Mason, J., 2018. Standards for smart education – towards a development framework. Smart Learning Environments, [online] 5 (3). DOI: https://doi.org/10.1186/s40561-018-0052-3 [Data zvernennia 11 Traven 2021].

Hwang, GJ., 2014. Definition, framework and research issues of smart learning environments – a context-aware ubiquitous learning perspective. *Smart Learning Environments*, 1, 4. https://doi.org/10.1186/s40561-014-0004-5

Makarenko, L., Slabko, V., Kononenko, A., Musorina, M. and Smyrnova, I., 2020. Pedagogical aspects of ensuring the efficiency of education of Applicants of higher education institutions of Ukraine in the process of research of technical disciplines. *Journal of Critical Reviews*, 7 (13), p.116-118.

Miziuk, V., Gumennykova, T., Pankovets, V., Liapa, M., Gramatyk, N. and Drahiieva, L., 2020. Applying Instructional Design Methods to Improve the Effectiveness of Blended-Learning. *International Journal of Management*, 11 (5), rr. 31-42.

Elearning Industry, 2020. The Best Learning Management Systems (2020 Update), [online] Ailable at: https://elearningindustry.com/the-best-learning-management-systems-top-list [Data zvernennia 11 Traven 2021].

УДК 37:004.4SMART

SMART-КОМПЛЕКС У ПРОФЕСІЙНІЙ ПІДГОТОВЦІ СУЧАСНОГО ВЧИТЕЛЯ

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Реферат:

*Актуальність. Т*рансформація та розвиток сучасних інформаційних технологій (ІТ) вплинули на освітній процес у всіх закладах освіти, що зумовлює необхідність обґрунтування доцільності застосування численних педагогічних інновацій із використанням ІТ у професійній підготовці майбутніх учителів. Це актуалізує

важливість формування у майбутніх педагогів розуміння SMART-комплексу як складової інформаційного освітнього середовища, оскільки для якісного розроблення SMART-комплексу вчителю потрібно розуміти його структуру та взаємодію всіх компонентів.

Мета: виокремити й охарактеризувати основні елементи SMART-комплексу як складової інформаційного освітнього середовища закладу освіти, довести доцільність їх використання у процесі підготовки майбутніх учителів.

Методи: прямий аналіз та синтез – для обґрунтування актуальності проблеми, що розглядається, дедукція – для виявлення основних структурних елементів SMART-комплексу, моделювання – для зображення структурного вигляду SMART-комплексу, узагальнення – для підведення підсумків роботи.

Результати: проаналізовано виникнення поняття SMART-комплексу та деяких елементів його структурного вигляду; охарактеризовано й узагальнено існуючі моделі SMART-комплексів та визначено їхні основні структурні елементи; наголошено на необхідності впровадження SMART-комплексів як складової інформаційного освітнього середовища закладу освіти.

Висновки: SMART-комплекс – це інформаційна динамічна система навчально-методичного спрямування з певними SMART-критеріями (specific, measurable, attainable, relevant, time-bound), зі статичною, динамічною та середовищною складовими; SMART-хмарний ресурс – це система персоналізованої доставки та опрацювання електронного контенту; сервіси (наприклад, хмарне електронне сховище) для роботи з документами, електронними таблицями, електронними презентаціями; відео-вебконференції для створення електронних опитувальників, тестів; застосування цього ресурсу дає змогу організовувати як спільну, так і індивідуальну роботу з контентом, адже фактично SMART-хмарний ресурс – це «ядро» SMART-комплексу; наявні SMART-комплекси відповідають сучасним потребам освіти в контексті виконання завдань Нової української школи і можуть використовуватися у процесі підготовки майбутніх учителів.

Ключові слова: *SMART-комплекс, інформаційне освітнє середовище, концепт SMART-комплексу, SMART-підручник, інтелектуальне навчання, компоненти SMART-комплексу.*

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USE OF HANDS-ON WORKSHOPS AS AN INTERACTIVE TOOL FOR DEVELOPING TEACHERS' COMMUNICATIVE COMPETENCE

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Abstract:

Relevance. In the conditions of digitalization for teachers of service colleges, communicative competence appears as a core characteristic of their professional activity, as it provides readiness for cooperation and interaction of pedagogical workers and students, determines the effectiveness of students' general, professional and professional competencies.

Purpose: to identify and analyze the main aspects of the development of communicative competence, to clarify the level of development of communicative competence of teachers of service colleges, to develop a workshop program for its practical development in teaching staff in the intercourse.

Methods: analysis, synthesis, logical generalization, classification and systematization of empirical data and scientific and methodological literature on the development of communicative competence, retrospective analysis of own experience.

Conclusions: the practical aspects of development of communicative competence of pedagogical workers of colleges of service sphere in the intercourse period of advanced training taking into account the specified structural and semantic components are substantiated; empirical results of research of level of development of communicative competence of pedagogical workers of colleges of sphere of services in the intercourse period of advanced training are analyzed; the program of workshops for development of communicative competence of pedagogical workers of colleges of sphere of services in the intercourse period of advanced training is concluded.

Keywords: *college, teacher, communication, competence, workshop, communicative competence, intercourse training period.*

Introduction. At the present stage of innovative formation of Ukrainian society, characterized by the implementation of trends of humanization, diversification, digitalization, European integration processes, etc., the skill of man to design and implement effective communicative interaction becomes especially important. "In the theory of communication, as noted by L. Basil, argued two conceptual positions of the role of language: the transmission of speech messages and directing the activities of the interlocutor; three types of communication: communication-informing, communication for the exchange of information, communication-influence and its components, namely: the way of presenting information, strategy and tactics of speech behavior of partners. It is on the basis of moderate and timely application of properly selected communication techniques and techniques that a person manages to establish a constructive relationship with government officials, partners, subordinates, customers and more. At the same time, ill-

considered use of communication techniques, excessive use of direct and indirect manipulative techniques can spoil the established communicative interaction between the subjects of communication (Basil, 2021). Supporting the opinion of many scholars, we emphasize that communicative competence is a core characteristic of the professional activity of teachers of vocational education institutions. In the humanistic-oriented educational environment of the college in the field of services, both teachers and students are creative subjects, creative individuals. Disclosure of creative potential of the future specialist, actualization of his individual abilities and needs for self-improvement, in our opinion, should be the leading value of modern professional higher education, and its purpose would be to provide holistic development of the applicant's personality, not only training a specialist, flexibly navigate and act effectively in market conditions. To achieve this goal, pedagogical staff of service colleges need to acquire a high level of communicative competence, which will allow them not only to prevent and / or solve barriers to constructive and creative interaction, but also to promote productive pedagogical communication. Study of pedagogical experience of teachers of Bila Tserkva College of Service and Design, Vyacheslav Chornovil Galician College, Dubna College of Culture and Arts, College of Kyiv National University of Technology and Design, Lviv Cooperative College of Economics and Law, Technological College of National University «Lviv Polytechnic» – technical College, Kharkiv College of Textiles and Design and analysis of educational practice of training future service professionals in these institutions, shows that the communication of many teachers has negative characteristics (evaluative color of speech, desire for intellectual and positional dominance, egocentrism and categorical reasoning, reluctance criticism, secrecy and indifference to current issues of professional higher education, improving the training of service professionals, etc.). In this regard, we found a contradiction that needs to be urgently addressed and arises between the social requirements for the professional activities of teachers in colleges of services, the core component of which is communicative competence, and the real state of development of this integrative quality in teachers, especially in the intercourse period Certification training.

Sources. The source base for solving the scientific problem of development of communicative competence of pedagogical workers of colleges in the field of services in the intercourse training period were: legal documents: Law of Ukraine "On Education", "On Professional Higher Education", "Conceptual Principles of Pedagogical Education in Ukraine and its integration into the European educational space ", the Concept" New Ukrainian school ", etc .; psychological and pedagogical research in which the essential characteristics of pedagogical interaction are revealed (I. Androschuk, I. Bekha, A. Boyko, O. Bodalyova, L. Vygotsky, N. Guziy, I. Zyazyun, V. Kan-Kalik, O. Merzlyakova, O. Fediy and others); publications on the content and structure of pedagogical communication and communicative competence (L. Bazil, N. Bibik, L. Biryuk, N. Butenko, N. Volkova, Y. Vtornikova, E. Goloborodko, G. Degtyareva, A. Kapska, S. Levchenko, A. Molchanova, L. Petrovska, O. Savchenko, G. Sagach, O. Semenog, V. Sidorenko, etc.); works in which the technologies of development of communicative skills and formation of communicative culture of teachers (L. Aukhadeeva, G. Bushuyeva, O. Gavrilyuk, N. Gez, A. Dubakova, T. Ladyzhenska, M. Lazareva, L. Matsko, O. Ovcharuk are covered , V. Sadova and others); materials of pedagogical experience of teachers of Vyacheslav Chornovil Galician College, College of Kyiv National University of Technology and Design, Technological College of Lviv Polytechnic National University, Kharkiv College of Textiles and Design, available from the information content of the official websites of the institutions.

The purpose of the article is to determine the levels of development of communicative competence of teachers of colleges in the field of services, to develop a program of workshops for its practical development in pedagogical staff in the intercourse period of professional development.

To achieve this goal it was necessary to perform the following tasks: to analyze the state of development of the problem of communicative competence of pedagogical staff of service colleges and clarify its essential characteristics to determine the main aspects of improving the solution of the scientific problem; to find out the initial level of development of communicative competence of pedagogical workers of colleges in the field of services; to develop a practical program of workshops for the development of communicative competence of pedagogical staff of service colleges in the intercourse period of professional development.

Methods. To perform the tasks and achieve the goal provided the use of research methods, including: theoretical - study and analysis of theoretical research, scientific and methodological literature on the theory and methodology of communicative com-

petence, classification and systematization of theoretical and practical data, deduction, comparative analysis, forecasting possible forms and methods of developing communicative competence; empirical: study of advanced pedagogical experience, pedagogical observation of professional activity of teachers, surveys, testing, conversations with teachers of professional disciplines and masters of industrial training, retrospective analysis of own experience, methods of mathematical statistics for processing experimental results.

Results and discussion. In solving the scientific problem of the development of communicative competence of pedagogical staff of service colleges in the intercourse period of professional development, it was necessary to clarify its essential characteristics. To this end, based on the analysis of scientific papers, synthesis and logical generalization, several conceptual and ideological approaches to understanding the essence of the studied quality were systematized. In the field of psychology, communicative competence is positioned as a complex of personal qualities, communicative abilities, skills, knowledge that allow solving communicative problems, in accordance with ethical and moral norms and laws of public life, to establish effective contacts with other interlocutors. At the same time O. Bodalov (2002) rightly notes that in order to ensure effective interaction and mutual compatibility of individuals, it is necessary that the phenomena of identification, decentration, empathy and reflection are revealed in communication. L. Petrovska's (1998) opinion on the differentiation in the communicative competence of operational-technical (behavioral) and personal-semantic aspects is important. Following N. Kazarinova, in the structure of communicative competence of pedagogical workers of colleges in the field of services we distinguish, first, the ability of a person to plan the situation of interpersonal communication, as well as to predict different options for its deployment; secondly, communicative and executive skills (the ability to choose a strategy of behavior in accordance with the theme of communication and implement a communicative idea); third, the ability to identify the communicative potential of the interlocutor. For college teachers with a high level of development of communicative competence, their psychological attitude to productive communicative interaction is important.

According to G.M. Andreeva (1980), if the structural and semantic content of communicative competence is considered through the prism of the psychological structure of communication, which includes perceptual, communicative and interactive aspects, it can be considered a component of communication. Then the communicative process should be understood as «informational process between people as active subjects, taking into account the relations between partners» (Korniyaka, 2013). According to the scientific research of M. Vinogradsky (2009), in the structural and semantic content of communicative competence should distinguish the following components: knowledge of the rules of communication, mastery of speech, etiquette formulas. At the same time, N. Gez (2013) to the important components of the structure of the studied education includes: the ability to compare language tools with tasks, conditions of communication; understanding the relationship between communicators. But O. Arshavska, exploring the content and structure of communicative competence, its main structural components position the language and social competence, which, in our opinion, are part of the structure of any activity (Saganets, 2016).

The study of scientific research shows that most researchers in the structure of communicative competence distinguish: the ability to successfully interact with the environment, through understanding themselves and others under the constant change of mental states, interpersonal relationships, social environment; value orientation in various communication situations, based on the knowledge and life experience of the individual; adequate human orientation in oneself - one's own psychological potential, partner's potential, situation; willingness and ability to communicate with people; internal (psychophysiological) means of regulation of communicative actions; knowledge, skills and abilities of constructive communication; internal (individual-personal) resources needed to build an effective communicative action in a certain range of situations of interpersonal interaction (Volkova, 2006; Isser, 2008; Kohut, 2015; Lazarev, 2009; Sidorenko, 2015).

Scientific research is of research, in which the main structural components of communicative competence are defined as language, speech and sociolinguistic competence (Biryuk, 2004; Semenog, 2013; Sidorenko, 2018). At the same time, the position of M. Argyle on the separation of such structural components of the studied formation as social sensitivity (accuracy of interpersonal perception) is relevant; basic interaction skills; skills of approval and encouragement that are inherent in all social situations (ie the ability to provide positive feedback to communication partners); balance, calm, harmony in spite of social anxiety.

Based on the results of theoretical analysis of scientific papers and taking into account practical experience, we believe that effective communication with students of higher education can teachers with a clear attitude to interaction and perception of positive qualities of each student, which helps to reveal their personal potential during communication. Thus, the emphasis in the structure of communicative competence is placed on cognitive processes. This means that the communicative competence of the teacher of the college in the field of services should include a certain way organized cognitive processes and emotional (affective) sphere, ie the structural and semantic components of the studied quality should also include the ability to understand and overcome communication barriers that may arise, for example, subject to misunderstanding (or partial understanding of the essence of the communication situation), due to different views, visions (social, political, religious, professional). Barriers to communication can also be psychological in nature, reflecting the individual psychological characteristics of teachers and students of higher education, their established relationship: from friendship to hostility towards each other.

Thus, based on the study of scientific papers and extrapolation of the results of logical generalization of conceptual ideas of domestic and foreign scientists in the structure of communicative competence of pedagogical staff of service colleges, we distinguish four main components: cognitive (cognitive), communicative-speech, and social-perceptual.

Within the limits of research search, according to the specified structure, levels of development of communicative competence of pedagogical workers of colleges of service sphere were established. Based on the analysis and interpretation of empirical data, it was found that the levels of development of the studied quality differ by subtypes of professional activity of teachers, which is graphically visualized in table 1. Indicators of the development of communicative competence of respondents, by specialization are visualized in Fig.1.

Table 1.

Levels of development of communicative competence by groups of respondents

Group of respondents	Levels of formation of communicative competence		
	high	average	low
Teachers of special disciplines	71%,	18%	11%
Teachers of general education courses	34%	64%	22%
Masters of industrial training	17%	45%	38%
Other pedagogical workers	39%	48%	23%

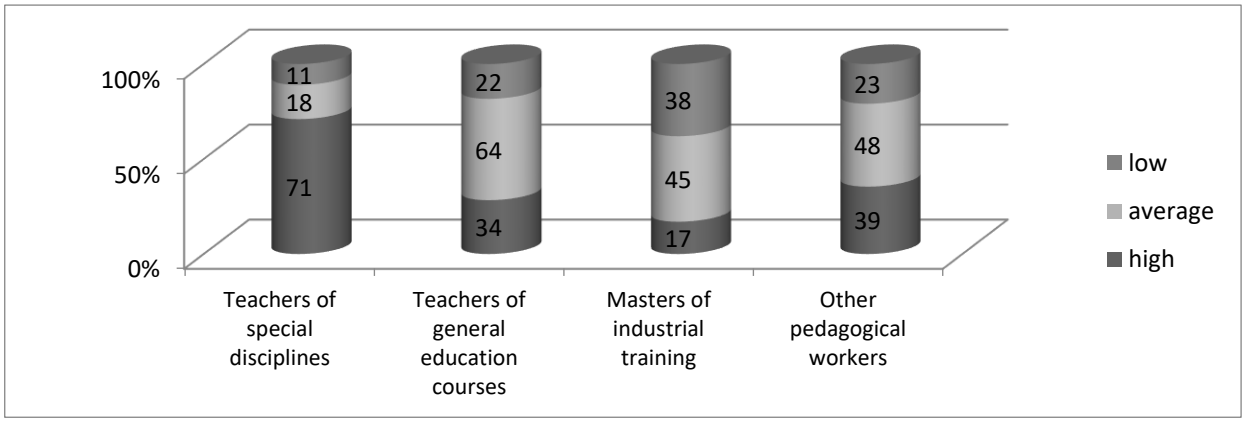

Fig.1 Indicators of the development of communicative competence in teachers depending on specialization

In order to implement a practice-oriented process of developing the communicative competence of pedagogical staff of service colleges in the intercourse period of professional development, we have developed appropriate pedagogical technology, specified by the program of workshops held within four practical platforms (see Fig. 2).

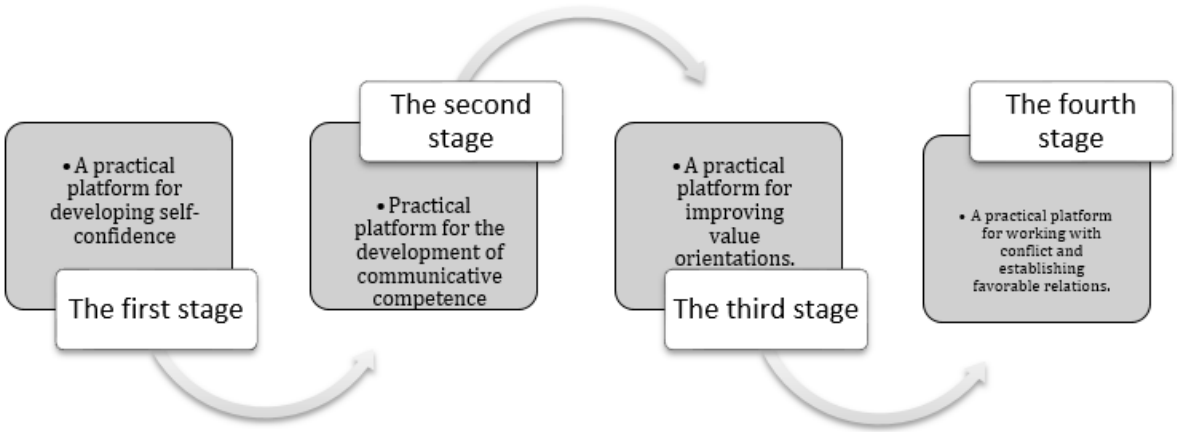

Fig. 2. The structure of pedagogical technology for the development of communicative competence of pedagogical staff of service colleges

The pedagogical technology of development of communicative competence of pedagogical workers of colleges in the field of services in the intercourse period of advanced training provides carrying out of practical workshops on four practical platforms within four practical stages. In particular, the first stage: «Practical platform for the development of self-confidence» is implemented on the basis of workshops on the topic: «How to become confident and learn to enjoy life?» (3 years). The purpose of the stage: emotional unification of group members, self-esteem adjustment, development of confidence in pedagogical staff of service colleges as one of the components of communicative competence. Increasing individual and personal significance, self-esteem. The main content of the workshop is formed by psychotechnical exercises aimed at developing confidence, assertiveness, presentation of information material on the relevance of the development of communicative competence of pedagogical staff of colleges in the field of services.

The second stage of pedagogical technology for the development of communicative competence of pedagogical staff of colleges in the field of services is implemented within the practical platform for the development of their communicative qualities. At this stage, workshops are held on the topic: «Development of communicative qualities of pedagogical staff of service colleges.» The purpose of the stage is to intensify the process of development of communication skills, increase the motivation of self-education and self-development, self-knowledge.

The third stage: «Practical platform for improving value orientations" involves conducting workshops on the topic: «The influence of value orientations of the teacher on the formation of the student's personality». The purpose of the stage is focused on increasing self-understanding in order to consolidate self-esteem and actualization of personal resources. To achieve this goal, it is proposed to perform consolidation exercises to improve the value orientations of pedagogical staff of service colleges.

The fourth stage of pedagogical technology for the development of communicative competence of pedagogical staff of service colleges: on the basis of a workshop on the topic: «Conflict in the professional activities of teachers of colleges in the field of services». The purpose of the stage: analysis of conflict situations, reduction of communication barriers, development of strategies for overcoming conflict situations.

The system-forming link of the workshops is a complex mechanism for the development of communicative qualities of pedagogical staff of service colleges in the intercourse period of professional development. This is facilitated by a carefully designed structural and content of each lesson, in particular, clearly defined target guidelines, didactic content, activities of participants, specially selected interactive exercises and games, psychological tools to optimize the development of communicative competence of teachers of service colleges. We emphasize that the structure of each lesson includes the following types of group activity: activating exercises, information block, correction block, recommendation block, reflective block, which is a kind of «feedback». An obligatory element of the course of classes during exercises, playing games, solving problematic communicative situations is the discussion of acquired experience, communicative knowledge, skills of pedagogical and interpersonal communication in the group of subjects. This contributes to the awareness, assimilation and integration of the experience of communicative interaction of pedagogical

staff of service colleges with different types of communicators. Note that individual stages and blocks of classes during the workshops can be duplicated to consolidate communication skills and improve communication skills. At the same time during the workshops, there is an influence not only from the coach, but also the interaction between the participants. At the same time, during the exercises the facilitator focuses on its predicted (expected) end result: change in the state of the group as a whole; change in the state of each pedagogical worker. At the beginning and end of each workshop it is necessary to perform practical exercises that help participants to relieve fatigue, create conditions for emotional relief. The plan of the program of workshops for pedagogical workers of colleges in the field of services «Development of communicative competence of pedagogical workers» developed by us is presented in table 2, and the program is schematically visualized after the table.

Table 2

Workshop program plan for college teachers
«Development of communicative competence of teachers»

№	Platform	The name of the workshop	The name of the workshop
1.	A practical platform for developing self-confidence	Workshop «How to become confident and start enjoying life»	Relieving tension, establishing contact, creating a psychological climate of trust and cohesion. Mutual presentation of participants, acquaintance with the coach. Acquaintance with people, their interests. Development of skills and abilities to work in a psychological group. Diagnosis of self-confidence, the ability to speak in front of an audience. Consolidation of psychological atmosphere and activity, practical development of self-confidence, increase of self-esteem.
2.	Practical platform for the development of communicative competence	Workshop «Development of communicative qualities of a teacher as effective components of communicative competence»	Relieving tension, establishing contact, creating a psychological climate of trust and cohesion. Mutual presentation of participants, acquaintance with the coach. Acquaintance with people, their interests. Development of skills and abilities to work in a psychological group. Diagnosis of self-confidence, the ability to speak in front of an audience. Consolidation of psychological atmosphere and activity, practical development of self-confidence, increase of self-esteem.
3.	Practical platform for the formation of value orientations	Workshop «Development of communicative qualities of a teacher as effective components of communicative competence»	Formation of the ability to understand their feelings, values. Expanding and updating knowledge about value orientations, the ability to choose the right values. Use of interactive practical exercises, relaxation exercises.
4.	Practical platform for working with conflict and establishing favorable relations	Workshop «Development of communicative qualities of a teacher as effective components of communicative competence»	Working with conflict, developing individual ways out of conflict situations

Practical platform for developing self-confidence Workshop 1 «How to become confident and start enjoying life» (table 3).

Purpose: to develop self-confidence in teachers as one of the components of communicative competence. *Demonstration material*: multimedia presentation, thematic video files. *Equipment:* PC, speakers, flash drive, flipchart, screen, projector. *Material resources*: diagnostic techniques, mirror, printouts. *Target audience*: teachers, masters of industrial training. *Time*: 3 hours.

Table 3

Workshop plan «How to become confident and start enjoying life»

№	Type of work	Purpose:	Time
1.	Practical exercise to activate «I do this»	To activate participants, to promote creation of the positive atmosphere, comfort in group, to develop communicative qualities	10 min
2.	Introductory speech of the speaker.	Provide information about the purpose of the event, the speaker's motivation to hold it, to activate the participants to work	10 min.
3.	Practical exercise – Associative series «Confidence»	Practically define the concept of confidence, justify its characteristics	20 min
4.	Practical exercise – «Brainstorming» «Characteristics of an insecure and confident person»	Identify the differences between a person's confidence and insecurity, understand how it affects his life	20 min
5	Information block «Differences between confident and insecure personality»	Provide information about the distinctive characteristics of a confident and insecure person, explain how insecurity affects a person's life	10 min
6	Diagnostic unit. - Method of determining the level of confidence. - Method of «Determining the manifestations of insecurity in everyday life»	Determine the level of confidence and its manifestations in the workshop participants	60 min
7	Practical exercise «Reflection»	To activate participants, to promote emotional relief, to form self-confidence, to increase the level of self-esteem	30 min
8	Practical exercise «Autotraining on assertiveness»	Emotionally relax participants, promote emotional relief, develop self-confidence, increase self-esteem	20 min
9	Recommendation block Practical recommendations	Provide practical advice on situations of developing teachers' confidence in real life	15 min
10	Fitback workshop. Reflection - Complete the sentence «Today I…»	Contribute to summarizing the lesson, reflection	15 min

Practical platform for the development of communicative competence Workshop 2. «Development of communicative qualities of a teacher as effective components of communicative competence» (table 4).

Purpose: development of communicative competence in teachers as one of the components of communicative competence. *Demonstration material*: multimedia presentation, thematic video files. *Equipment:* PC, speakers, flash drive, flipchart, screen, projector. *Material resources*: diagnostic techniques, forms «palms», printouts, Whatmans, picture, markers. *Target audience*: teachers with low levels of assertiveness, self-esteem, communication skills. *Time*: 3 hours.

Table 4

Workshop plan «Development of communicative qualities of a teacher as effective components of communicative competence»

№	Type of work	Purpose:	Time
1.	Practical exercise to activate the «Interview».	To activate the participants, to promote the creation of a positive atmosphere, comfort in the group	10 min
2.	Introductory speech of the speaker.	Provide information about the purpose of the event, the speaker's motivation to hold it, to activate the participants to work	5 min
3.	Practical exercise – «Brainstorming" "The concept of communication»	Practically define the concept of communication, justify its characteristics	15 min
4.	Practical exercise «Sayings»	Identify the main criteria of pedagogical communication, understand how it affects her life	30 min
5	Information block «Professional pedagogical communication»	Provide information about professional pedagogical communication, its concepts, components	10 хв.
6	Practical exercise Openwork saw «Styles of pedagogical communication»	To activate the participants, to determine practically the main characteristics of the proposed styles of pedagogical communication	25 min
7	Diagnostic block "Models (styles) of lecture communication" (MI Yusupov's technique)	Determine which model of lecture communication is used by the workshop participants	20 min
8	Practical exercise «Gossip».	Emotionally relax participants, promote emotional relief, form communicative communicativeness	15 min
9	Communication Barriers Information Block	Provide information on communication barriers that prevent people from communicating effectively.	5 min
10	Practical exercise Conflict situations during communication	Playing situations of pedagogical communication, to develop communicative competence	10 min
11	Correctional block «Psychological recommendations»	Provide practical recommendations for successful and correct performance of the teacher in front of the audience	5 min
12	Practical exercise «Decipher» (work with the screen)	Practically develop non-verbal communication skills	10 min
13	Practical exercise «Repeat movements»	Practically develop non-verbal communication skills	10 min
14	Recommendation block «Rules of pedagogical communication»	Provide practical recommendations on the rules of pedagogical communication	5 min
15	Fitback workshop. Reflection. Exercise «Emotions of animals».	Contribute to summarizing the lesson, reflection	5 min

Practical platform for improving value orientations Workshop 3. «The influence of teacher value orientations on the formation of the student's personality» (table 5). *Purpose*: to improve the value orientations of teachers as a component of communicative competence. *Demonstration material*: multimedia presentation, thematic video files. *Equipment*: PC, speakers, flash drive, flipchart, screen, projector. *Material resources*: diagnostic techniques, printouts, «value» forms, forms for. *Target audience*: teachers, masters of industrial training. *Time*: 3 hours.

Table 5

Workshop plan «The influence of teacher value orientations on the formation of the student's personality»

№	Type of work	Purpose:	Time
1.	Activation video viewing exercise.	To activate the participants, to promote the creation of a positive atmosphere, comfort in the group	5 min
2.	Introductory speech.	Provide information about the purpose of the event, the speaker's motivation to hold it, to activate the participants to work	5 min
3.	Butterfly activation exercise parable.	To activate participants, to motivate participants to the value of life	10 min
4.	Information block «Value orientations»	Provide information on the values and value orientations of young people	10 min
5.	Practical exercise – «Brainstorming» «What life values do you know?»	Practically understand the basic life values of man, understand how they affect his life	30 min
6.	Diagnostic unit. Methodology «Value orientations»	Determine the value orientations of the workshop participants	40 min
7.	Practical exercise-video «The guy with the box»	To activate the participants, to form in them the right life values	5 min
8.	Information block Results of this questionnaire for students	To acquaint the audience with the value orientations of college students	10 min
9.	Exercise «Success or failureЯ»	To acquaint the audience with the value orientations of college students	20 min
10.	Information block «Principles of organization of highly productive influence of the master teacher»	Provide information on the principles of the teacher's influence on the formation of value orientations in students	10 min
11.	Practical exercise-video «Life values»	To activate participants, to promote creation of the positive atmosphere, comfort in group to motivate participants to value of life	5 min
12.	Recommendation block. Practical exercise. Brainstorming «Ways of the teacher's influence on the formation of student's value orientations»	Actively identify and provide practical recommendations for the influence of the teacher on the formation of value orientations of the student	20 min
13.	Feedback workshop Practical exercise Reflection «Spider Web»	Contribute to summarizing the lesson, reflection	10 min

Practical platform for working with conflict and establishing favorable relations Workshop 4. «Conflict in the professional activities of teachers» (table 6).

Purpose: to acquaint the audience with the types and causes of conflicts that arise during training, educational process, development of teachers' skills of conflict-free communication, ability to constructively overcome a contradictory situation, formation of skills to find ways to resolve conflict situations. *Demonstration material*: multimedia presentation, thematic video files. *Material resources*: diagnostic techniques, table napkins. *Target audience*: teachers, masters of industrial training. *Time*: 3 hours.

Table 6

Workshop plan «Conflict in the professional activities of teachers»

№	Type of work	Purpose:	Time
1.	Practical work-activating video «Matches»	To activate the participants, to motivate them to resolve misunderstandings without conflict	10 min
2.	Introductory speech of the speaker.	To activate the participants, to motivate them to resolve misunderstandings without conflict	10 min
3.	Practical exercise «Snowflakes»	To activate the participants, to motivate them to choose different ways of resolving the conflict	20 min
4.	Practical exercise Openwork saw Types of pedagogical conflicts	Practically identify the types of pedagogical conflicts, sharing experiences	20 min
5.	Information block Causes of conflicts	Provide information on the causes of conflicts	10 min
6.	Practical exercise-viewing of the activating video «Causes of pedagogical conflicts»	To activate participants, to form in them the correct understanding of the reasons of conflicts of their professional activity to give the information on the reasons of conflicts	10 min
7.	Practical exercise "Squeeze your fist"	Contribute to emotional uplift, practically identify ways for participants to resolve conflicts	20 min.
8.	Diagnostic unit. Conflict Resolution Strategies Methodology	Introduce conflict resolution strategies to attendees	40 min
9.	Recommendation block Tips «Stages of conflict resolution»	Provide practical advice on how to resolve the conflict	10 min
10.	Information block. The use of styles of overcoming the conflict situation in pedagogical activities	To acquaint the audience with the value orientations of college students	10 min
11.	Recommendation block. such recommendations for conflict-free communication (Dale Carnegie)	Provide practical advice on conflict-free communication	10 min
12.	Fitback workshops Practical exercise Reflection «Snow»	Contribute to summarizing the lesson, reflection	10 min

Conclusions. The article highlights the main aspects of the development of communicative competence, identifies the components of this competence (ability to successfully interact with others; orientation in various communication situations; adequate human orientation; willingness and ability to build contacts with people; internal means of regulating communicative actions; knowledge, skills and skills of constructive communication, internal resources needed to build effective communicative action). The results of the research of the level of communicative competence of pedagogical staff of colleges are described. In order to develop the communicative competence of college teachers, a program of workshops was designed. The purpose of the program of workshops for teachers «Development of

communicative competence of teachers» was to emotionally unite group members, intensify the process of developing communication skills, adjust self-esteem, increase motivation for self-education and self-development of teachers. During the workshops, such areas of correctional activities were planned and used as working with conflict, reducing communication barriers, developing strategies for overcoming conflict situations, increasing personal significance, self-esteem, and developing confidence. It is expected that the example of the use of such a form of work as workshops for the development of communicative competence will allow to carry out this process more effectively in the conditions of educational institutions.

List of references

Аргайл, М., 2003. *Мастера психологи: Психология счастья*. 2-е изд. СПб: Питер.

Базиль, Л., 2021. Комунікативна діяльність суб'єктів підприємництва: теоретичні і практичні аспекти. В: Радкевич В. О, ред. *Науково-методичне забезпечення професійної освіти і навчання: збірник матеріалів XV звітної Всеукраїнської науково-практичної конференції.* Київ, Україна, 25 Березень 2021. Київ : ІПТО НАПН України, с.26-29.

Бацевич, Ф., 2007. *Словник термінів міжкультурної комунікації.* Київ: Довіра.

Виноградський, М., 2009. *Управління персоналом.* 2-ге вид. Київ: Центр учбової літератури.

Гез, Н., 2013. *Теория обучения иностранным языкам. Лингводидактика и методика.* 7-е изд. Москва. Академия.

Изаренков, Д., 1990. Базисные составляющие коммуникативной компетенции и их формирование на продвинутом этапе обучения студентов-нефилологов. *Русский язык за рубежом*, 4, с. 54-60.

Иссерс, О., 2008. *Коммуникативные стратегии и тактики русской речи.* Москва: УРСС 1, ЛКИ.

Корніяка, О., 2013. Комунікативна компетентність сучасного фахівця – педагога і психолога. *Гуманітарний вісник ДВНЗ «Переяслав-Хмельницький державний педагогічний університет ім. Григорія Сковороди*», 30, с. 544-551.

Саганець, О., 2016. Формування комунікативної компетентності у майбутніх молодших спеціалістів перукарського мистецтва та декоративної косметики як компоненту професійної культури. *Професійна освіта: проблеми і перспективи*. Київ: ІПТО НАПН України, 10, с. 72-77

Фопель, К., 2003. *Эффективный воркшоп. Динамическое обучение*, перевод М. Полякова. Москва. Генезис.

Translated & Transliterated

Argayl, M., 2003. *Mastera psihologi: Psihologiya schastya [Masters of Psychology: The Psychology of Happiness*]. 2-e izd. SPb: Piter, [in Russian].

Bazyl, L., 2021. Komunikatyvna diialnist subiektiv pidpryiemnytstva: teoretychni i praktychni aspekty [Communicative activity of business entities: theoretical and practical aspects]. V: Radkevych V. O, red. *Naukovo-metodychne zabezpechennia profesiinoi osvity i navchannia: zbirnyk materialiv XV zvitnoi Vseukrainskoi naukovo-praktychnoi konferentsii [Scientific and methodological support of vocational education and training: a collection of materials of the XV reporting All-Ukrainian scientific-practical conference*]. Kyiv, Ukraina, 25 Berezen 2021. Kyiv : IPTO NAPN Ukrainy, s.26-29, [in Ukrainian].

Batsevych, F., 2007. *Slovnyk terminiv mizhkulturnoi komunikatsii* [Dictionary of terms of intercultural communication]. Kyiv: Dovira, [in Ukrainian].

Vynohradskyi, M., 2009. *Upravlinnia personalom* [*Personnel management*]. 2-he vyd. Kyiv: Tsentr uchbovoi literatury, [in Ukrainian].

Gez, N., 2013. *Teoriya obucheniya inostrannyim yazyikam. Lingvodidaktika i metodika [Theory of teaching foreign languages. Linguodidactics and Methodology*]. 7-e izd. Moskva: Akademiya, [in Russian].

Issers, O. 2008. *Kommunikativnyie strategii i taktiki russkoy rechi*. *[Communicative strategies and tactics of Russian speech*]. Moskva: URSS 1, LKI, [in Russian].

Izarenkov, D., 1990. Bazisnyie sostavlyayuschie kommunikativnoy kompetentsii i ih formirovanie na prodvinutom etape obucheniya studentov [The basic components of communicative competence and their formation at the advanced stage of student learning.]. *Russkiy yazyik za rubezhom [Russian language abroad*], 4, s. 54-60, [in Russian].

Korniiaka, O., 2013. Komunikatyvna kompetentnist suchasnoho fakhivtsia – pedahoha i psykholoha. [Communicative competence of a modern specialist - teacher and psychologist]. *Humanitarnyi visnyk DVNZ «Pereiaslav-Khmelnytskyi derzhavnyi pedahohichnyi universytet im. Hryhoriia Skovorody» [Humanitarian Bulletin of Pereyaslav-Khmelnytsky State Pedagogical University named after Hryhoriy Skovoroda»*], 30, s.544-551, [in Ukrainian].

Sahanets, O., 2016. Formuvannia komunikatyvnoi kompetentnosti u maibutnikh molodshykh spetsialistiv perukarskoho mystetstva ta dekoratyvnoi kosmetyky yak komponentu profesiinoi kultury [Formation of communicative competence in future junior specialists in hairdressing and make-up as a component of professional culture]. *Profesiina osvita: problemy i perspektyvy [Vocational education: problems and prospects*]. Kyiv: IPTO NAPN Ukrainy, 10, s. 72-77, [in Ukrainian].

Fopel, K. *Effektivnyiy vorkshop. Dinamicheskoe obuchenie [Effective workshop. Dynamic learning]*, perevod M. Polyakova. Moskva. Genezis, [in Russian].

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ВИКОРИСТАННЯ ПРАКТИЧНИХ ВОРКШОПІВ ДЛЯ РОЗВИТКУ КОМУНІКАТИВНОЇ КОМПЕТЕН-ТНОСТІ ПЕДАГОГІЧНИХ ПРАЦІВНИКІВ КОЛЕДЖІВ СФЕРИ ПОСЛУГ

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Реферат:

Актуальність: в умовах діджиталізації для педагогів коледжів сфери послуг комунікативна компетентність постає як стрижнева характеристика їхньої професійної діяльності, оскільки забезпечує готовність до співпраці та взаємодії педагогічних працівників і здобувачів освіти, зумовлює результативність набуття учнівською та студентською молоддю загальноосвітніх, професійних і фахових компетентностей.

Мета: визначення рівнів розвиненості комунікативної компетентності педагогів коледжів сфери послуг, розроблення програми воркшопів для практичного її розвитку в педагогічних працівників у міжкурсовий період підвищення кваліфікації.

Методи: аналіз, синтез, логічне узагальнення, класифікація і систематизація емпіричних даних і науково-методичної літератури *з розвитку комунікативної компетентності, ретроспективний аналіз власного досвіду.*

Результати: конкретизовано структурно-змістові складові комунікативної компетентності педагогів коледжів сфери послуг; обґрунтовано рівні її розвиненості та практичні аспекти розвитку у міжкурсовий період підвищення кваліфікації з урахуванням уточнених структурно-змістових складників.

Висновки: експериментально з'ясовано наявність низького і середнього рівня розвиненості комунікативної компетентності у більшості педагогічних працівників коледжів сфери послуг; укладено

програму воркшопів, що передбачає використання різних видів групової активності, забезпечує взаємодію тренера-фасилітатора та всіх учасників, активізує процес розвитку комунікативних умінь, сприяє корегуванню самооцінки педагогів, підвищенню в них мотивації до самовиховання і саморозвитку.

Ключові слова: *коледж, педагог, комунікація, компетентність, воркшоп, комунікативна компетентність, міжкурсо-вий період підвищення кваліфікації.*

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CREATIVE POTENTIAL OF FUTURE SPECIALISTS IN REPAIRING AND MAINTAINING AUTOMOBILES

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Abstract:

The relevance of the article lies in the contradiction between the growing need of service centres and repair companies for highly qualified and creative engineering staff and the inconsistent views on the nature, content and structure of creative potential of future specialists in repairing and maintaining automobiles, unfavourable conditions for its development in colleges.

The article *aims* to define, specify the content and justify the structure of creative potential of future specialists in repairing and maintaining automobiles.

Research methods include a theoretical analysis of scientific sources – to identify the coverage of the research problem; comparison – to study scientific approaches to solving the research problem; analysis and synthesis – to determine the closest generic and specific characteristics of the phenomenon under study; systematization – to justify its structural components.

Results: the concept of "creative potential of future specialists in repairing and maintaining automobiles" has been defined; its content has been clarified' its structure has been justified; its basic characteristics have been determined.

Conclusions: the concept of "creative potential of future specialists in repairing and maintaining automobiles" is an integrative characteristic that contributes to the success of one's professional activities; this phenomenon is a complex construct with certain components (motivational-axiological, intellectual-creative, cognitive-pragmatist, emotional-volitional and personal-reflexive) and basic characteristics (a synthesis of creative and technical skills; an aptitude for creative technical activities; willingness to discover effective solutions to problems in the field of automobile maintenance, repair, restoration or quality; the ability to systematically combine methodological, theoretical, and polytechnic knowledge; certain personal and professional qualities).

Keywords: *creative potential; future specialists in repairing and maintaining automobiles; content and structure of cre-ative potential.*

Introduction. Scientific and technical progress, globalization and European integration urge one to modernize all spheres of production, service and transport. The motor transport industry is improving rather fast, which is not unexpected. A significant share of all cargo transportation (about 80%) and passenger transportation is conducted by automobile transport. Besides, the number of road vehicles is constantly growing, and the automobile fleet of the country is updated daily with the latest models of Ukrainian and foreign cars. Meanwhile, the premium car service system is growing rapidly, and the latest technologies for diagnosing and repairing engines, chassis, transmission are being introduced. In this regard, service centres and repair companies require highly qualified, professionally mobile, creative engineering staff to handle high-tech equipment. It is this factor that researchers and employers identify as the main reason for the significant backlog of the Ukrainian motor transport industry from advanced automotive countries. Indeed, graduates from pre-higher and higher

education institutions do not yet have sufficient skills to creatively solve problems related to maintenance and repair of modern automobile equipment.

This situation is, first of all, caused by the significant gap between educational content and today's reality. Only for the past decade, the Ukrainian automobile fleet has been updated with vehicles with extremely complex construction and diagnosis and repair technology. The latest models are equipped with economical, powerful, environmentally friendly internal combustion engines. They are mainly assembled with automatic gearboxes, adjustable power steering, complex braking system with a set of active safety devices (electronic brakeforce distribution, dynamic stability control, automatic emergency braking, anti-skid system). Besides, modern automobiles have very complex automation systems: onboard computer, immobilizer, climate control, central locking with decoder. Accordingly, maintenance and repair technologies involve the use of complex technological equipment, lifts, stands, laser and electronic systems, modern computer software.

As one can see, the realities of the motor transport industry significantly increase the requirements for professional training of future specialists in repairing and maintaining automobiles (hereinafter "automobile mechanics") in pre-higher education institutions. It is especially associated with their readiness to provide high-quality services, professionally monitor the mechanical condition of automobiles. This is mostly about the need to teach future automobile mechanics to solve those problems that even their predecessors have never dealt with, strive to obtain and generate the latest information, take initiative and demonstrate technical creativity.

Quite noteworthy are the issues of future automobile mechanics' creativity, innovativity and ability to generate ideas and formulate hypotheses to solve technical problems. This is because "the main purpose of higher professional education is to enable future specialists to become real actors in professional activities and strive for personal and professional self-actualization" (Stadniychuk, 2019, pp. 4-10).

Sources. It was only in the 1990s when Ukrainian researchers of pedagogy and psychology began to use the concept of "creative potential". A theoretical analysis of relevant scientific sources on the research problem shows that there is no consensus view on its definition. Some researchers consider creative potential as a personal construct (Glotova, Korobkova, Moliako, Matiushkin, Salamatova, Sierykov). Meanwhile, Bogoiavlenska, Brushlinskyi, Volkova identify creative potential with one's creative skills. At the same time, Begidova, & Lipilina (2013), Domina (2011), Evinzon (1988), Kravchuk (1992), Murashko (2010), Postaliuk (1989) view creative potential as one's readiness, ability, trait or resource and offer various approaches to understanding its content and structure.

Importantly, Kostenko (2020), Koshuk (2005), Popova (2009) believe creative potential to be an ability or quality of an engineer or a mechanical technician. One should also pay particular attention to Titova's monograph (2019), in which the author proves the need for systematic development of creative potential as a complex personal trait in future agricultural engineers.

The article aims to define, specify the content and justify the structure of creative potential in future specialists in repairing and maintaining automobiles as an integrative personal characteristic.

Research methods include a theoretical analysis of scientific sources – to identify the coverage of the research problem; comparison – to study scientific approaches to solving the research problem; analysis and synthesis – to determine the closest generic and specific characteristics of the phenomenon under study; systematization – to justify its structural components.

Results and discussion. The findings of some relevant studies indicate that creative abilities, skills, as well as other personal and psychological characteristics, can be effectively formed and developed. Together they constitute creative potential as one's ability to act creatively, create something new, discover original methods of solving problems and generate ideas to update and improve the surrounding reality. Mostly, researchers consider the following characteristics as the most important aspects of this personal construct: 1) it is everyone's inherent ability to perform creative activities; 2) it is characterized by one's constant need for creativity, as well as by readiness for creative self-realization; 3) a person with a well-developed creative potential has skills and abilities to identify and address problems, find solutions and implement them into a specific product.

As seen from Table 1, however, the opinions of researchers on the concept of creative potential still vary significantly. This is due to the undeveloped conceptual and terminological tools of modern pedagogical theory, as well as the multifaceted and multidimensional nature of the phenomenon under study. Given that the contextual range of using the term "creative

potential" is quite wide, the article attempts to define this concept based on some relevant studies. It must be noted that a definition of the concept is understood as a logicaloperation that reveals the content of the concept or establishes the meaning of the term that denotes it (Pasko et al., 2004). Besides, the scope of the concept means a set of objects generalized under this concept. Thus, the scope is a class (number) of objects implied by this concept.

Table 1

Researchers' views on the concept of creative potential

Numerical order	Authors	Definition
1	*2*	*3*
1	O. Titova	One's integrative characteristic that is based on genetically (naturally) determined human inclinations and aptitude for technology and technical creativity and enables one to perform innovative engineering activities effectively due to a systematic combination of technical skills, methodological knowledge, personal and professional qualities (creativity; technical intelligence; the ability to combine, find similarities, reconstruct; inspiration; intuition; rich imagination; persistence; independence; determination) and readiness for creative self-realization and self-development (Titova, 2018).
2	S. Begidova, E. Lipilina	1) personal potential: one's resources (intellectual, mental) and abilities manifested in a particular situation; 2) creativity: an attitude expressed in the vision of the problem from a different angle, freedom from stereotypes, openness and focus on non-trivial solutions (Begidova, & Lipilina, 2013).
3	G. Glotova	A natural integrative characteristic, which reflects one's ability to perform creative activities, i.e., actualize one's essential, creative resources in real transformational practice (Glotova, 2005).
4	O. Koshuk	An integrative characteristic, organically inherent in a specialist with flexible, nonlinear thinking and active imagination, who systematically identifies and solves innovative tasks, generate non-standard ideas and follows market needs in engineering and technical activities (Koshuk, 2005).
5	O. Popova	A set of personal traits that reflect the specialist's system-forming ability to actualize essential creative resources in engineering and technical activities (only if they are well-pronounced, complementary and focused on professional-creative activities (Popova, 2009).
6	M. Sosnin	Integration of one's potentials and creative competencies in the manifestation of professional competence, in particular in the field of engineering and construction of technical facilities (Sosnin, 2009).
7	I. Murashko	A capability to create, find something new, act in original and non-standard ways (Murashko, 2010).
8	V. Moliako	One's creative resources and ability to perform creative actions as a whole (Moliako, 2008)
9	Yu. Kulyutkin	One's pursuit of innovation, openness to everything new; independent, original and flexible thinking; the ability to change methods of action quickly and according to new conditions (Kulyutkin, 2001).
10	S. Evinzon	A special characteristic that shows how much one's pragmatist qualities comply with the social norm, required for self-determination as the subject of creativity (Evinzon, 1988).

Table 1 (continued)

1	*2*	*3*
11	N. Postaliuk	An integrative manifestation of one's various parameters and qualities which are characterized both quantitatively and qualitatively; in addition, this ensemble has a multilevel and subordinate structure (worldview, guidelines, knowledge, thinking, volition) (Postaliuk, 1989).
12	P. Kravchuk	A system-forming quality that reflects the relations between all of one's abilities; an integrative phenomenon that synthesizes one's essential creative abilities in real practice and super-relationships (Kravchuk, 1992).
13	Yu. Domina	A systemic characteristic that enables one to create, find something new, unknown to oneself and, as a result, unique (Domina, 2011).
14	O. Glukhovskaya	One's dynamic and integrative characteristic (personal qualities, knowledge, skills, beliefs, attitudes) that determines the need, readiness and capacity for the subject's creative realization and development (Glukhovskaya, 1997).
15	I. Bila	A set of capabilities and tools that can be put into action, used to solve certain problems, achieve goals (Bila, 2014).
16	N. Cherepovska	One's ability to create in general; hidden resources in terms of an intellect (emotional, volitional); a system of psychological qualities that allow one to perform creative actions in the form of producing rational strategies and tactics to create something new (Cherepovska, 2006).
17	T. Amabile	A combination of uniqueness and usefulness (Amabile, 2012).
18	B. Hinton	One's c creative capability and potential (Hinton, 1970).
19	L. Pereira	One's ability to use mental faculties to create something new and useful (Pereira, 1999).
20	J. Plucker, R. Beghetto, G. Dow	The interaction between abilities; the process and environment through which a person or a group of people create a special product that is new and useful to society (Plucker, Beghetto, & Dow, 2004).

In turn, *the content of the concept* is a set of essential characteristics, inherent in the class of objects reflected in this concept. In this case, one should refer to a study by Pasko et al. (2014) which offers an understanding of the scope and content of the concept: "… if one wants to define the scope of the concept, one must answer the question "How many of such objects exist?", and if one's wants to define the content – "What is it?" or "What is it like?" (p. 9).

Finally, it is vital to reveal the rules that one can use to define the concept of *"creative potential of future specialists in repairing and maintaining automobiles"*. They are as follows:

- *a definition must be proportional*; in other words, the scope of the concept being defined must be equal to the scope of the defining concept;
- *a definition should not contain circles:* a circle arises when *dfn* is defined through itself or when in one context *dfd* is defined through *dfn*, and *dfn* through *dfd*;
- *a definition must be clear and concise:* that is, the content and, of course, the scope of the concept must be unambiguous;
- *a definition should not be limited to an objection* (Pasko et al., 2004, pp. 14-15).

Thus, it is necessary to determine the closest generic characteristic and, subsequently, specific characteristics that distinguish the elements of the defined concept's scope from those of the scope of the generic concept (Pasko et al., 2004). It must be noted that the concept of "potential" is a general scientific category that the Great Explanatory Dictionary of the Ukrainian language (2005) interprets as a set of available tools, capabilities, productive forces, resources that can be used in any field.

Interestingly, scholars associate the formation of one's creative potential with both natural and social factors. They claim and, one must agree with this point, that the invariant (invariable) component of creative potential is based on one's natural, inherited

talents, personal qualities (temperament, sensorimotor coordination, sexual characteristics, biogenic needs – genetically determined and conditioned by the natural environment that reflect one's dependence on certain conditions). Naturally, the talent, interest, passion, and love for technical creativity are expressed in each student in different ways. At the same time, methodological knowledge as a tool of creative activity, technical knowledge and skills, creativity, persistence, determination, reflection and other qualities constitute a variant part of future automobile mechanics' creative potential.

The analysis of relevant works related to the concept of one's creative potential show that researchers tend to use the following generic concepts: *readiness* (a wish to do something); *ability* (one can do something, behave in a certain way); *personal trait* (a quality characteristic of someone or something); *personal characteristic* (a description, definition of essential, characteristic features of someone or something); *personal quality* (one or another characteristic feature, trait of someone or something); *personal construct* (something that appeared as a consequence of creative activity, creative process; something that arose as a consequence of certain natural processes); *resource* (a tool, opportunity that can be used if necessary); *means* (some special action that allows one to do or achieve something; a way of doing something) (*Velykyi tlumachnyi slovnyk ukrainskoi movy, 2005).*

Now, it is necessary to determine the closest generic characteristic of the phenomenon under study. Given that *personal construct*, as the broadest of the analyzed concepts, is viewed as a consequence of creative activity, creative process or certain natural processes, one should first define a feature included in the set of personal construct's objects. Second, *personal trait* (partially) includes *"personal quality"*. In other words, it is a concept of partial coincidence (scopes partially coincide) (see Fig. 1). Third, *"resource", "means" and "ability"* cannot, as generic features, reflect the full range of features of such a complex and multifaceted concept.

In this regard, the closest generic feature of *the "future automobile mechanics' creative potential" concept*, as rightly noted by Titova (2019), Koshuk (2005), Glukhovskaya (1997), should be *an integrative personal characteristic* (integrative: 1) it refers to integration (the combining of two or more parts into a whole), unifying; 2) continuous, cohesive (Bilodid, 1973, p. 35).

It is essential to justify the main specific characteristic of the studied concept which distinguishes the elements of its scope from those of other similar characteristics of the specialist's personality. In this case, one can agree with Titova (2019) that technical and creative abilities form the core of creative potential in engineering staff. Indeed, any human activity requires certain abilities. Technical abilities enable one to engage in technical activities (technical understanding – the ability to comprehend the construction and operation of technical devices quickly and accurately; technical performance – the skilful handling of mechanisms, machines, tools; the ability to perform technological operations using mechanisms and machines; technical construction activity – improving existing constructures and creating new technical objects) (Davletshin, 1971). According to Davletshin (1971), it is a synthesis of one's mental characteristics that show whether one is capable of technical activity. It is one's ability to understand and operate equipment, make technical products, as well as an aptitude for technical invention and construction.

This aspect is of paramount importance. After conducting extensive experimental research, Davletshin (1971) identified three components of technical activity. They are the following: technical understanding (the ability to comprehend the construction and operation of technical devices quickly and accurately); technical performance (the skilful handling of mechanisms, machines, tools; the ability to perform technological operations machines to produce technical means based on ready-made drawings and technical maps); technical construction activity (improving existing constructures and creating new technical objects) (Davletshin, 1971).

At the same time, a future automobile mechanic with a well-developed creative potential must be creative, demonstrate systemic and comprehensive knowledge, initiative and innovation. He or she should strive for creativity since creative abilities are the main component of such motivation. Given that the research problem deserves a separate and detailed study, the mentioned psychological characteristics can be associated with such qualities as active imagination, good memory, non-standard thinking, cognitive curiosity, independence of judgement, intuition, willingness to take risks, impulsiveness, originality, scepticism, a critical look at things considered "sacred", stable focus on creativity, courage in posing the problem, persistence and efficiency (Tarara, 2014).

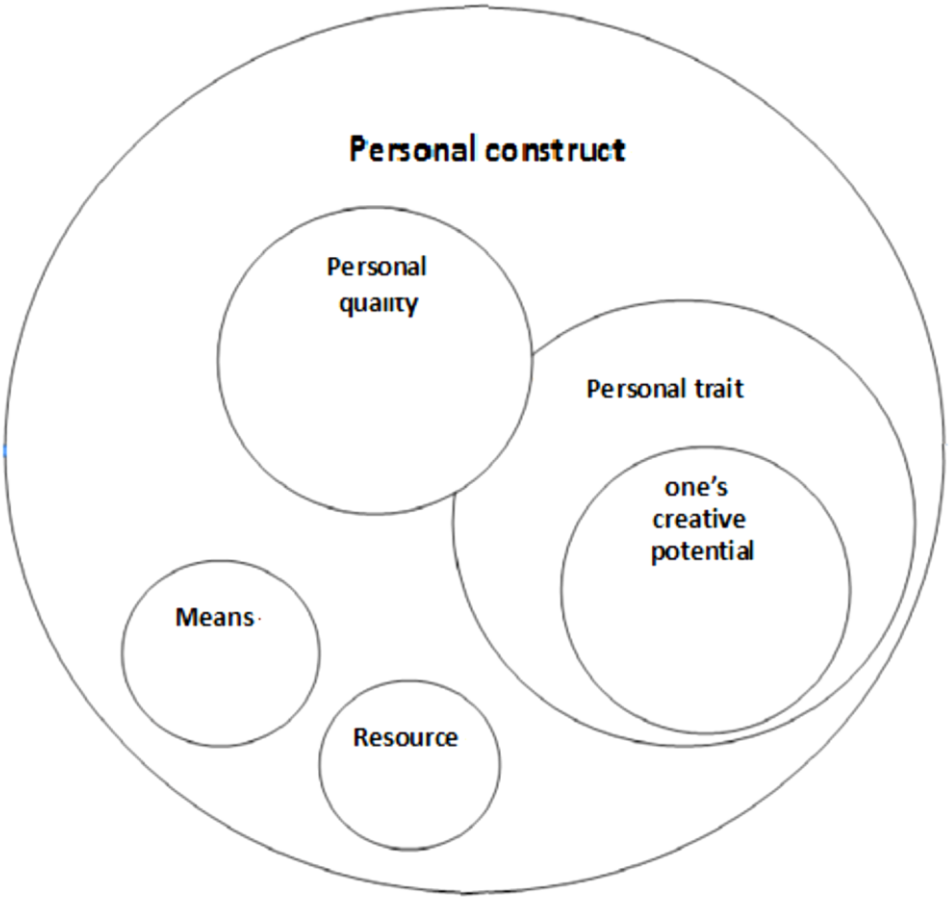

Fig. 1. Genus-species relations within the creative potential concept via Euler's circles

It is known that both technical and creative abilities lead to technical creativity, that is "some purposeful human activity which results in fundamentally new technical facilities and improves device construction, tools, technological processes, work planning" (Tarara, 2014, p. 9). Thus, one can conclude that creative technical activity "lies in solving construction-related, technological, organizational and economic problems" (Tarara, 2014, p. 9). Therefore, *a synthesis of one's creative and technical abilities* can be considered as the first essential specific characteristic of the studied concept.

The second one is *the resources that allow one to set and solve new tasks in the field of automobile transport repair and maintenance*. Scholars usually understand the term "personal resources" as certain opportunities, reserves and values that are used or can potentially be used by the subject of the activity. As rightly pointed by Titova (2019), one's psychoenergetic resources reflect the degree of actualization of one's intellectual and creative forces, as well as the level of methodological, theoretical, polytechnic knowledge, including about automobile transport.

The analysis of existing studies, as well as the author's of the article previous findings, shows that a characteristic feature of the studied phenomenon should be one's motivation towards creative technical activity, search for non-standard solutions, interest in creativity and creative self-realization. In this regard, an important essential characteristic of future automobile mechanics' creative potential is *their striving to find original solutions to problems associated with operation, repair, restoration or quality control of automobile transport and readiness for creative self-realization.*

The definition should also include a specific characteristic that describes those personal qualities and values which allow automobile mechanics to achieve creative levels of professional activity. First of all, it is about *creativity; technical thinking; technical ingenuity; the ability to combine, find similarities, reconstruct; inspiration; intuition; rich imagination; persistence; determination, reflexive and other qualities.*

Thus, the *creative potential of future specialists in repairing and maintaining automobiles* is an integrative characteristic that is based on a synthesis of one's creative and technical abilities and aptitude for creative technical activity, the resources and striving to find original solutions to problems associated with operation, repair, restoration or quality control of automobile transport due to a

systemic combination of methodological, theoretical, polytechnic knowledge, personal and professional qualities (creativity; technical thinking; technical ingenuity; the ability to combine, find similarities, reconstruct; inspiration; intuition; rich imagination; persistence; autonomy; discipline; determination) and readiness for creative self-realization.

It is also vital to analyze the content and structure of creative potential in future automobile mechanics. It must be noted that the available sources on the research problem offer various approaches to selecting structural components of this integrative personal characteristic. The analysis of certain studies (Begidova & Lipilina, 2013; Glotova, 2005; Kravchuk, 1992; Popova, 2009; Moliako & Muzyka, 2006; Titova, 2019), as well as the author's of the article findings, makes it possible to identify the following content-related components of the phenomenon:

- autonomy, independence of judgement;
- interest in design engineering, technical creativity;
- creative abilities that allow one to implement innovative ideas;
- innovativity;
- readiness to take risks and make mistakes;
- self-assessment, forecasting skills;
- critical perception of the obtained data, constructions and technical facilities;
- digital literacy (the ability to select, process, store and use technical information, use ICT);
- argumentation skills;
- knowledge transfer;
- thirst for new (especially methodological) knowledge;
- commitment to success;
- knowledge of project activities patterns;
- commitment to one's position;
- the ability to read and create diagrams, drawings of structure models for mechanisms, machines and devices;
- the ability to prove hypotheses;
- the ability to adapt, improve or change objects or ideas;
- diligence, technical ingenuity;
- the ability to generate new ideas;
- methodological training (self-study skills);
- technical training (technical knowledge; the ability to operate, maintain, repair equipment and use diagnostic tools);
- the ability to behave oneself in non-standard situations related to the mechanical state of technical objects;
- an understanding of the social significance of creative technical activity;
- proactivity; commitment to result;
- a system of knowledge about a creative component of automobile mechanics' professional activities;
- interest in modern equipment, innovative technologies in automobile production;
- a positive emotional state, optimism;
- spatial thinking;
- the ability to solve creative technical tasks;
- divergent thinking (mobility, originality, accuracy and flexibility);
- technical thinking;
- planning skills;
- organization and time management skills;
- professional curiosity;
- friendliness, altruism, teamwork skills;
- self-control skills;
- adequate self-esteem, self-regulation, reflexive culture;
- the ability to solve various technical problems;
- quick response to new technical information;
- fruitful combination of cognitive and professional interests;
- motivation towards creativity, needs and motives of self-expression;
- intuition;
- the ability to welcome criticism; the ability to offer constructive criticism;
- the ability and motivation to create something new and improve existing models and mechanisms;
- the ability to work in unknown conditions;
- critical thinking;
- a high intellectual level;
- inclinations and aptitudes manifested in hypersensitivity, selectivity of mental processes' mobility.

The creative potential of future automobile mechanics, as an integrative personal characteristic, can be also considered as a multi-component construct. Back in 1995, the famous psychologist Moliako (2006, p. 15) analyzed his and fellows' research findings (Matiushkin, Shadrikov, Holubieva, Bogoyavlenskaya, Babaev et al.) and presented the following general structure of creative potential:

1) inclinations and aptitudes manifested in hypersensitivity, certain selectivity, preferences, general dynamism of mental processes;

2) interests, their focus, frequency and systematicity of manifestations, dominance of cognitive interests;

3) curiosity; the ability to create something new, identify and solve problems;

4) quick processing of new information, creation of associative arrays;

5) the ability to compare, set standards for further comparisons, select;

6) manifestations of a general intellect – understanding, quick assessment and selection of solutions, adequacy of action;

7) emotional colouring of certain processes, emotional attitudes; the influence of feelings on subjective evaluation, choices, preferences;

8) persistence, systematicity, determination, decisiveness, diligence;

9) creative focus on the search for similarities, combinations, reconstructions, changes in options, decision-making, time management, use of resources;

10) intuitionism – the ability to manifest unconscious and quick (sometimes instantaneous) assessments, predictions, decisions;

11) relatively quick and effective acquisition of skills, abilities, techniques; effective professional performance;

12) the ability to realize one's strategies and tactics when solving various problems, tasks; the ability to find a way out of difficult, unusual, extreme situations.

In the same 1995, Kuzmina (1995, p. 46) proposed a slightly different structure of the specialist's creative potential in the context of comparative acmeological studies on personality development problems:

1) individual qualities (gender, age, family structure, birth coordinates, health status);

2) levels of productivity when solving creative tasks (higher, high, average, etc.);

3) integrative schemes of information self-sufficiency, role-based interaction, feedback analysis when solving creative tasks;

4) psychological prerequisites for productive solutions to creative tasks (a system of relations, attitudes, values, orientations, motivation);

5) abilities, competence structure;

6) one's cognitive, emotional and volitional qualities when solving creative tasks;

7) structures of abilities (gnostic, constructive, communicative, organizational);

8) the influence of a context (i.e., professional, non-professional, family-related);

9) social influence – evaluation, encouragement, support, social roles;

10) psychological readiness to restructure (reconstruct) activities in search of new ways to solve creative tasks (self-esteem, internality, externality, dogmatism, intuition)'

11) ways of considering restrictions and requirements for solving creative tasks defined by the profession and production;

12) ways of considering restrictions and requirements for solving tasks defined by moral principles.

Naturally, there are some differences in the above-mentioned structures of creative potential that lie in different views on the essence of the phenomenon. Moliako (2006, p. 14) considers creative potential as "a resource of one's creative capabilities, activities and actions". Kuzmina (1995) views creative potential at the tops of the "acme" (the highest level of manifestation). Nevertheless, the presented structures complement each other and prompt the search for architectonics in the creative potential of automobile mechanics.

Some scholars, who studied creative potential of engineering staff, offer the following structural components of this integrative personal characteristic:

- variant (intellectual, creative, emotional, volitional, motivational, evaluative components) and invariant components (Glotova, 2005);
- motivational-axiological, cognitive-procedural and reflexive components (Popova, 2009);
- motivational-volitional, intellectual-creative, pragmatist and reflexive components (Titova, 2019);
- axiological, motivational, cognitive, practical, emotional-volitional components (Andrievskaya, 2014);
- motivational-axiological, cognitive-pragmatist, intellectual-creative and personal-reflexive components (Kostenko, 2020).

The presented components of future automobile mechanics' creative potential, as well as scholar's approaches to its architectonics, prove that the structure of this phenomenon should include motivational-axiological, intellectual-creative, cognitive-pragmatist, emotional-volitional and personal-reflexive components.

The content of the *motivational-axiological* component shows the levels of students' values-based motivation to acquire methodological and professional knowledge; interest in technical creativity, curiosity; focus on discovering similarities, combining, changing options to solve technical problems; needs and motives for creative professional activities; ability to know how to operate, repair and maintain modern automobiles;

attitude towards creative self-development. This component stimulates and motivates creative technical activity in future automobile mechanics in the structure of creative potential.

The *intellectual-creative* component involves students' criticality, originality and flexibility of thinking; ability to easily generate ideas, analyze and synthesize data, build associations and comparisons; intuition, imagination; knowledge transfer; self-control in unusual situations; focus on creativity; talents; intellectual breadth; anti-conformism. Combining intellectual (including high technical knowledge) and creative abilities, this component enables a creative function of automobile mechanics' creative technical activity.

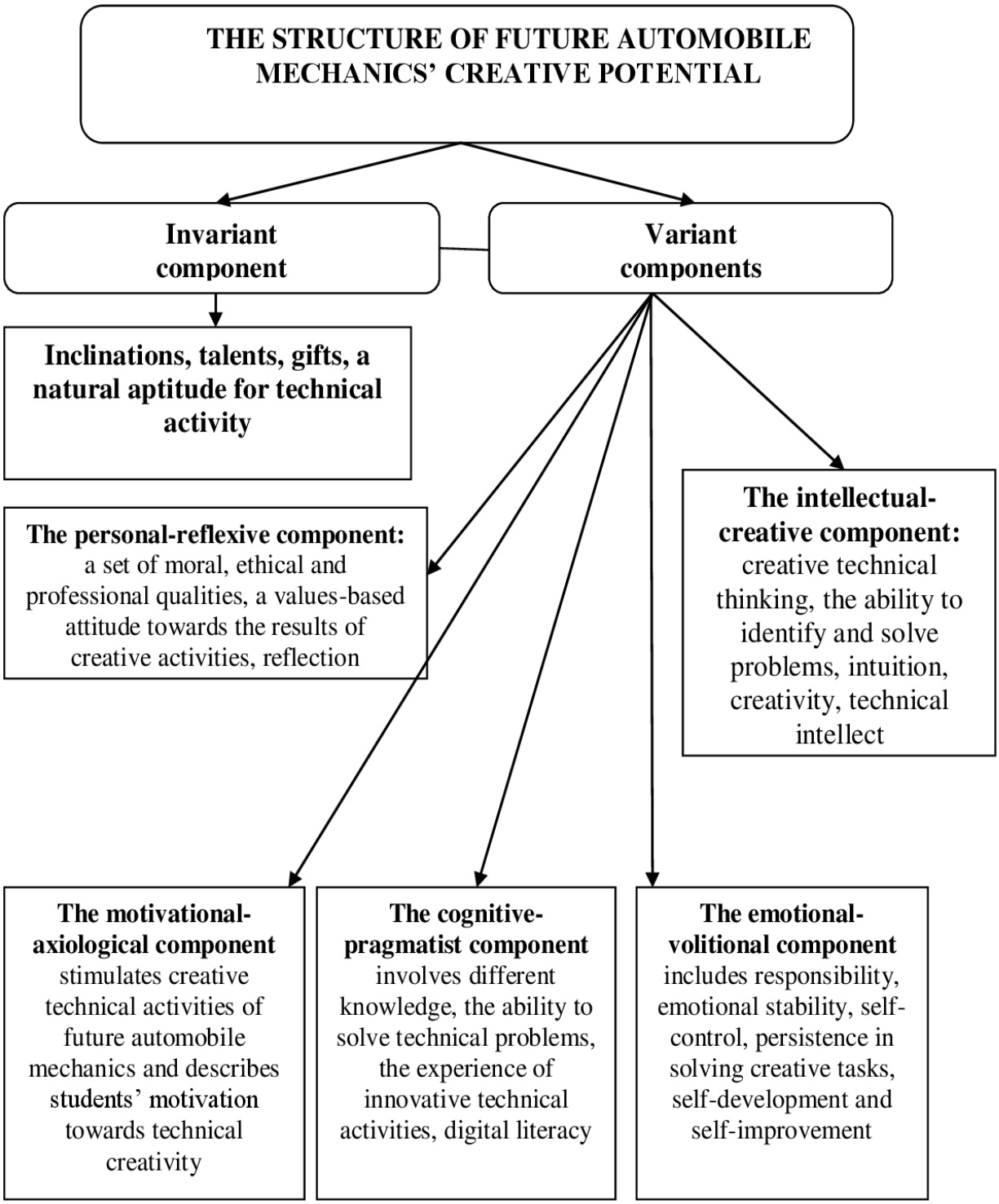

Fig. 2. The structure of future automobile mechanics' creative potential

The *cognitive-pragmatist* component shows how future specialists use methodological and technical knowledge to solve problems related to construction, repair, operation and maintenance of modern automobiles, other technical facilities; their ability to navigate in the information space, obtain scientific and technical information and use itaccordingly; organization and time management skills; the ability to work in uncertain conditions. In general, this component includes the experience of innovative technical activities, including in the field of automobile transport, as the ability to solve technical problems effectively. It is responsible for a technological function.

The *emotional-volitional* component implies future specialists' ability to understand their emotional state while performing creative technical tasks; self-control in non-standard situations; diligence, thoughtfulness, responsibility; determination, self-development, self-improvement; manifestations of strong-willed efforts when solving technical problems; positive emotional state associated with the effectiveness of creative technical activities; persistence in overcoming difficulties; acceptance of mistakes; ability to deal with negative results adequately.

The *personal-reflexive* component represents a set of moral, ethical and professional qualities (honesty and decency, modesty, diligence, kindness, integrity; strong physical health; technical intellect; accurate measurement by eye; quick reaction; ecological culture), as well as the ability to reflect on technical activities, conduct self-analysis and self-assessment of one's actions. In general, this component reflects a values-based attitude of future automobile mechanics towards the process and results of creative activity.

Importantly, the mentioned structural components of future automobile mechanics' creative potential are quite conditional: they are closely interconnected and combined into a single integrated construct (see Fig. 2).

Conclusions. The concept of future automobile mechanics' creative potential has been defined as an integrative characteristic that contributes to the success of one's professional activities. It is proposed to consider this phenomenon as a synthesis of invariant and variant components. It is shown that this complex personal construct combines motivational-axiological, intellectual-creative, cognitive-pragmatist, emotional-volitional and personal-reflexive components. Further research should aim to justify effective pedagogical conditions for developing creative potential in future automobile mechanics in colleges.

List of references

Андриевская, Л.А., 2014. Междисциплинарный дидактический ресурс общепрофессиональных дисциплин в модели формирования творческого потенциала студента технического ВУЗа. *Теория и практика общественного развития. Сер. Педагогические науки,* 11, с.74-79.

Бегидова, С.Н. та Липилина, Е. Ю., 2013. Творческий потенциал личности будущего инженера. *Вестник университета*, 11, с. 136-139.

Біла, І. М., 2014. *Психологія дитячої творчості*. Київ.: Фенікс.

Білодід, І. К. ред., 1973. *Словник української мови:* у 11 т. Т.4 Київ : Наукова думка.

Великий тлумачний словник української мови, 2005. Харків: Фоліо.

Глотова, Г.В., 2005. *Развитие творческого потенциала будущих инженеров в вузах США и Западной Европы*. Кандидат наук. Казанский государственный технологический университет.

Глуховская, Е. А., 1997. *Развитие творческого потенциала старшого школьника в учебной деятельности*. Кандидат наук. Оренбургский государственный педагогический университет.

Давлетшин, М.Г., 1971. *Психология технических способностей школьников*. Ташкент: ФАН.

Дьоміна, Ю.В., 2011. Творчий потенціал особистості майбутнього викладача. *Проблеми інженерно-педагогічної освіти,* 32/33.

Евинзон, С.Р., 1988. *Философско-социологический анализ творческого потенциала ученых.* Кандидат наук. ГОУ ВПО «Иркутский государственный педагогический университет».

Костенко, Т.В., 2020. Творчий потенціал студентів: зміст та структура В: *The 4 th International scientific and practical conference*: *Eurasian scientific congress* (April 19-21, 2020). Barca Academy Publishing, Barcelona, Spain, pp. 213-219.

Кошук, О. Б., 2005. *Методика формування технічних здібностей майбутніх інженерів-аграрників у процесі вивчення курсу «Сільськогосподарські машини»*. Кандидат наук. Київський національний аграрний університет.

Кравчук, П.Ф., 1992. *Формирование творческого потенциала личности в системе высшего образования.* Доктор наук. Московский педагогический государственный университет.

Кузьмина, Н.В. 1995. Творческий потенциал специалиста. Акмеологические проблемы развития. *Гуманизация образования*, 1, с. 41-53.

Кулюткин, Ю.Н., 2001. *Изменяющийся мир и проблема развития творческого потенциала личности. Ценностно-смысловой анализ.* СПб.: СПбГУПМ.

Моляко, В. О. ред., 2008. *Психологічне дослідження творчого потенціалу особистості*: монографія. Київ: Педагогічна думка.

Моляко, В.О. та Музика, О.Л. ред., 2006. *Здібності, творчість, обдарованість: теорія, методика, результати досліджень*. Житомир: Вид-во Рута.

Мурашко, І. В., 2010. Розкриття поняття «особистісний потенціал» та його психологічної структури. *Актуальні проблеми психології: Психологічна теорія і технології навчання*, [online] 8, с. 196-205. Доступно: <http://newlearning.org.ua/sites/default/files/praci/2010_7/st18.pdf > [Дата звернення 26 Травень 2020].

Пасько, Я.І., Білецький, В.В., Савенкова, М.Є. та Бурега В.В. ред, 2004. *Логіка* : навчально-методичний посібник. Донецьк: Дон ДДУ.

Попова, О.П., 2009. *Розвиток творчого потенціалу майбутнього інженера в процесі професійної підготовки у вищому технічному навчальному закладі*. Кандидат наук. Класичний приватний університет

Посталюк, Н. Ю., 1989. *Творческий стиль деятельности: педагогический аспект.* Казань: Изд-во Казанского университета.

Соснин, Н.В., 2009. Дизайн как основа компетентностной модели инженерного образования. *Высшее образование в России,* 12, с. 20-26.

Стаднійчук, І., 2019. Методичні засади формування професійної компетентності майбутніх техніків-електриків в аграрних коледжах. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка, 2* (19), с. 4-10. doi: https://doi.org/10.32835/2223-5752.2019.19.4-10

Тарара, А.М., 2014. *Технічна творчість учнів основної школи у процесі проектної і технологічної діяльності*: навчально-методичний посібник. Київ : Педагогічна думка.

Тітова, О. А., 2019. *Педагогічна система розвитку творчого потенціалу майбутніх інженерів у аграрних університетах: теоретичне обґрунтування та методичне забезпечення* : монографія. Мелітополь : ФОП Однорог Т.В.

Череповська, Н. І., 2006. Виявлення та стимуляція розвитку творчого потенціалу дітей. *Обдарована дитина*: *Науково-практичний освітньо-популярний журнал для педагогів, батьків та дітей,* 1, с.18-22.

Amabile, T. M., 2012. Componential Theory of Creativity. *Harvard Business School Working Paper*, [online] 12-096. Available at: <http://hbswk.hbs.edu/> [Accessed 26 October 2020].

Hinton, B.L., 1970. Personality Variables and Creative Potential. *The Journal of Creative Behavior,* 4 (3), pp. 210-217.

Pereira, L. Q., 1999. Divergent thinking and the design process. *International Conference on Design and Technology Educational Research and Curriculum Development Conference Book, pp*. 224-229.

Plucker, J., Beghetto, R. A. and Dow, G., 2004. Why isn't creativity more important to educational psychologists? Potential, pitfalls, and future directions in creativity research. *Educational Psychologist,* 39, pp. 83-96.

Translated & Transliterated

Andrievskaya, L.A., 2014. Mezhdistsiplinarnyiy didakticheskiy resurs obscheprofessionalnyih distsiplin v modeli formirovaniya tvorcheskogo potentsiala studenta tehnicheskogo VUZa [Interdisciplinary didactic resource of general professional disciplines in the model of forming the creative potential of a student of a technical university]. *Teoriya i praktika obschestvennogo razvitiya. Ser. Pedagogicheskie nauki [Theory and Practice of Public Development]*, 11, s.74-79, [in Russian].

Begidova, S.N. ta Lipilina, E. Yu., 2013. Tvorcheskiy potentsial lichnosti buduschego inzhenera [The creative potential of the personality of the future engineer]. *Vestnik universiteta [University Bulletin],* 11, s. 136-139, [in Russian].

Bila, I. M., 2014. *Psykholohiia dytiachoi tvorchosti [Psychology of children's creativity]*. Kyiv: Feniks, [in Ukrainian].

Bilodid, I. K. red., 1973. *Slovnyk ukrainskoi movy* [Dictionary of the Ukrainian language]*: u 11 t. T.4.* Kyiv: Naukova dumka [Scientific Thought], [in Ukrainian].

Velykyi tlumachnyi slovnyk ukrainskoi movy [Large explanatory dictionary of the Ukrainian language], 2005. Kharkiv: Folio, [in Ukrainian].

Glotova, G.V., 2005. *Razvitie tvorcheskogo potentsiala buduschih inzhenerov v vuzah SShA i Zapadnoy Evropyi [Development of the creative potential of future engineers in universities in the USA and Western Europe]*. Kandidat nauk. Kazanskiy gosudarstvennyiy tehnologicheskiy universitet [Kazan State Technological University], [in Russian].

Gluhovskaya, E. A., 1997. *Razvitie tvorcheskogo potentsiala starshogo shkolnika v uchebnoy deyatelnosti [Development of the creative potential of a senior pupil in educational activities]*. Kandidat nauk. Orenburgskiy gosudarstvennyiy pedagogicheskiy universitet [Orenburg State Pedagogical University], [in Russian].

Davletshin, M.G., 1971. Psihologiya tehnicheskih sposobnostey shkolnikov [Psychology of technical abilities of schoolchildren]. Tashkent: FAN, [in Russian].

Domina, Yu. V., 2011. Tvorchyi potentsial osobystosti maibutnoho vykladacha [Creative potential of the future teacher's personality]. *Problemy inzhenerno-pedahohichnoi osvity* [*Problems of engineering and pedagogical education*], 32/33, [in Ukrainian].

Evinzon, S.R., 1988. *Filosofsko-sotsiologicheskiy analiz tvorcheskogo potentsiala uchenyih [Philosophical and sociological analysis of the creative potential of scientists]*. Kandidat nauk. GOU VPO «Irkutskiy gosudarstvennyiy pedagogicheskiy universitet» [Irkutsk State Pedagogical University], [in Russian].

Kostenko, T.V., 2020. Tvorchyi potentsial studentiv: zmist ta struktura [Creative potential of students: content and structure] V: *The 4 th International scientific and practical conference: Eurasian scientific congres*s (April 19-21, 2020). Barca Academy Publishing, Barcelona, Spain, pp.213-219, [in Ukrainian].

Koshuk, O. B., 2005. *Metodyka formuvannia tekhnichnykh zdibnostei maibutnikh inzheneriv-ahrarnykiv u protsesi vyvchennia kursu «Silskohospodarski mashyny» [Methods of forming the technical abilities of future agricultural engineers in the process of studying the course "Agricultural Machinery"]*. Kandydat nauk. Kyivskyi natsionalnyi ahrarnyi universytet [Kyiv National Agricultural University], [in Ukrainian].

Kravchuk, P.F., 1992. *Formirovanie tvorcheskogo potentsiala lichnosti v sisteme vyisshego obrazovaniya [Formation of the creative potential of the individual in the higher education system]*. Doktor nauk. Moskovskiy pedagogicheskiy gosudarstvennyiy universitet [Moscow Pedagogical State University], [in Russian].

Kuzmina, N.V. 1995. Tvorcheskiy potentsial spetsialista. Akmeologicheskie problemyi razvitiya [The creative potential of a specialist. Acmeological problems of development]. *Gumanizatsiya obrazovaniya [Humanization of education*], 1, s. 41-53, [in Russian].

Kulyutkin, Yu.N., 2001. Izmenyayuschiysya mir i problema razvitiya tvorcheskogo potentsiala lichnosti. Tsennostno-smyislovoy analiz [The changing world and the problem of developing the creative potential of the individual. Value-semantic analysis]. SPb.: SPbGUPM, [in Russian].

Moliako, V. O. red., 2008. *Psykholohichne doslidzhennia tvorchoho potentsialu osobystosti: monohrafiia [Psychological study of the creative potential of the individual]*. Kyiv: Pedahohichna dumka [Pedagogical Thought],[in Ukrainian].

Moliako, V.O. ta Muzyka, O.L. red., 2006. *Zdibnosti, tvorchist, obdarovanist: teoriia, metodyka, rezultaty doslidzhen* [Abilities, creativity, talent: theory, methods, research results]. Zhytomyr: Vyd-vo Ruta, [in Ukrainian].

Murashko, I. V., 2010. Rozkryttia poniattia «osobystisnyi potentsial» ta yoho psykholohichnoi struktury [Disclosure of the concept of "personal potential" and its psychological structure]. *Aktualni problemy psykholohii: Psykholohichna teoriia i tekhnolohii navchannia [Current problems of psychology: Psychological theory and learning technologies]*, [online] 8, s. 196-205. Dostupno:

<http://newlearning.org.ua/sites/default/files/praci/2010_7/st18.pdf> [Data zvernennia 26 Traven 2020], [in Ukrainian].

Pasko, Ya.I., Biletskyi, V.V., Savenkova, M.Ie. ta Bureha V.V., red. 2004. *Lohika* [Logic] : navchalno-metodychnyi posibnyk/ Donetsk: Don DDU, [in Ukrainian].

Popova, O.P., 2009. *Rozvytok tvorchoho potentsialu maibutnoho inzhenera v protsesi profesiinoi pidhotovky u vyshchomu tekhnichnomu navchalnomu zakladi* [Development of creative potential of the future engineer in the process of professional training in a higher technical educational institution]. Kandydat nauk. Klasychnyi pryvatnyi universytet [Classic Private University], [in Ukrainian].

Postaliuk, N. Yu., 1989. Tvorcheskyi styl deiatelnosty [Creative style of activity]. *Pedahohycheskyi aspekt* [Pedagogical aspect], s. 49-50, [in Russian].

Postalyuk, N. Yu., 1989. *Tvorcheskiy stil deyatelnosti: pedagogicheskiy aspekt [Creative style of activity: pedagogical aspect]*. Kazan: Izd-vo Kazanskogo universiteta,

Sosnin, N.V., 2009. Dizayn kak osnova kompetentnostnoy modeli inzhenernogo obrazovaniya [Design as the basis of the competence model of engineering education]. Vyisshee obrazovanie v Rossii [Higher education in Russia], 12, s. 20-26, [in Russian].

Stadniychuk, I., 2019. Metodychni zasady formuvannya profesiynoyi kompetentnosti maybutnikh tekhnikiv-elektrykiv v ahrarnykh koledzhakh [Methodical bases of professional competence formation of future electrical technicians in agricultural colleges]. *Naukovyy visnyk Instytutu profesiyno-tekhnichnoyi osvity NAPN Ukrayiny. Profesiyna pedahohika [Scientific Bulletin of the Institute of Vocational Education of the National Academy of Pedagogical Sciences of Ukraine. Professional Pedagogy]*, 2 (19), s. 4-10, doi: https://doi.org/10.32835/2223-5752.2019.19.4-10, [in Ukrainian].

Tarara, A.M., 2014. *Tekhnichna tvorchist uchniv osnovnoi shkoly u protsesi proektnoi i tekhnolohichnoi diialnosti [Technical creativity of primary school students in the process of design and technological activities]: navchalno-metodychnyi posibnyk*. Kyiv : Pedahohichna dumka, [in Ukrainian].

Titova, O. A., 2019. *Pedahohichna systema rozvytku tvorchoho potentsialu maibutnikh inzheneriv u ahrarnykh universytetakh: teoretychne obgruntuvannia ta metodychne zabezpechennia [Pedagogical system of creative potential development of future engineers in agricultural universities: theoretical substantiation and methodical support]*: monohrafiia. Melitopol : FOP Odnoroh T.V., [in Ukrainian].

Cherepovska, N. I., 2006. Vyiavlennia ta stymuliatsiia rozvytku tvorchoho potentsialu ditei [Identifying and stimulating the development of children's creative potential]. *Obdarovana dytyna: Naukovo-praktychnyi osvitno-populiarnyi zhurnal dlia pedahohiv, batkiv ta ditei [Gifted child: Scientific and practical educational and popular magazine for teachers, parents and children]*, 1, s. 18-22, [in Ukrainian].

Amabile, T. M., 2012. Componential Theory of Creativity. *Harvard Business School Working Paper*. [online] 12-096. Available at: <http://hbswk.hbs.edu/> [Accessed 26 October 2020], [in English].

Hinton, B.L., 1970. Personality Variables and Creative Potential. *The Journal of Creative Behavior*,4 (3), pp. 210-217, [in English].

Pereira, L. Q., 1999. Divergent thinking and the design process. *International Conference on Design and Technology Educational Research and Curriculum Development Conference Book*, pp. 224-229, [in English].

Plucker, J., Beghetto, R. A. and Dow, G., 2004. Why isn't creativity more important to educational psychologists? Potential, pitfalls, and future directions in creativity research. *Educational Psychologist*, 39, pp. 83-96, [in English].

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ТВОРЧИЙ ПОТЕНЦІАЛ МАЙБУТНЬОГО МЕХАНІКА З ОБСЛУГОВУВАННЯ ТА РЕМОНТУ АВТОМОБІЛІВ І ДВИГУНІВ

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Реферат:

Актуальність дослідження визначається суперечністю між зростаючою потребою сучасних сервісних центрів і ремонтних автопідприємств у висококваліфікованих і креативних інженерно-технічних працівниках та неузгодженістю думок учених щодо визначення суті, змісту і структури творчого потенціалу майбутнього фахівця автотранспортної галузі, недосконалістю умов його формування й розвитку у коледжах.

Мета: уточнити дефініцію, конкретизувати зміст та обґрунтувати структуру творчого потенціалу майбутніх механіків з обслуговування та ремонту автомобілів і двигунів.

Методи: теоретичний аналіз наукових джерел – для з'ясування рівня дослідженості проблеми; порівняння – з метою вивчення наукових підходів до розв'язання проблеми; аналіз і синтез – задля визначення найближчої родової ознаки, суттєвих видових ознак досліджуваного феномена; систематизація – для обґрунтування його структурних компонентів.

Результати: уточнено дефініцію поняття «творчий потенціал майбутнього механіка з обслуговування та ремонту автомобілів і двигунів»; конкретизовано його зміст, обґрунтовано структуру та визначено базові характеристики.

Висновки: поняття «творчий потенціал майбутнього механіка з обслуговування та ремонту автомобілів і двигунів» – це інтегративна властивість особистості, що сприяє реалізації її успішної професійної діяльності; даний феномен є складним особистісним конструктом з певним набором компонентів (мотиваційно-ціннісний, інтелектуально-креативний, когнітивно-діяльнісний, емоційно-вольовий та особистісно-рефлексивний) та базових характеристик (синтез творчих і технічних здібностей; схильність до творчої технічної діяльності; ресурсна можливість і прагнення знаходити оригінальні рішення розв'язання проблем в галузі експлуатації й ремонту, відновлення чи контролю якості об'єктів автомобільного транспорту; здатність системно поєднувати методологічні, загальнотеоретичні, політехнічні знання; наявність певних особистісно-професійних якостей).

Ключові слова: *творчий потенціал; майбутній механік з обслуговування та ремонту автомобілів і двигунів; зміст та структура творчого потенціалу.*

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A METHODICAL SYSTEM OF PROFESSIONAL TRAINING FOR FUTURE SKILLS WORKERS WITH ELEMENTS OF DUAL EDUCATION

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Abstract.

Relevance: It is indeed essential to realize the importance of implementing strategies for sustainable development of the society, one of which is dual education. In turn, it will contribute to the effective organization of such education in professional (vocational) education schools (hereinafter "P(V)E schools"), as well as to timely development of a scientifically justified methodical system of professional training for future skilled workers with its elements.

The article *aims* 1) to consider the essence and structure of such a methodical system of professional training for future skilled workers with elements of dual education, 2) clarify the content of its components for a successful and effective implementation of this system in P(V)E schools.

Research methods are the following: analysis and synthesis – to identify and justify the components of the methodical system of professional training for future skilled workers with elements of dual education; generalization – to formulate conclusions; modelling – to determine the relationships between the system's components; empirical methods, including praximetric (a study and analysis of pedagogical experience, curricula, training programmes for future skilled workers within dual education) – to describe the educational process (in the form of dual education) in P(V)E schools; interrogatory-diagnostic (interviews with the teaching staff of P(V)E schools and employers) – to clarify the content of the methodical system of professional training for future skilled workers with elements of dual education).

Results: the article presents the author's methodical system of professional training for future skilled workers with elements of dual education. It is viewed as an open system that consists of certain interrelated components (students, teachers, social partners, goals, content, pedagogical interaction tools, diagnostics and assessment, promising opportunities for updates in the methodical system).

Conclusions. The identified structural components of the author's methodical system enable its life cycle and further transformations. Below are the expected positive results of its implementation in P(V)E schools: the successful introduction of dual education; clear awareness of the essence, content and characteristics of professional training for skilled workers under dual education by all actors in the educational process, as well as the consistency of their actions; the enhancement of students' professional competencies and competitiveness in the labour market; the shortening of graduates' adaptation period in their first employment.

Keywords: *methodical system of professional training for future skilled workers with elements of dual education, profes-sional (vocational) education schools, dual education, future skilled workers.*

Introduction. The current situation in the world requires everyone to realize the importance of implementing strategies for the sustainable development of society, one of which is dual education.

Given the reforms in the Ukrainian educational, including professional (vocational), system, certain problems are exacerbated. They are the following: lack of a decentralized and results-oriented model of professional (vocational) education management and funding; insufficient cooperation and intersectoral interaction among state authorities, local governments, P(V)E schools, the business sector, civil society institutions and other stakeholders; low quality and prestige of professional (vocational) education; its insufficient popularization among the youth and adults.

To solve these problems, one should employ a complex approach. The latter lies in coordinating and balancing the interests of all stakeholders in the system of professional (vocational) education. In this regard, one of the possible ways to solve them is the organization and development of dual education. Therefore, the National Economic Strategy 2030, approved by the Cabinet of Ministers of Ukraine as of March 3, 2021 (No 179), states about "creating conditions for developing a public-private partnership in the field of professional (vocational) education" and "improving the mechanism for obtaining professional (vocational) education under dual education" within the framework of the strategic goal "Creating an Inclusive, Innovative and Educated Society in which Citizens have Equal Rights and Opportunities to Develop Their Talent throughout Life" (Kabinet ministriv Ukrayiny, 2021).

Sources. Quite noteworthy is a study by Swiss scholars on dual education as a narrowly specialized and student-oriented experience that leads to knowledge through subsequent reflection (Schwendimann Beat A., et al., 2015).

A detailed analysis of some other relevant studies (M. Azhazha, I. Boichevska, V. Chernichenko, Yu. Kariahin, I. Korkuna, O. Korkuna, L. Krymchak, V. Novikov, Yu. Oleksin, O. Tsilnyk, V. Shebanin, S. Yakubovska et al.) shows that Ukrainian scholars have only begun to gain practical experience in implementing dual education. Consequently, most publications justify the expediency of its introduction in Ukrainian P(V)E schools. Thus, I. Korkuna, O. Korkuna, and O. Tsilnyk (2018, p. 93) offer a visual scheme of dual education in Ukrainian universities, which, however, does not fully reflect the mechanisms of interaction between all actors in the educational process under dual education.

M. Azhazha (2019, p. 16) analyzed relevant legal frameworks and determined factors in the implementation of dual education in the professional training of future specialists in Ukrainian universities. She believes that these factors are associated with the insufficient focus of the educational system on the needs of the labour market and the interaction between their elements. V. Shebanin (2018) presents the system of training highly qualified specialists in agriculture under dual education (at Mykolaiv National Agrarian University) that adheres to the needs of the agrarian sector in Mykolaiv region. In the context of this research, one should pay particular attention to the principles determined by Yu. Oleksin and S. Yakubovska (2018, p. 103) that form the basis for the system of dual education. They are as follows: the equality of humanistic and axiological orientations; a competence-based approach; the establishment and development of professional activities and socio-professional relations. However, the organization of dual education in P(V)E schools is negatively affected by the lack of a scientifically justified methodical system and insufficient implementation of pedagogical conditions for introducing elements of dual education in the professional training of future skilled workers.

The article aims 1) to consider the essence and structure of the methodical system of professional training for future skilled workers with elements of dual education, 2) clarify the content of its components for a successful and effective implementation of this system in P(V)E schools.

Research methods are the following: analysis and synthesis - to identify and justify the components of the methodical system of professional training for future skilled workers with elements of dual education; generalization - to formulate conclusions; modelling - to determine the relationships between the system's components; empirical methods, including praximetric (a study and analysis of pedagogical experience, curricula, training programmes for future skilled workers within dual education) - to describe the educational process (in the form of dual education) in P(V)E schools; interrogatory-diagnostic (interviews with the teaching staff of P(V)E schools and employers) - to clarify the content of the methodical system of professional training for future skilled workers with elements of dual education).

Results and discussion. Since 2019, research officers of the Laboratory of Professional Education Technologies at the Institute of VET of the NAES of Ukraine have been conducting a study on methodical principles of implementing dual education elements in professional training of future specialists in

construction, machine building, service and catering. They have already developed the methodical system of professional training for future skilled workers with elements of dual education (see Fig. 1). This system consists of certain interrelated structural components (students, teachers, social partners, goals, content, pedagogical interaction tools, diagnostics and assessment, promising opportunities for updates in the methodical system) (Kulalaieva, 2021, p. 88).

Fig. 1. The author's methodical system of professional training for future skilled workers with elements of dual education

Its main system-forming component is *the goal* of professional training for future skilled workers with elements of dual education. It lies in adjusting its quality to labour market requirements, competencies of graduates from P(V)E schools and personal capabilities and preferences of students (Ministerstvo osvity i nauky Ukrainy, 2018). Consequently, it requires one to consider the current and future needs of business entities and develop a public-private partnership. In turn, dual education allows graduates to quickly adapt to professional activities, gain valuable experience, combine professional training and paid practice, use the latest facilities of business entities to acquire practical skills. Besides, it coordinates employers' requirements for graduates' competences with relevant offers of P(V)E schools and involves practising specialists in the professional training process.

The *content* of such training covers a system of knowledge, skills and abilities that improves future specialists' competences under employers' requirements and seeks to approximate theory to practice, education to production. The system includes the theoretical and practical knowledge and skills, as well as the creative experience, that enable 1) training in real production; 2) the use of the complex approach to solving professional problems and managing educational information; 2) the development of critical thinking, teamwork skills and ability to formulate and defend one's opinion. Also, this content aims to develop professionally important qualities, corporate culture and social responsibility.

Pedagogical interaction tools involve forms (lessons, mini-lectures, talks, training sessions, competitions), methods (explanatory-illustrative, productive, heuristic, problem- and research-based), personality-oriented pedagogical technologies (problem-based and modular learning; critical thinking development; case studies; simulations; projects; ICT), as well as tools for monitoring teaching quality focused on a combination of theoretical and practical training.

Diagnostics and assessment, as a component of the author's methodical system, allows one to analyze, control and correct the acquisition of educational material by students. Types of assessment are as follows: initial (to identify levels of knowledge, skills and abilities), formative, thematic, intermediate, summative (to assess learning outcomes); forms of assessment – individual, group, frontal; methods – oral, written, practical, programme-based. A compulsory element of the diagnostics and assessment component is reflexive exercises (discussing one's actions; identifying and analyzing mistakes to prevent them in professional activities; self-control in the workplace). Such exercises are mostly offered to students at the final stage of the lesson.

Students (learners) are the main actors in the educational process who gain knowledge during theoretical and practical activities. Interestingly, professional training with elements of dual education combines theoretical training (30%) in P(V)E schools and practical training (70%) in the workplace. Students can choose where they wish to complete professional-practical training from the list of business entities that have concluded agreements with P(V)E schools about the provision of professional education in the context of dual education. If the student has reached the age of 18, he or she is entitled to conclude an agreement with the P(V)E school and the business entity about obtaining professional (vocational) education with elements of dual education. If not, his or her parents or other legal representatives are entitled to do so (Ministerstvo osvity i nauky Ukrainy, 2019).

In case they have concluded employment agreements while obtaining professional (vocational) education with elements of dual education, students may become employees of these business entities and receive a salary or other monetary remuneration during professional-practical training in the workplace. It is also important that students should keep journals. It is because these journals record different and valuable information (timetable details; levels of professional and key competences stated by the curriculum or professional (vocational) education standard; formative assessment results). Such information can be recorded by students themselves, masters of vocational training, mentors, dual education coordinators (if necessary). Documents on educational and/or professional qualifications are issued to students based on their results of the state certification.

Teachers can act as mentors, coordinators, organizers, consultants, facilitators, advisors. They encourage students to acquire professional and key competencies, identify problems associated with the educational process and help solve them. Students' professional-theoretical training under dual education is provided under *the Regulations on the Organization of the Educational and Production Process in Professional (Vocational) Education Schools*, approved by the order of the Ministry of Education and Science of Ukraine as of May 30, 2006 (No 419) (Ministerstvo osvity i nauky Ukrainy, 2006). Masters of vocational training (or their assistants), who are assigned to P(V)E schools' students in terms of their professional-practical training at the enterprise, perform some essential functions, too. They ensure compliance with the curriculum and visit students in the workplace and/or training and production areas of the enterprise.

Research officers of the Laboratory of Professional Education Technologies at the Institute of VET of the NAES of Ukraine have prepared and conducted the training course on the organization of professional training for future skilled workers under dual education to raise teachers' awareness of such education. The course consists of the following thematic sessions: "The Legal and Pedagogical Documentation that Regulates the Planning, Organization, Implementation and Monitoring of Professional Training for Skilled Workers under Dual Education"; "Methods of Organizing Dual Education for Professional Training of Skilled Workers"; Methods of Organizing Dual Education at Production Site"; "Technology of Social Partnership Development in Professional (Vocational) Education Schools under Dual Education. A Roadmap for Employers"; "The Foreign Experience of Professional Education and Training under the Dual System"; "Modern Models of Self-Government in Professional Training of Future Skilled Workers under Dual Education"; "Fundamentals of Professional Pedagogy"; "A Methodical System of Professional Training for Future Skilled Workers with Elements of Dual Education"; "Creating an Educational and Production Environment of the Dual System in Professional (Vocational) Education Schools".

Besides, they have developed a methodology for organizing dual education in terms of professional training for future specialists in construction, machine building, service and catering to provide relevant scientific-methodical support for such training. This methodology consists of five stages and involves certain measures combining traditional training with that in the workplace (Kulalaieva, 2020). *Social partners* of the professional (vocational) education system include employers (enterprises, organizations, institutions of various forms of ownership

and subordination, their associations; professional associations of employers); governing bodies and power structures (economic, social and employment spheres; chambers of commerce and industry); public organizations and associations (trade unions, associations of employees); individual representtives of the labour market; individual consumers of educational services (students and their parents, unemployed citizens). Furthermore, research officers of the Laboratory have developed a technology of social partnership development in P(V)E schools under dual education (Kulalaieva, & Homeniuk, 2020) and a roadmap for employers regarding the introduction of dual education (Kulalaieva, 2020) to promote cooperation among the actors in the social partnership system to enhance the quality of the professional (vocational) education system.

Promising opportunities for updates in the methodical system enable dynamism and modernization of the current methodical system. Indeed, its transformation largely depends on constant improvement of all its components, flexibility, consideration of societal demands and labour market needs, as well as self-development of education stakeholders.

The functional components of the mentioned system are the following: *projecting* (it determines general goals and objectives of professional training for future skilled workers with elements of dual education); *cognitive* (it coordinates employers' requirements with professional (vocational) education standards and include their proposals in the curriculum and programmes of professional training for skilled workers in P(V)E schools); *procedural* (it ensures the selection and use of forms, methods, technologies and tools of teaching and learning that are most suitable for dual education); *gnostic* (it allows teachers to study and analyze educational innovations, apply colleagues' experience, self-develop and self-improve); *reflexive* (it encourages students to reflect on educational material, analyze their professional actions and assess their own effectiveness during theoretical and practical training); *evaluative* (it monitors the quality of dual education and students' results with the help of representatives of educational institutions and business entities); *prognostic* (it modernizes the content of professional (vocational) education taking into account dynamic technological changes in the economy and facilities of P(V)E schools, as well as enables changes to curricula and programmes of professional training for future skilled workers in P(V)E schools, given the introduction of the latest production technologies at enterprises); *communicative* (it ensures effective interaction between P(V)E schools and executive bodies, trade unions, employers' associations, business entities, employment service institutions and coordinates their common interests on development, multichannel financing and multilevel management of the professional (vocational) education system).

Conclusions. The implementation of the author's methodical system of professional training for future skilled workers with elements of dual education in P(V)E schools, which consists of certain structural components (students, teachers, social partners, goals, content, pedagogical interaction tools, diagnostics and assessment, promising opportunities for updates in the methodical system) and functional components (projecting, cognitive, procedural, gnostic, reflexive, evaluative, prognostic, communicative) will contribute to the successful introduction of dual education in P(V)E schools; clear awareness of the essence, content and characteristics of professional training for skilled workers under dual education by all actors in the educational process, as well as the consistency of their actions; the enhancement of students' professional competencies and competitiveness in the labour market; the shortening of graduates' adaptation period in their first employment.

List of references

Ажажа, М. А., 2019. Управління процесом упровадження дуальної освіти в професійну підготовку майбутніх фахівців. *Публічне управління та митне адміністрування,* 1 (20), с.14-24. Доступно: <http://customs-admin.umsf.in.ua/archive/2019/1/2.pdf> [Дата звернення 5 Червень 2021].

Верховна Рада України, 2021. *Національна економічна стратегія на період до 2030 року*: *Постанова Каб. Міністрів України від 3 березня 2021 р. № 179*, [online] Доступно: <https://zakon.rada.gov.ua/laws/show/179-2021-п#n25> [дата звернення 17 Березень 2021].

Кабінет Міністрів України, 2018. *Про схвалення Концепції підготовки фахівців за дуальною формою здобуття освіти*: *Розпорядження КМ України від 19 вересня 2018 р. № 660-р.*, [online] Доступно: <https://zakon.rada.gov.ua/laws/show/660-2018-p#Text> [Дата звернення 10 Березень 2021].

Коркуна, О. І., Коркуна, І. І. та Цільник, О. Я., 2018. Сучасні процеси розвитку дуальної освіти: запорука стабільності кадрового потенціалу. *Соціально-економічні проблеми сучасного періоду*

України, 4, с. 90-94. Доступно: <http://ird.gov.ua/sep/sep20184(132)/sep20184(132)_090_KorkunaO,KorkunaI,TsilnykO.pdf> [Дата звернення 5 Червень 2021].

Кулалаєва Н., 2021. Методична система професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання. *Науково-методичне забезпечення професійної освіти і навчання*: матеріали XV звітної Всеукраїнської науково-практичної конференції (м. Київ, 25 березня 2021 р.). Київ: ІПТО НАПН України, с.88-92. Доступно: <file:///C:/Users/%D0%9F%D0%BE%D0%BB%D1%8C%D0%B7%D0%BE%D0%B2%D0%B0%D1%82%D0%B5%D0%BB%D1%8C/Downloads/Zbirnyk_materialiv_IV_zvitnoi_konferentsii_25_03_21.pdf> [Дата звернення 5 Червень 2021].

Кулалаєва, Н. та Гоменюк, Д., 2020. Technology of social partnership development in vocational education in conditions of dual education. *Професійна педагогіка,* 1 (20), с.146-150. https://doi.org/10.32835/2707-3092.2020.20.146-150.

Кулалаєва, Н. В., 2020a. Дорожня карта для роботодавців з упровадження дуальної форми здобуття освіти. *Професійна педагогіка,* 2 (20), с.5-10. https://doi.org/10.32835/2707-3092.2020.21.5-11.

Кулалаєва, Н., 2020b. Методика організації дуальної форми навчання кваліфікованих робітників: основні етапи. *Професійна освіта,* 3 (88), с.26-28.

Міністерство освіти і науки України, 2006. *Про затвердження Положення про організацію навчально-виробничого процесу у професійно-технічних навчальних закладах.* Наказ МОН України від 30.05.2006 № 419, [online] Доступно: <https://zakon.rada.gov.ua/laws/show/z0711-06#Text> [Дата звернення 10 Березень 2021].

Міністерство освіти і науки України, 2019. *Про затвердження Положення про дуальну форму здобуття професійної (професійно-технічної) освіти*. Наказ МОН України від 12.12.2019 № 1551, [online].Доступно: <https://zakon.rada.gov.ua/laws/show/z0193-20#Text> [Дата звернення 10 Березень 2021].

Олексін, Ю. П. та Якубовська, С. С., 2018. Педагогічна супервізія як елемент індивідуалізації дуального навчання. *Молодий вчений,* 4.1 (56.1), с.102-105. Доступно: <http://molodyvcheny.in.ua/files/journal/2018/4.1/24.pdf> [Дата звернення 5 Червень 2021].

Шебанін, В. С., 2018. Дуальна форма освітньої підготовки висококваліфікованих фахівців для аграрної сфери України. *Економіка АПК,* 7, с.5-15. Доступно: <http://dspace.mnau.edu.ua/jspui/bitstream/123456789/5000/3/E_apk_2018_7_3.pdf> [Дата звернення 5 Червень 2021].

Beat A. Schwendimann , Alberto A.P. Cattaneo, Jessica Dehler Zufferey, Jean-Luc Gurtner, Mireille Bйtrancourt and Pierre Dillenbourg, 2015. The “Erfahrraum”: a pedagogical model for designing educational technologies in dual vocational systems. *Journal of Vocational Education & Training*, 67, 3, с.367-396.

Translated & Transliterated

Azhazha, M. A., 2019. Upravlinnia protsesom uprovadzhennia dualnoi osvity v profesiinu pidhotovku maibutnikh fakhivtsiv [Management of the process of introduction of dual education in the professional training of future specialists]. *Publichne upravlinnia ta mytne administruvannia [Public administration and customs administration]*, 1 (20), s.14-24. Dostupno: http://customs-admin.umsf.in.ua/archive/2019/1/2.pdf [Data zvernennia 5 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy [Verkhovna Rada of Ukraine] (VR), 2021. *Natsionalna ekonomichna stratehiia na period do 2030 roku [National economic strategy for the period up to 2030*: *Postanova Kab. Ministriv Ukrainy vid 3 bereznia 2021 r. № 179 [Resolution of the Cabinet of Ministers of Ukraine of March 3, 2021 № 179]*. Dostupno: <https://zakon.rada.gov.ua/laws/show/179-2021-p#n25> [Data zvernennia 17 Berezen 2021], [in Ukrainian].

Kabinet ministriv Ukrayiny [Cabinet of Ministers of Ukraine] (KM), 2018. *Pro skhvalennia Kontseptsii pidhotovky fakhivtsiv za dualnoiu formoiu zdobuttia osvity: Rozporyadzhennya Kabinetu ministriv Ukrayiny vid 19 veresnya 2018 r. № 660-r [On approving the concept for specialists training upon dual form Regulation of the Cabinet of Ministers of Ukraine, September 19, 2018 № 660-r] (chynnyi),* [online] Dostupno: https://zakon.rada.gov.ua/laws/show/660-2018-%D1%80#Text [Data zvernennia 30 Lystopad 2020], [in Ukrainian].

Korkuna, O. I., Korkuna, I. I. ta Tsilnyk, O. Ya., 2018. Suchasni protsesy rozvytku dualnoi osvity: zaporuka stabilnosti kadrovoho potentsialu [Modern processes of development of dual education: a guarantee of stability of personnel potential]. *Sotsialno-ekonomichni problemy suchasnoho periodu Ukrainy [Socio-economic problems of the modern period of Ukraine]*, 4, s. 90-94. Dostupno: http://ird.gov.ua/sep/sep20184(132)/sep20184(132)_090_KorkunaO,KorkunaI,TsilnykO.pdf [Data zvernennia 5 Cherven 2021], [in Ukrainian].

Kulalaieva N., 2021. Metodychna systema profesiinoi pidhotovky maibutnikh kvalifikovanykh robitnykiv z elementamy dualnoi formy navchannia [Methodical system of professional training of future skilled workers with elements of dual form of education]. V: *Naukovo-metodychne zabezpechennia profesiinoi osvity i navchannia*: *zbirnyk materialiv XV zvitnoi Vseukrainskoi naukovo-praktychnoi konferentsii (m. Kyiv, 25 bereznia 2021 r.) [Scientific and methodological support of vocational education and training: materials of the XV reporting All-Ukrainian scientific-practical conference (Kyiv, March 25, 2021)]*. Instytut profesiino-tekhnichnoi osvity NAPN Ukrainy / za zah. red. V. O. Radkevych. Kyiv: IPTO NAPN Ukrainy [Kyiv: IPTO NAPS of Ukraine], s. 88-92. Dostupno: <file:///C:/Users/%D0%9F%D0%BE%D0%BB%D1%8C%D0%B7%D0%BE%D0%B2%D0%B0%D1%82%D0%B5%D0%BB%D1%8C/Downloads/Zbirnyk_materialiv_IV_zvitnoi_konferentsii_25_03_21.pdf> [Data zvernennia 5 Cherven 2021], [in Ukrainian].

Kulalaieva, N. ta Homeniuk, D., 2020. Technology of social partnership development in vocational education in conditions of dual education. *Professional Pedagogics*, [online] 1 (20), s.146-150. https://doi.org/10.32835/2707-3092.2020.20.146-150, [in English].

Kulalaieva, N. V., 2020a. Road map for employers on the introduction of the dual form of education. *Professional Pedagogics*, [online] 2 (20), s. 5-10. https://doi.org/10.32835/2707-3092.2020.21.5-11, [in English].

Kulalaieva, N., 2020b. Metodyka orhanizatsii dualnoi formy navchannia kvalifikovanykh robitnykiv: osnovni etapy [Methods of organizing the dual form of training of skilled workers: the main stages]. *Profesiina osvita [Professional education]*, 3 (88), s. 26-28, [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy [Ministry of Education and Science of Ukraine] (MON), 2006. *Nakaz MON Ukrainy vid 30 travnya 2006 r. № 419 "Pro zatverdzhennia Polozhennia pro orhanizatsiiu navchalno-vyrobnychoho protsesu u profesiino-tekhnichnykh navchalnykh zakladakh" [On approval of the Regulations on the organization of the educational and production process in vocational schools*] [online] (chynnyi), [online] Dostupno: https://zakon.rada.gov.ua/laws/show/z0711-06#Text [Data zvernennia 10 Berezen 2021], [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy [Ministry of Education and Science of Ukraine] (MON), 2019. *Pro zatverdzhennya Polozhennya pro dualnu formu zdobuttya profesijnoyi (profesijno-texnichnoi) osvity: Nakaz MON Ukrainy vid 12 grudnia 2019 r. № 1551 [On approval of the Regulations on the dual form of professional (vocational) education: Order of the Ministry of Education and Science of Ukraine of December 12, 2019 № 1551*] (chynnyi), [online] Dostupno: https://zakon.rada.gov.ua/laws/show/z0193-20#Text [Data zvernennia 10 Berezen 2021], [in Ukrainian].

Oleksin, Yu. P. ta Yakubovska, S. S., 2018. Pedahohichna superviziia yak element indyvidualizatsii dualnoho navchannia [Pedagogical supervision as an element of individualization of dual learning]. *Molodyi vchenyi [Young scientist]*, 4.1 (56.1), 102-105. Dostupno: <http://molodyvcheny.in.ua/files/journal/2018/4.1/24.pdf> [Data zvernennia 5 Cherven 2021], [in Ukrainian].

Shebanin, V. S., 2018. Dualna forma osvitnoi pidhotovky vysokokvalifikovanykh fakhivtsiv dlia ahrarnoi sfery Ukrainy [Dual form of educational training of highly qualified specialists for the agricultural sector of Ukraine]. *Ekonomika APK [Economics AIC]*, 7, s. 5-15. Dostupno: http://dspace.mnau.edu.ua/jspui/bitstream/123456789/5000/3/E_apk_2018_7_3.pdf [data zvernennia 5 Cherven 2021], [in Ukrainian].

Beat A. Schwendimann, Alberto A.P. Cattaneo, Jessica Dehler Zufferey, Jean-Luc Gurtner, Mireille Bйtrancourt and Pierre Dillenbourg, 2015. The "Erfahrraum": a pedagogical model for designing educational technologies in dual vocational systems. *Journal of Vocational Education & Training*, 67, 3, s. 367-396, [in English].

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МЕТОДИЧНА СИСТЕМА ПРОФЕСІЙНОЇ ПІДГОТОВКИ МАЙБУТНІХ КВАЛІФІКОВАНИХ РОБІТНИКІВ З ЕЛЕМЕНТАМИ ДУАЛЬНОЇ ФОРМИ НАВЧАННЯ

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Реферат:

Актуальність: необхідність усвідомлення кожним важливості реалізації стратегії збалансованого розвитку суспільства, одним із інструментів якої є дуальна форма здобуття освіти, зумовлює її цілеспрямовану організацію в закладах професійної (професійно-технічної) освіти (далі – П(ПТ)О) та доцільність і своєчасність розроблення науково обґрунтованої методичної системи професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання.

Мета: розгляд суті та структури методичної системи професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання, змістового наповнення її складників для успішного й ефективного впровадження цієї системи в закладах П(ПТ)О.

Методи: теоретичні (аналіз, синтез – для визначення та обґрунтування складників методичної системи професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання; узагальнення – для формулювання висновків дослідження; моделювання – для визначення взаємозв'язків між складниками системи); емпіричні (праксиметричні (вивчення та аналіз педагогічного досвіду, робочих планів, програм підготовки майбутніх кваліфікованих робітників за дуальною формою навчання – для виявлення особливостей освітнього процесу закладів П(ПТ)О в умовах дуальної форми навчання); опитувально-діагностичні (бесіди з педагогічними працівниками закладів професійної освіти та роботодавцями – для визначення змістового наповнення складників методичної системи професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання).

Результати: розроблено методичну систему професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання, що є динамічною відкритою системою й охоплює взаємопов'язані складники (учні, педагогічні працівники, соціальні партнери, цілі, зміст, засоби педагогічної взаємодії, діагностування й оцінювання, перспективні можливості для оновлення методичної системи).

Висновки. Визначені структурні складники запропонованої методичної системи уможливлюють її життєвий цикл та подальші трансформації. Упровадження розробленої методичної системи професійної підготовки майбутніх кваліфікованих робітників з елементами дуальної форми навчання в закладах П(ПТ)О сприятиме: успішному запровадженню дуальної форми навчання; чіткому усвідомленню всіма суб'єктами освітнього процесу суті, змісту та особливостей професійної підготовки кваліфікованих робітників в умовах дуальної форми навчання, а також узгодженості їхніх дій; підвищенню рівня професійних компетентностей здобувачів освіти, необхідних для діяльності за фахом, їхньої конкурентоздатності на ринку праці та скороченню періоду адаптації випускників цих закладів на першому робочому місці.

Ключові слова: *методична система професійної підготовки майбутніх кваліфікованих робітників з елементами дуа-льної форми навчання, заклади професійної (професійно-технічної) освіти, дуальна форма навчання, майбутні кваліфіковані робітники.*

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A SCIENTIFIC PLATFORM FOR ASSURING QUALITY OF PROFESSIONAL (VOCATIONAL) EDUCATION

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Abstract.

The relevance of the article is related to the post-industrial society's challenge with the assurance of the quality of professional (vocational) education (hereinafter "P(V)E").

The article aims to describe the mission and objectives of scientific-methodical support to assure the quality of P(V)E in terms of its modernization.

Research methods include a theoretical analysis of Ukraine's education legislation in the field of P(V)E, scientific sources, taught and research degrees to determine the main areas and ways to bring the quality of professional education more in line with technological and socio-economic challenges of the post-industrial society.

Results: the article identifies the two main drivers of addressing the research problem on the assurance of professional education quality (the focus of educational management on learning outcomes, as well as the conditions to achieve them). Besides, it singles out the main objectives to assure the quality of professional education and the ways of realizing them. The article justifies the role of research institutions in enhancing the efficiency of P(V)E schools as for assuring the quality of their educational and managerial activities and creating an internal system for assuring professional education quality.

Conclusions: the article specifies the main objectives of Ukrainian professional education regarding the assurance of its quality (creating an effective educational environment; promoting the professional development of teachers; improving educational management in P(V)E schools; developing an effective internal system for assuring professional education quality). Importantly, the article shows that appropriate scientific-methodical support for P(V)E schools is a prerequisite for realizing the identified objectives. It also describes its mission (training highly qualified specialists who can effectively work in the dynamic conditions of the post-industrial society) and objectives (promoting scientific achievements and advanced scientific-pedagogical experience; training the research and teaching staff for the professional education system; enabling scientific management of innovative educational activities in P(V)E schools; carrying out analytical and consultative activities to influence the state's education policy and activities of educational institutions in terms of assuring education quality).

Keywords: *professional education, quality of professional education, internal system for assuring professional educa-tion quality, scientific-methodical support for professional education.*

Introduction. A characteristic feature of the post-industrial society is a powerful influence of technological, social, and technosocial trends on all spheres of life. It is because they enable intensive digitalization, automation, and robotization of all spheres of production and daily life, development of

a network society, globalization, and ecologization of state policy, including education. This influence manifests itself in wide use of:

– industrial robotics which continues to replace manual labour with machines and thus creates the need for new qualifications and skills;

– unmanned vehicles which require future specialists to know the logistics basics;

– new materials and additive technologies, based on which automated systems produce complex parts and structural elements that future specialists should know how to use;

– an internet of objects that creates new protocols for inter-machine communications which future specialists should understand;

– self-educational computer networks that build interaction with external systems and should become a platform of career development and lifelong learning for graduates from P(V)E schools.

In Ukraine, technological challenges go along with radical changes related to the modernization of the state itself, its social and economic relations, and the system of education and science (Radkevych, 2018). Thus, Ukraine's professional (vocational) education is undergoing a profound transformation. This transformation is characterized by the following:

– reforms in educational management;

– creation of their new structure and system of interaction;

– diversification of funding sources;

– an increasing role of educational institutions' autonomy, incentives for developing and implementing new educational forms and methods (including the elements of dual and distance education);

– the changing forms of interaction between stakeholders in the framework of public-private partnership;

– promotion of scientific-experimental, analytical, and consultative activities of the actors in the educational community;

– the growing requirements for the content and quality of professional education.

Thus, the Ukrainian system of professional education is to bring the quality of such education more in line with the technological challenges of today. This is one of the seventeen goals of sustainable development (Goal 4 "Quality Education"). By achieving it, it will become possible to continue the innovative, socio-economic, and cultural development of society through the implementation of the lifelong right to P(V)E based on the principle of equal opportunities for all people. Besides, it will ensure the growth of the country's economy, accelerate qualitative changes in the social sphere and production automation processes, and enhance employees' qualifications. Consequently, unemployment rates will reduce due to specialists' retraining at high-tech enterprises, and new and in-demand professions will appear.

Below are the high-priority objectives to assure education quality:

– to update the policy in the field of professional education;

– to accelerate its modernization at the regional level;

– to increase financial, academic, employee, and organizational autonomy of P(V)E schools;

– to establish regional multidisciplinary, high-tech centres of professional education to provide high-quality specialist training;

– to update the content of education and comply it with the needs of social development;

– to create conditions for the integration of P(V)E with the labour market.

In this regard, the mission of Ukraine's professional education should be the creation of an effective educational environment, the involvement of more young people and adults in it and thus an increase in employment rates by 2030, the preparation of teachers who are willing to bring professional training of specialists for the post-industrial economy to a new level.

Sources. It must be noted that the quality of education, as well methods of its evaluation, has always been an important component of the state education policy in developed countries. In Ukraine, several important educational objectives associated with the problems of qualitology and qualimetry gained newfound relevance in the early 21st century. These objectives include the following:

– distribution of responsibility for education quality between the state, educational institutions, and employers;

– improvement of the national system of education quality evaluation (internal and external);

– elaboration of principles and mechanisms for monitoring the internal system of education quality assurance;

– creation of effective procedures for assessing future specialists' knowledge, skills, and abilities;

– study of international experience in developing and implementing a system of education quality evaluation and introducing its best examples in the Ukrainian system of professional education.

For the past few decades, both the state and the research-teaching community have been striving to

determine the most optimal criteria and indicators to evaluate education quality. These issues are partially covered by certain national documents, including the concept of state policy implementation in the field of professional (vocational) education "Modern Professional (Vocational) Education" for the period up to 2027"; the strategies for developing professional (vocational) education for the period up to 2023; Ministerial Order "On the Approval of the State Standard of Professional (Vocational) Education"; the National Qualifications Framework (NQF). All together they bring Ukraine closer to current trends in the European Union. These documents act as the basis for education standards that are expected to increase the relevance of knowledge, skills, abilities, and competencies that future specialists should acquire. In 2021, the President of Ukraine established the Council for the Development of Professional (Vocational) Education as an advisory body to unite the efforts of all stakeholders, modernize the industry and provide additional tools to assure quality training of skilled workers. Even though Ukraine has adopted several important education laws ("On Education", "On Professional Higher Education", "On Higher Education", "On Complete Secondary Education"), the country is still working on the draft law of Ukraine "On Professional Education". This greatly complicates the application of the current law "On Professional (Vocational) Education" (1998), as well as the reforms in the education system.

Furthermore, current documents do not contain direct answers to the questions on mechanisms for assuring education quality and only outline certain guidelines. As stated by the teaching community (Hromadskyi prostir, 2020), the concept of state policy implementation in the field of P(V)E "Modern Professional (Vocational) Education" for the period up to 2027" does not consider the above-mentioned challenges. In essence, the mission of the concept lies in reforming P(V)E in three main areas:

– decentralization of education management and financing;

– definition of regional demand indicators based on the analysis of the labour market;

– assurance of P(V)E quality.

Accordingly, one can assure the quality of P(V)E by:

– building the content of P(V)E on the necessary competencies;

– introducing both internal and external systems of education quality assurance;

– modernizing the educational environment via innovativity, accessibility, transparency, flexibility, and openness of the educational process;

– enhancing teacher training in the field of P(V)E; e) implementing mechanisms for promoting professional development among teachers (Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy, 2020).

Thus, the issue of creating an effective system of education quality assurance should be studied more in detail.

The article aims to describe the mission and objectives of scientific-methodical support to assure the quality of P(V)E in terms of its modernization, justify the role of the Institute of VET of the NAES of Ukraine in enabling P(V)E schools to assure the quality of educational services they provide, as well as of educational management, and create an internal system of education quality assurance.

Regarding **research methods**, the article theoretically analyzes Ukraine's education legislation in the field of P(V)E, scientific sources, taught and research degrees to determine the main areas and ways to bring the quality of professional education more in line with technological and socio-economic challenges of the post-industrial society.

Results and discussion. A detailed analysis of current education legislation indicates the concern of scholars, practitioners, and educational managers with the two main vectors, namely, learning outcomes and conditions to achieve them. Traditionally, most of the research was focused on the quality of learning outcomes. Over time, however, the emphasis shifted to the conditions of P(V)E schools that would contribute to achieving learning outcomes properly. Consequently, these two different approaches should be coordinated and justified.

Education quality used to be evaluated under the knowledge-based paradigm. Lerner (1978), for example, distinguished such characteristics of knowledge as *integrity* (extent of knowledge / amount of expected outcomes), *depth* (awareness of essential links within acquired knowledge), *consistency* (awareness of structure, hierarchy, and chain of knowledge), *systematicity* (invariance of certain knowledge's role), *efficiency* (situations/ways of applying acquired knowledge), *flexibility* (independent selection of necessary knowledge in changing situations), *generalizability, comprehensiveness* and *convolution* (the ability to explain and generalize precisely), *awareness* (realization of links and ways of acquiring knowledge),

strength (stable memorization of knowledge, methods of its application; readiness to acquire new knowledge). Educational institutions were expected to assure objective control over the quality of students' knowledge based on all these criteria. Still, it was not always possible, despite the capacity of the five-point grading scale, today's twelve-point grading scale, and well-known systems for assessing student knowledge (module rating and credit module ones).

However, rapid technological changes have increased demands of both the society and the state for the quality of professional education and, thus, marked the transition to a competence-based paradigm for evaluating its quality. It was competence, as the ability to use knowledge, skills, abilities, and experience in professional and life situations, that was recognized as a learning outcome. This particular issue gradually reached the public level, leaving the sphere of narrow professional use. Honcharenko (2007, p. 50) called education quality "the most important factor in the sustainable development of the country, its technological, economic, informational, and moral security". Yazykov (2006, p. 106) highlighted the issue of responsibility of P(V)E schools and regional systems for the outcomes of their activities to society, which led to the improvement of technologies for evaluating such activities. There are two levels of management of professional education quality: local (an educational institution) and regional (education system). At the local level, it was expected to create favourable conditions for personal and professional development of future specialists; at the regional level – for development and modernization of the P(V)E system under the needs of regional markets.

At the same time, many researchers (V. Lokhanova, O. Maiorov, S. Podmazin, H. Yelnykova et al.) tend to use the term "educational monitoring" as a system for collecting, processing, storing, and disseminating information about the state of the education system (or its components) to enable information management of the system and makes prognoses about its development. In other words, educational monitoring is defined as a system that consists of "indicators combined into a standard and constant monitoring of the condition and dynamics of the managed object under these indicators (standards) to diagnose it promptly, detect any imbalances, make, and correct managerial decisions" (Yelnykova, 2007, p. 35). In this regard, the notion of "education quality" should be considered as the extent to which the defined standard of activity has been achieved. The theory of educational monitoring has given a new impetus to the development of ideas of pedagogical qualimetry (Hryhorash, 2014; Kukhta & Ratsiuk, 2009; Sokol et al., 2019).

Current education legislation expands the capacities of P(V)E schools to develop autonomy, which has led to increased attention from the state and the society to the mechanisms for evaluating learning outcomes, as well as educational and managerial activities of the institutions themselves. On the one hand, the autonomy of professional education depends on the real powers of local educational institutions; on the other hand, – on the system of the state's control and support (MON Ukrainy, 2020). Therefore, it is essential 1) to develop an objective system for evaluating an internal system of education quality assurance, 2) to determine clear and legally protected criteria and indicators for evaluating its quality. Such criteria and indicators may be found in standards (professional, educational, evaluative), guidelines, instructions, decisions of pedagogical councils, other normative and pedagogical documents (Radkevych, Luzan & Kravets, 2017).

In 2021, the Ministry of Education and Science of Ukraine issued Order No 509 "On the Approval of Guidelines for Establishing an Internal System of Education Quality Assurance in Professional (Vocational) Education Schools". This document defines the components of such an internal system: a strategy (policy) and procedures for education quality assurance; a system and mechanisms for ensuring academic integrity; criteria, rules, and procedures for students' and teachers' evaluation; resources to organize the educational process and independent work of students, as well as information systems to enable educational management; creation of an inclusive educational environment, universal design and intelligent adaptation in educational institutions. Besides, these guidelines (MON Ukrainy, 2021, p. 3) identify the four main work areas of P(V)E schools in terms of assuring education quality: improving education legislation, educational environment, systems for evaluating students' educational attainment and teachers' readiness for modernization and management of P(V)E schools.

To achieve these objectives, P(V)E schools require appropriate scientific-methodical support, which, for many years already, has been provided by the Institute of VET of the NAES of Ukraine as a scientific platform for assuring the quality of professional education (Kremen, 2016, pp. 95–97).

Research officers of the Institute have developed pedagogical innovations and products for each area

to assist managers and teachers, on the one hand, to improve educational and managerial processes and, on the other hand, assess these processes, as well as an internal system of education quality assurance, objectively. Regarding the quality of professional education, these innovations include the following: the concept of an informational and educational environment of P(V)E schools; the content library that includes a database of teaching materials, electronic educational resources for professional, practical, and socio-economic disciplines, electronic encyclopaedias and reference books; a distance learning system; relevant methods of creating distance learning courses for the P(V)E system, using elements of distance learning in theoretical training of future skilled workers, organizing independent work via distance learning.

To improve the system of students' evaluation, they have developed the concept of professional training standardization; relevant methods of developing self-directed learning skills, monitoring the effectiveness of distance learning, evaluating students' projects; relevant testing technologies; methods of organizing independent work via distance learning.

Concerning the improvement of teaching, they have developed and implemented relevant methods and technologies for enhancing professional competence in masters of vocational training; self-directed learning skills, legal culture, energy efficiency skills and readiness to standardize professional training in teachers; organization of dual education and distance learning in P(V)E schools; SMART-complexes for various industries; teachers' skills in using project technologies to develop career and entrepreneurship competences in students. The list of all the pedagogical innovations and products is available on the Institute's website.

Modernization of professional education eventually increases the requirements for professional training of teachers and managers. Therefore, the Institute of VET of the NAES of Ukraine pays considerable attention to training highly qualified research staff through master's and doctoral studies. Currently, the Institute enrols 35 students on such degrees as "13.00.04 – Theory and Methods of Professional Education" and "015 – Professional Education (by Specializations)". Those applicants who already have some work experience in the system of professional education can obtain the right to study at the expense of the state on a completive basis. There is another reason why training highly qualified teachers is important for the system of professional education. Current education legislation specifies the need of P(V)E schools for specialists who can evaluate educational and managerial processes on their own. This requires coordinated actions from teaching staff, as well as effective educational management. In turn, the effectiveness of these processes depends on the professionalism of teaching staff and managers of P(V)E schools. Therefore, the taught master's programme on "011 Pedagogy of Higher Education" offered by the Institute of VET of the NAES of Ukraine aims to train innovative teachers (facilitators, coaches) who can organize student-centred learning, develop competencies through participation in research, and use innovative learning technologies (business games, case studies, professional-situational modelling) with ICT support. The PhD programme on "015 Professional Education / Theory and Methods of Professional Education" seeks to prepare highly qualified and competitive research officers who can carry out creative, autonomous, and responsible innovative-research, scientific-pedagogical, project-related, managerial, and expert-advisory activities in the field of professional education. Besides, they should be able to conduct and defend independent scientific research with their further integration into the global scientific and educational space to enhance the image of Ukrainian professional education. The goals defined in the above-mentioned programmes lie in developing those skills and competencies in students that will contribute to realizing the objectives of the current education legislation in terms of reforming professional education, improving its quality and prestige (IPTO NAPN Ukrainy, 2020, p.4).

To modernize managerial processes in P(V)E schools, research officers of the Institute have justified their management as such of project-oriented organizations, and how one uses content solutions to manage their project activities. For this purpose, they have prepared, validated, and implemented methods of marketing support for P(V)E schools; a project management technology; a project implementation algorithm; a technology of social partnership development; a roadmap for employers to implement dual education in P(V)E schools.

To evaluate the quality of educational and managerial activities of P(V)E schools, one can use certain criteria (grounds for evaluation), indicators (reflecting the state of the observed objects, their qualitative or quantitative characteristics) and methods of collecting information. Thus, those teachers who have obtained a scientific degree are more motivated towards student-centred learning and comprehen-

sive solutions to problems in professional-pedagogical and innovative activities of educational institutions, and thus more able to meet state-defined criteria for assuring professional education quality and evaluate educational and managerial processes effectively.

It is also essential to expand the use of pedagogical innovations developed by the research officers of the Institute to solve urgent problems regarding the assurance of professional education quality. The Institute of VET of the NAES of Ukraine serves as a scientific platform whose communicative basis is close practical cooperation with P(V)E schools, learning (research) and methodical centres (offices), various stakeholders interested in the modernization of the Ukrainian professional education system, state and local authorities, ministries, departments, agencies, as well as promotion of international scientific collaboration.

Conclusions. The article identifies the two main drivers of addressing the research problem on the assurance of professional education quality (the focus of educational management on learning outcomes, as well as the conditions to achieve them). Besides, it singles out the main objectives regarding the assurance of professional education quality: creating an effective educational environment; promoting the professional development of teachers who should be willing to bring professional training of specialists for the post-industrial economy to a new level; improving educational management in P(V)E schools. The article describes the main conditions for assuring professional education quality. They are as follows: improving the policy in the field of P(V)E; adjusting its content to the needs of society, economy, labour market; accelerating the modernization of professional education at the regional level; expanding the autonomy of P(V)E schools; enhancing professional qualifications of the research and teaching staff. The article shows that the prerequisite for realizing these objectives is the effective scientific-methodical support for P(V)E schools in terms of an internal system of education quality assurance. Importantly, the article justifies the mission of such scientific-methodical support: promoting scientific achievements and advanced scientific-pedagogical experience; training the research and teaching staff for professional and professional pre-higher and higher education systems; providing the research and teaching staff with advanced training; enabling scientific management of innovative educational activities in P(V)E schools in the framework of all-Ukrainian and regional experiments to verify the effectiveness and further implement the author's pedagogical innovations to assure the quality of professional education; carrying out analytical and consultative activities to influence the state's education policy and activities of educational institutions regarding education quality assurance. In doing so, the appropriate scientific-methodical support for the modernization of Ukrainian P(V)E will provide both the society and the economy with highly qualified specialists who can effectively work in the dynamic conditions of the post-industrial society.

List of references

Артюхова О., 2016. Моніторинг якості вищої професійної освіти в українських університетах. *Педагогічні науки: теорія, історія, інноваційні технології*, 7(61), с.133-143.

Верховна рада України. Законодавство України, 2020. *Концепція реалізації державної політики у сфері професійної (професійно-технічної) освіти «Сучасна професійна (професійно-технічна) освіта» на період до 2027 року* [online] (Останнє оновлення 12 Червень 2019) Доступно: <https://zakon.rada.gov.ua/laws/show/419-2019-%D1%80#Text> [Дата звернення 10 Червень 2021].

Григораш, В., 2014. Кваліметричний підхід до експертного оцінювання навчально-виховного процесу. *Педагогіка формування творчої особистості у вищій і загальній школах*, 34, с.140-146.

Гончаренко, С.У., 2007. Про якість професійної освіти. В: *Професійне становлення особистості: проблеми і перспективи: Матеріали IV міжнародної науково-практичної конференції. Хмельницький: Авіст*, с. 50-54.

Громадський простір, 2020. *Професійна освіта в сучасних умовах. Погляд з боку. Частина 2*. [online] (Останнє оновлення 17 Березень 2020) Доступно: < http://surl.li/yyob> [Дата звернення 10 Червень 2021].

Єльникова, Г. та Рябова, З., 2007. Моніторинг як ефективний засіб оцінювання якості загальної середньої освіти в навчальному закладі. Культура народов Причерноморья, 115, т.1, с.35-43.

Інститут професійно-технічної освіти НАПН України (ІПТО НАПН України), 2020. *Освітньо-наукова програма з підготовки докторів філософії за спеціальністю 015 Професійна освіта/Теорія і методика професійної освіти».* [online] (Останнє оновлення: 18 Травень 2020) Доступно: <http://surl.li/yxac> [Дата звернення: 26 Травень 2021].

Кремень, В. Г., ред., 2016. *Національна доповідь про стан і перспективи розвитку освіти в Україні*. Київ: Педагогічна думка, с.95-97.

Кухта, М. та Рацюк, О., 2009. Основи педагогічної кваліметрії у змісті професійної підготовки майбутнього вчителя. *Науковий вісник Ужгородського національного університету. Серія: Педагогіка, соціальна робота*, 16-17, с.63-64.

Лернер, И.Я., 1978. Качества знаний учащихся. Какими они должны быть? М.: Знание.

Луговий, В. І. та Таланова, Ж. В., 2012. *Якість вищої освіти: виклик для України. Вища освіта України*. К. : Педагогічна преса. Т. 1, с.5-9.

Міністерство освіти і науки України (МОН України), 2019. *Серпнева конференція 2019. Секція «Автономія закладів професійної освіти: вчора, сьогодні, завтра»*. [online] (Останнє оновлення Серпень 2019) Доступно: <http://surl.li/yykt> [Дата звернення 10 Червень 2021].

Міністерство освіти і науки України (МОН України), 2021. *Про затвердження методичних рекомендацій з питань формування внутрішньої системи забезпечення якості освіти у закладах професійної (професійно-технічної) освіти» наказ Міністерства освіти і науки України* (№509 від 06.05.2021 р.) [online] (Останнє оновлення: 06 Травень 2021) Доступно: file:///C:/Users/Deluxe/Downloads/609513858184612244280 6%20(2).pdf [Дата звернення 26 Травень 2021].

Радкевич, В., 2018. Науково-методичний супровід модернізації вітчизняної системи професійної та фахової передвищої освіти у контексті євроінтеграційних процесів. *Професійна педагогіка*, [online] 15, с. 5-15. Доступно: <https://jrnls.ivet.edu.ua/index.php/1/article/view/34> [Дата звернення 1 Травень 2021].

Радкевич, В.О., Лузан, П.Г. та Кравець, С.Г., 2017. Стандартизація професійної освіти в контексті євроінтеграційних процесів. В: *Наукове забезпечення розвитку освіти в Україні: актуальні проблеми теорії і практики (до 25-річчя НАПН України): збірник наукових праць*. К. : Видавничий дім «Сам», с. 259-267.

Сокол, Є, Романовський, О., Підбуцька, Н., Гура, Т., Книш, А. та Шаполова, В., 2019. Психолого-педагогічна кваліметрія в оцінці якості освіти майбутніх фахівців у Національному технічному університеті «Харківський політехнічний інститут». *Теорія і практика управління соціальними системами: філософія, психологія, педагогіка, соціологія*, 3, с. 38-55.

Язиков О.І., 2006. Моніторинг якості професійно-технічної освіти як складова інформаційного та управлінського забезпечення системи ПТО. *Професійна освіта: теорія і практика: науково-методичний журнал*, 1-2 (23-24), с. 106-121.

Translated & Transliterated

Artiukhova O., 2016. Monitorynh yakosti vyshchoi profesiinoi osvity v ukrainskykh universytetakh [Monitoring the quality of higher professional education at Ukrainian universities]. *Pedahohichni nauky: teoriia, istoriia, innovatsiini tekhnolohii [Pedagogical Sciences: Theory, History, Innovative Technologies]*, 7(61), s.133-143, [in Ukrainian].

Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 2020. *Kontseptsiia realizatsii derzhavnoi polityky u sferi profesiinoi (profesiino-tekhnichnoi) osvity "Suchasna profesiina (profesiino-tekhnichna) osvita" na period do 2027 roku [The concept of state policy implementation in the field of professional (vocational) education "Modern Professional (Vocational) Education" for the period up to 2027*] [online] (Ostannie onovlennia 12 Cherven 2019) Dostupno: <https://zakon.rada.gov.ua/laws/show/419-2019-%D1%80#Text> [Data zvernennia 10 Cherven 2021], [in Ukrainian].

Hryhorash, V., 2014. *Kvalimetrychnyi pidkhid do ekspertnoho otsiniuvannia navchalno-vykhovnoho protsesu [A qualimetric approach to expert evaluation of the educational process]*. Pedahohika formuvannia tvorchoi osobystosti u vyshchii i zahalnii shkolakh [Pedagogy for Developing Creative Personality in Higher Education Institutions and Comprehensive Schools], 34, s.140-146, [in Ukrainian].

Honcharenko, S.U., 2007. Pro yakist profesiinoi osvity [On the quality of professional education]. *V: Profesiine stanovlennia osobystosti: problemy i perspektyvy: Materialy IV mizhnarodnoi naukovo-praktychnoi konferentsii [Professional Development of Individuals: Problems and Prospects: Proceedings of the 5th International Scientific-Practical Conference]*. Khmelnytskyi: Avist, s. 50-54, [in Ukrainian].

Hromadskyi prostir [*Public Space*], 2020. *Profesiina osvita v suchasnykh umovakh. Pohliad z boku. Chastyna 2 [Professional education in current conditions. An outside perspective. Part 2*]. [online] (Ostannie onovlennia 17 Berezen 2020) Dostupno: <http://surl.li/yyob> [Data zvernennia 10 Cherven 2021], [in Ukrainian].

Yelnykova, H. ta Riabova, Z., 2007. Monitorynh yak efektyvnyў zasib otsiniuvannia yakosti zahalnoї serednoї osvity v navchalnomu zakladi [Monitoring as an effective means of evaluating the quality of secondary education]. *Kultura narodov Prychernomoria [Culture of the Peoples of the Black Sea Region*], 115, t.1, s.35-43, [in Ukrainian].

Instytut profesiino-tekhnichnoi osvity NAPN Ukrainy (IPTO NAPN Ukrainy), 2020. *Osvitno-naukova prohrama z pidhotovky doktoriv filosofii za spetsialnistiu 015 Profesiina osvita/Teoriia i metodyka profesiinoi osvity» [The PhD programme on "015 Professional Education / Theory and Methods of Professional Education"*]. [online] (Ostannie onovlennia: 18 Traven 2020) Dostupno: <http://surl.li/yxac> [Data zvernennia: 26 Traven 2021], [in Ukrainian].

Kremen, V. H., red., 2016. *Natsionalna dopovid pro stan i perspektyvy rozvytku osvity v Ukraini [The national report on the state and prospects of Ukraine's education].* Kyiv: Pedahohichna dumka [Pedagogical Viewpoint], s.95-97, [in Ukrainian].

Kukhta, M. ta Ratsiuk, O., 2009. Osnovy pedahohichnoi kvalimetrii u zmisti profesiinoi pidhotovky maibutnoho vchytelia [The basics of pedagogical qualimetry in the content of professional teacher training]. *Naukovyi visnyk Uzhhorodskoho natsionalnoho universytetu. Seriia: Pedahohika, sotsialna robota [Scientific Bulletin of Uzhhorod University. Series: "Pedagogy, Social Work"]*, 16-17, s.63-64, [in Ukrainian].

Lerner, I.Ya., 1978. *Kachestva znaniy uchaschihsya. Kakimi oni dolzhnyi byit?* [*The quality of teacher's knowledge. What should it be like?]*. M.: Znanie [Knowledge], [in Ukrainian].

Luhovyi, V. I. ta Talanova, Zh. V., 2012. Yakist vyshchoi osvity: vyklyk dlia Ukrainy [Higher education quality: a challenge for Ukraine]. *Vyshcha osvita Ukrainy [Higher Education of Ukraine]*. K. : Pedahohichna presa [Pedagogical Press]. T. 1, s.5-9, [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy (MON Ukrainy), 2019. *Serpneva konferentsiia 2019. Sektsiia «Avtonomiia zakladiv profesiinoi osvity: vchora, sohodni, zavtra» [August Conference 2019. Section "Autonomy of Professional Education Schools: Yesterday, Today, Tomorrow"*]. [online] (Ostannie onovlennia Serpen 2019) Dostupno: <http://surl.li/yykt> [Data zvernennia 10 Cherven 2021], [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy (MON Ukrainy), 2021. *Pro zatverdzhennia metodychnykh rekomendatsii z pytan formuvannia vnutrishnoi systemy zabezpechennia yakosti osvity u zakladakh profesiinoi (profesiino-tekhnichnoi) osvity» nakaz Ministerstva osvity i nauky Ukrainy (№509 vid 06.05.2021 r.) ["On the Approval of Guidelines for Establishing an Internal System of Education Quality Assurance in Professional (Vocational) Education Schools", Order No 509 of the Ministry of Education and Science of Ukraine*] [online] (Ostannie onovlennia: 06 Traven 2021) Dostupno: file:///C:/Users/Deluxe/Downloads/609513858184612244280 6%20(2).pdf [Data zvernennia 26 Traven 2021], [in Ukrainian].

Radkevych. V., 2018. Naukovo-metodychnyi suprovid modernizatsii vitchyznianoi systemy profesiinoi ta fakhovoi peredvyshchoi osvity u konteksti yevrointehratsiinykh protsesiv [Psychological and pedagogical qualimetry in estimation of quality of education of future professionals in the National technical university "Kharkiv polytechnical institute"]. *Profesiina pedahohika [Professional Pedagogics]*, [online] 15, s. 5-15. Available at: <https://jrnls.ivet.edu.ua/index.php/1/article/view/34> [Assessed 01 May 2021], [in Ukrainian].

Radkevych, V.O., Luzan, P.H. ta Kravets, S.H., 2017. Standartyzatsiia profesiinoi osvity v konteksti yevrointehratsiinykh protsesiv [Professional education standardization in the context of European integration processes]. V: *Naukove zabezpechennia rozvytku osvity v Ukraini: aktualni problemy teorii i praktyky (do 25-richchia NAPN Ukrainy): zbirnyk naukovykh prats [Scientific Support for Education Development in Ukraine:*

Relevant Problems of Theory and Practice (Dedicated to the 25th Anniversary of the NAES of Ukraine): a Collection of Scientific Works]. K. : Vydavnychyi dim «Sam» [Publishing House "Sam"], s. 259-267, [in Ukrainian].

Sokol, Ye, Romanovskyi, O., Pidbutska, N., Hura, T., Knysh, A. ta Shapolova, V., 2019. Psykholoho-pedahohichna kvalimetriia v otsintsi yakosti osvity maibutnikh fakhivtsiv u Natsionalnomu tekhnichnomu universyteti "Kharkivskyi politekhnichnyi instytut" [Psychological and pedagogical qualimetry in estimation of quality of education of future professionals in the National technical university "Kharkiv polytechnical institute"]. *Teoriia i praktyka upravlinnia sotsialnymy systemamy: filosofiia, psykholohiia, pedahohika, sotsiolohiia [Theory and Practice of Social Systems Management: Philosophy, Psychology, Pedagogy, Sociology]*, 3, s. 38-55, [in Ukrainian].

Yazykov O.I., 2006. Monitorynh yakosti profesiino-tekhnichnoi osvity yak skladova informatsiinoho ta upravlinskoho zabezpechennia systemy PTO [Monitoring the quality of vocational education as a component of information and management support for the vocational education system]. *Profesiina osvita: teoriia i praktyka: naukovo-metodychnyi zhurnal [Professional Education: Theory and Practice: a Scientific-Methodical Journal]*, 1-2 (23-24), s. 106-121, [in Ukrainian].

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НАУКОВА ПЛАТФОРМА ЗАБЕЗПЕЧЕННЯ ЯКОСТІ ПРОФЕСІЙНОЇ (ПРОФЕСІЙНО-ТЕХНІЧНОЇ) ОСВІТИ

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Реферат:

Актуальність дослідження визначається викликами постіндустріального суспільства щодо забезпечення якості професійної (професійно-технічної) освіти (далі – П(ПТ)О).

Мета: охарактеризувати місію і завдання науково-методичного супроводу забезпечення якості П(ПТ)О в умовах її модернізації.

Методи: теоретичний аналіз освітнього законодавства України в галузі П(ПТ)О, наукових джерел, освітньо-професійних та освітньо-наукових програм з підготовки здобувачів вищої освіти – для визначення основних напрямів і способів приведення якості професійної освіти у відповідність з техніко-технологічними та соціально-економічними викликами постіндустріального суспільства.

Результати: виокремлено два основні вектори формування наукової проблеми забезпечення якості професійної освіти – зосередженість освітнього менеджменту на результатах освіти та умовах, необхідних для їх отримання; визначено основні завдання щодо забезпечення якості професійної освіти та необхідні для їх реалізації умови; обґрунтовано роль наукових установ у підвищенні ефективності закладів П(ПТ)О щодо забезпечення якості їхньої освітньої й управлінської діяльності та формування внутрішньої системи забезпечення якості освіти.

Висновки: визначено основні завдання вітчизняної професійної освіти щодо забезпечення її якості (створення ефективного освітнього середовища, підвищення кваліфікації педагогів; удосконалення освітнього менеджменту закладів П(ПТ)О; розроблення ефективної системи внутрішнього забезпечення якості освіти); показано, що важливою умовою ефективного вирішення визначених

завдань є якісний науково-методичний супровід діяльності закладів П(ПТ)О, охарактеризовано його місію (підготовка фахівців нової якості, готових ефективно й успішно працювати в динамічних умовах постіндустріального суспільства) та завдання (популяризація наукових досягнень; поширення передового науково-педагогічного досвіду, підготовка педагогічних і науково-педагогічних кадрів для системи професійної освіти; здійснення наукового керівництва інноваційною освітньою діяльністю закладів П(ПТ)О; проведення інформаційно-аналітичної, експертної, консультативної і дорадчої діяльності для забезпечення впливу на освітню політику держави та практичну діяльність освітніх установ у питаннях забезпечення якості освіти).

Ключові слова: *професійна освіта, якість професійної освіти, внутрішня система забезпечення якості професійної освіти, науково-методичний супровід професійної освіти.*

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ANALYZING REGULATORY SUPPORT FOR PROFESSIONAL DEVELOPMENT OF MASTERS OF VOCATIONAL TRAINING IN THE SYSTEM OF METHODICAL WORK

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Abstract.

Relevance: current transformations and challenges of professional (vocational) education (hereinafter "P(V)E") determine the new requirements for masters of vocational training as the main bearers and developers of skills. This necessitates their continuing professional development. It is professional development of masters of vocational training that acts as the basis for high-quality training in the P(V)E system. At the same time, effective regulatory support ensures the success of such professional development.

The article *aims* to analyze regulatory documents in the field of education for the requirements for professional development of masters of vocational training.

Research methods include the following: theoretical (theoretical analysis of regulatory documents on the problem of professional development of masters of vocational training in the system of methodical work in P(V)E schools); empirical (a study and analysis of regulatory support for professional development of masters of vocational training in the system of methodical work).

Results: the article presents the results from a theoretical analysis of regulatory documents for the requirements for professional development of masters of vocational training.

Conclusions: conceptual educational documents regulate the need for professional development of masters of vocational training. They associate professional development with methodical work of teaching staff. Besides, these documents state that professional development covers instructional-methodical, scientific-methodical, organizational-methodical, reference-methodical and other types of methodical work. Professional development of vocational training masters should be one of the strategic priorities of P(V)E schools today and motivate teachers to enhance their professional skills to improve the quality of education.

Keywords: *professional development, masters of vocational training, regulatory support, professional (vocational) edu-cation schools.*

Introduction. Current transformations and challenges of P(V)E determine the new requirements for masters of vocational training as the main bearers and developers of skills. This necessitates their continuing professional development. In turn, conceptual educational documents regulate the need for professional development of masters of vocational training. It is their professional development that acts as the basis for high-quality training in the P(V)E system. At the same time, effective regulatory support ensures the success of these specialists' professional development.

Sources. Indeed, it is essential to enhance professional-pedagogical competence of masters of vocational training, given the ongoing updates in the professional training system, the emergence of new production technologies, and the development of the information society. The adoption of the Law of

Ukraine "On Education" as of 2017 has only contributed to the relevance of the problem in question. As stated by paragraph 1 of Article 59 "Professional Development and Advanced Training of Research and Teaching Staff" of this law, "professional development of research and teaching staff covers continuous self-education, participation in professional development programmes and any other types and forms of professional growth. Educational institutions which employ research and teaching staff shall promote their professional development and advanced training". Therefore, educational institutions are to create appropriate conditions for professional development of vocational training masters in the framework of implementing the Law of Ukraine "On Education".

In "The White Book of National Education of Ukraine" (2009), reference has already been made about many teachers' unwillingness to understand and use pedagogical innovations that largely hampers innovative development of P(V)E (Kremen, 2009, p. 89).

The mentioned document specifies the main reasons why P(V)E teachers lack the necessary skills: insufficient awareness of teachers and masters of vocational training about effective innovative methods of conducting theoretical and industrial (practical) classes; low levels of methodical skills; ineffective approaches to managing methodical work of teachers; teachers' stereotypical attitudes towards theoretical classes and industrial (practical) training. Furthermore, professional training of P(V)E teachers does not provide for them to be trained for innovative activities. The teachers themselves have only a superficial understanding of pedagogical technologies and fail to use them in the educational process (Kremen, 2009, p. 93).

Many studies prove that teachers can achieve high levels of professional and, especially, methodical, skills, once they have realized the need for professional development, and self-improvement. Also, they should demonstrate a motivational-axiological attitude towards methodical activities and have self-regulation, self-organization, and self-control skills (Shovkun, 2010, p. 134).

Thus, it is essential to find out how professional development of masters of vocational training is related to regulatory documents in the field of education.

The article aims to analyze regulatory documents in the field of education for the requirements for professional development of masters of vocational training.

Research methods include the following: theoretical (theoretical analysis of regulatory documents on the problem of professional development of vocational training masters in the system of methodical work in P(V)E schools); empirical (a study and analysis of regulatory support for professional development of masters of vocational training in the system of methodical work).

Results and discussion. Today it is vital to modernize the P(V)E system and improve its management, as stated in several regulatory documents on the main reforms in professional education.

The State National Programme "Education" ("21st Century Ukraine") declares the priority of teachers' professional development. It is teachers that should become the main driving force of revival and creation of a qualitatively new national education system. Thus, it is important to train a new generation of teachers and reinforce their general culture, professional competence and social status to a level corresponding to their role in society. One of the main ways to do that is to ensure continuous education among teachers, enhance their professionalism, and culture (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 1993).

The Decree of the President of Ukraine "On the National Strategy of Education Development in Ukraine until 2021" (2013) states that "the efforts of education authorities, scientific-methodical services with the support of society and the state should be focused on enforcing strategic areas in education development, overcoming existing problems, fulfilling pressing objectives". The main objectives of the National Strategy are as follows: a) to improve the system of training, retraining and advanced training of teaching, research and managerial staff of educational institutions and b) to enhance their managerial culture. Therefore, one should improve the system of training, retraining and advanced training of research and teaching staff of P(V)E schools to ensure sustainable development and effective breakthrough of the national P(V)E system (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2013).

The National Economic Strategy 2030 (Uriadovyi portal, 2021) contains a coordinated vision for the strategic course of Ukraine's economic policy, which considers global trends and the state's capabilities. One of the strategic courses of Ukraine's economic policy is "The Strategic Life Quality Course". They have formulated the objective on the implementation of education content and quality to achieve the first strategic goal of this strategic course ("Creating an Inclusive, Innovative and Educated

Society in which Citizens Have Equal Rights and Opportunities to Develop Their Talent throughout Their Lives"). What is important for the research is the fact that one of the ways to achieve strategic goals in the education content and quality section (see "P(V)E Development Chapter") is "to create conditions for professional development of P(V)E teachers".

The main documents that highlight professional development of masters of vocational training are the Laws of Ukraine "On Education" (2017), "On Professional (Vocational) Education" (1998), "On Professional Development of Employees" (2012). Part 2 of Article 54 of the Law of Ukraine "On Education" (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2017) states that teachers shall constantly improve their professional, cultural and pedagogical skills.

As shown by Article 45 of the Law of Ukraine "On Professional (Vocational) Education" (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 1998), teachers must be certified to ascertain their suitability for their present position and provide proof of their professional abilities. The central executive body determines the frequency of compulsory certification and the procedures foreseen for its exercise. This ensures the formation and implementation of state policy in the field of education and science. The decisions of the certification council act as the basis for assigning to a teaching professional the corresponding category or dismissing him or her in the order provided by the legislation.

According to Part 6 of Article 18 of the Law of Ukraine "On Education" (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2017), advanced training means the acquisition of new and/or enhancement of previously acquired competences as part of professional activities or expertise. Therefore, any forms and types of professional development chosen by a teaching professional must lead to the acquisition of new and/or enhancement of existing competences (knowledge, skills, abilities).

Article 2 of the Law of Ukraine "On Professional Development of Employees" (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2012) asserts that "state policy in the field of employees' professional development follows the principles of accessibility of professional development to employees; employer's free choice of forms and methods of ensuring employees' professional development under job specifics; observance of employer's and employee's interests; continuity of employees' professional development".

The procedure for professional development of research and teaching staff, approved by the order of the Cabinet of Ministers of Ukraine "Some Issues of Professional Development of Research and Teaching Staff" (2014) is an important regulatory document that reveals theoretical and methodological principles of professional development for masters of vocational training. The document states that advanced training of teaching staff is "provided by founders of educational institutions (or their authorized bodies), as well as by governing bodies of relevant educational institutions, within the powers and under the law". At the same time, research and teaching staff are obliged to constantly engage in professional development. The aim of advanced training of research and teaching staff is their professional development following state policy in the field of education and education quality assurance. Research and teaching staff can improve their qualifications in various forms and types. Forms of professional development are institutional (full-time, part-time, distance, dual, in-service, in production) and can be combined. The main types of advanced training are training programmes, including participation in seminars, workshops, webinars; internships (Ministerstvo osvity i nauky Ukrainy, 2014).

The approval of the professional standard "Master of Vocational Training" has played a no less important role in establishing conceptual legal prerequisites for professional development of these specialists (Natsionalna akademiia pedahohichnykh nauk Ukrainy, 2019). According to the background information of the standard, "the main goal of professional activities of vocational training masters is the organization and provision of professional-practical training (in terms of industrial training and practice)" (Ministerstvo rozvytku ekonomiky, torhivli ta silskoho hospodarstva Ukrainy, 2019).

A detailed analysis of the professional standard shows that Chapter 2 deals with the preparation and professional development of masters of vocational training. Also, the standard includes generic competences of these specialists, including the capacity for self-improvement (Ministerstvo rozvytku ekonomiky, torhivli ta silskoho hospodarstva Ukrainy, 2019). Job functions of masters of vocational training (that are of relevance to this research) involve "professional development". The latter consists of several professional competences (by one or a group of job actions), knowledge, abilities, and skills:

– the ability to self-reflect and correct one's professional activities, taking into account the results of

professional influence; the knowledge about professionally important personal qualities of vocational training master; abilities and skills in evaluating professionally important personal qualities and results of pedagogical influence critically;

– the ability to develop and implement programmes on professional development; the knowledge about the content of professional development programmes; abilities and skills in developing and implementing professional development programmes;

– the ability to organize workshops, demonstration lessons, training sessions; the knowledge about the requirements for organizing workshops, training sessions, as well as criteria for evaluating demonstration lessons; abilities and skills in organizing workshops, demonstration lessons, training sessions;

– the ability to take measures to preserve physical and mental health, prevent burnout; the knowledge about labour regulations, the length of working hours and rest hours, rules and duties of masters of vocational training, social protection and responsibility, the state of physical and mental health, signs of burnout, its diagnostic and prevention; abilities and skills in distributing workload rationally, preventing fatigue, monitoring physical and mental health, seeking health care (in needed), creating a positive work environment, as well as self-regulation techniques, and resistance to stress (Ministerstvo rozvytku ekonomiky, torhivli ta silskoho hospodarstva Ukrainy, 2019).

Job functions of vocational training masters in terms of "methodical work" consist of the following professional competences (by one or a group of job actions), knowledge, abilities, and skills:

– the ability to develop teaching aids on industrial training and practice; the knowledge about a) the content and forms of methodical work, b) the content, structure, and requirements for teaching aids, c) the methods, forms and tools to ensure interaction during the educational process, d) goals and objectives of industrial training and practice; abilities and skills in developing teaching aids on industrial training and practice, formulating goals and objectives of industrial training and practice, selecting methods, forms and tools ensure interaction during the educational process;

– the ability to use digital technologies to solve methodical problems; the knowledge about electronic educational resources, sources of digital information, general characteristics of collecting, transmitting, processing and accumulating digital information; abilities and skills in searching, structuring, and assessing the reliability of the information, adapting it to the educational process and didactic requirements;

– the ability to validate and promote innovation; the knowledge about the essence and features of innovative approaches to organizing the educational process, principles of research and teaching activities (types, stages and methods of pedagogical research, pedagogical experiment), forms of presenting and ways of validating the results of innovative activities, stages of preparation and requirements for public speech, publication of articles, abstracts, reports; abilities and skills in implementing innovative approaches to organizing the educational process, determining the practical value of innovations, selecting appropriate forms and methods of presenting innovative results and teaching aids, preparing articles, abstracts, reports;

– the ability to analyze and use positive aspects of teaching practice; the knowledge about current problems and educational trends, criteria for evaluating teaching practice; abilities and skills in analyzing and evaluating teaching practice, predicting its effectiveness, adapting and implementing positive aspects of teaching practice in specific conditions of the educational process (Ministerstvo rozvytku ekonomiky, torhivli ta silskoho hospodarstva Ukrainy, 2019).

According to the order of the Ministry of Education and Science of Ukraine "On the Approval of Qualification Characteristics of Professions (Positions) of Research and Teaching Staff of Educational Institutions" (2013), "qualification characteristics contain a specific list of job duties of employees, taking into account the peculiarities of labour organization and management, their rights, responsibilities and competencies". A qualification characteristic of each position consists of three sections, such as "Tasks and Responsibilities", "Must Know" and "Qualification Requirements". Besides, these characteristics should reflect a teaching professional's competences. At the same time, competence means the quality of the employee's actions that allow him or her to solve professional problems effectively, as well as his or her willingness to take responsibility for his or her actions. The main components of a teacher's competence are professional, communicative, innovative, and legal (Ministerstvo osvity i nauky Ukrainy, 2010).

The above-mentioned competences necessitate professional development of masters of vocational training. Nowadays, a master of vocational training should a) be familiar with regulatory documents and adhere to the requirements of conceptual educational

documents in his or her professional activities, b) build and implement his or her pragmatic trajectory of activities, c) strive for self-development and self-improvement, taking into account the main trends in the development of technologies. Furthermore, a master of vocational training should be able to effectively communicate with employers, engage in long-term and short-term advanced training, as well as non-formal learning, systematically. Finally, a master of vocational training should know how to use digital tools and virtual resources to convey educational and production-related material to students, as well as estimate and correct their learning outcomes.

The Regulation on the Center for Teachers' Professional Development (2020), approved by the Cabinet of Ministers of Ukraine, highlights the need for professional development of masters of vocational training. The document also introduces the concept of "professional development trajectory". It is defined as a way of realizing a teacher's professional potential that is based on his or her free choice of educational institution, establishment, organization, other actors in educational activities, as well as types, forms, modes of completion of education and educational programmes within the framework of adult education" (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2020).

Professional development also appears in "The Guidelines for Professional Development of Research and Teaching Staff", approved by order of the Ministry of Education and Science of Ukraine (2020). The document states that professional development should comply with the relevant professional standard (if any) and specific job responsibilities and/or prospects of their expansion", "personal professional interests of research and teaching staff, available experience, the effectiveness of professional performance". Furthermore, teachers, with the assistance of the educational institution, are entitled to determine the professional development trajectory and its content (Ministerstvo osvity i nauky Ukrainy, 2020).

The main incentives for professional development are teachers' attestation and certification. As stated in the Standard Regulations on Attestation of Teachers (2010), approved by the Ministry of Education and Science of Ukraine, they aim to stimulate systematic and continuing development of teachers' professional competence, professional skills, creative initiative, enhance their prestige and authority, as well as ensure the effectiveness of the educational process (Ministerstvo osvity i nauky Ukrainy, 2010). It must be noted that certification seeks to "identify and motivate highly-qualified teachers with a high level of methodical competence who are familiar with methods of competence-based learning, know how to use new educational technologies and are ready to promote them (Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy, 2018).

Conclusions. A theoretical analysis of regulatory documents shows that conceptual educational documents regulate the need for professional development of masters of vocational training. They associate professional development with methodical work of teaching staff. Besides, these documents state that professional development covers instructional-methodical, scientific-methodical, organizational-methodical, reference-methodical and other types of methodical work. Importantly, the article proves that professional development of masters of vocational training should be one of the strategic priorities of P(V)E schools today and motivate teachers to enhance their professional skills to improve the quality of education.

List of references

Верховна Рада України. Законодавство України, 1996. *Державна національна програма «Освіта» («Україна XXI століття»),* [online] (Останнє оновлення 29 Травень 1996) Доступно: <https://zakon.rada.gov.ua/laws/show/896-93-%D0%BF?find=1&text=%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BE%D0%BA#w1_1> [Дата звернення 30 Травень 2021].

Верховна Рада України. Законодавство України, 1998. *Закон України «Про професійну (професійно-технічну) освіту»,* [online] (Останнє оновлення 01 Січень 2021) Доступно: <http://zakon5.rada.gov.ua/laws/show/103/98-вр> [Дата звернення 30 Травень 2021].

Верховна Рада України. Законодавство України, 2012. *Закон України «Про професійний розвиток працівників*, [online] (Останнє оновлення 05 Грудень 2019) Доступно: <https://zakon.rada.gov.ua/laws/show/4312-17#Text> [Дата звернення 30 Травень 2021].

Верховна Рада України. Законодавство України, 2013. *Указ Президента України «Про Національну стратегію розвитку освіти в Україні на період до 2021 року» від 25 чер. 2013 року № 344/2013*,

[online] (Останнє оновлення 25 Червень 2013) Доступно: <https://zakon.rada.gov.ua/laws/show/344/2013#Text> [Дата звернення 30 Травень 2021].

Верховна Рада України. Законодавство України, 2017. *Закон України «Про освіту»*, [online] (Останнє оновлення 16 Липень 2019) Доступно: <https://zakon.rada.gov.ua/laws/show/2145-19#Text> [Дата звернення 30 Травень 2021].

Верховна Рада України. Законодавство України, 2018. *Постанова Кабінету Міністрів України «Про затвердження Положення про сертифікацію педагогічних працівників» від 27 гру.2018 року №1190.*

[online] (Останнє оновлення 27 Грудень 2018) Доступно: <https://zakon.rada.gov.ua/laws/show/1190-2018-%D0%BF#Text> [Дата звернення 30 Травень 2021].

Верховна Рада України. Законодавство України, 2020. *Постанова Кабінету Міністрів України «Положення про центр професійного розвитку педагогічних працівників» від 29 лип. 2020 р. № 672*, [online] (Останнє оновлення 29 Липень 2020) Доступно: <https://zakon.rada.gov.ua/laws/show/672-2020-%D0%BF#Text> [Дата звернення 30 Травень 2021].

Кремень, В. Г., ред., 2009. *Біла книга національної освіти України*. Київ.

Міністерство освіти і науки України, 2010. *Наказ Міністерства освіти і науки України «Про затвердження Типового положення про атестацію педагогічних працівників» від 6 жов. 2010 року № 930*, [online] (Останнє оновлення 30 Вересень 2013) Доступно: <https://zakon.rada.gov.ua/laws/show/z1255-10?find=1&text=%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BE%D0%BA#Text > [Дата звернення 30 Травень 2021].

Міністерство освіти і науки України, 2014. *Наказ Міністерства освіти і науки України «Про затвердження Порядку підвищення кваліфікації педагогічних працівників професійно-технічних навчальних закладів» від 30 квітня 2014 року № 535*, [online] (Останнє оновлення 30 Квітень 2014) Доступно: <https://zakon.rada.gov.ua/laws/show/z0840-14> [Дата звернення 30 Травень 2021].

Міністерство освіти і науки України, 2020. *Методичні рекомендації для професійного розвитку науково-педагогічних працівників, затверджені наказом Міністерства освіти і науки України від 4 гру. 2020 року № 1504*, [online] (Останнє оновлення 04 Грудень 2020) Доступно: <https://mon.gov.ua/storage/app/uploads/public/5fd/8e5/df0/5fd8e5df039fc332033916.pdf> [Дата звернення 30 Травень 2021].

Міністерство розвитку економіки, торгівлі та сільського господарства України, 2021. *Реєстр професійних стандартів*, [online] (Останнє оновлення 23 Липень 2021) Доступно: <https://www.me.gov.ua/Documents/Detail?lang=ukUA&id=22469103-4e36-4d41-b1bf-288338b3c7fa&title=RestrProfesiinikhStandartiv> [Дата звернення 30 Травень 2021].

Національна академія педагогічних наук України, 2021. *Затверджено нові професійні стандарти*, [online] (Останнє оновлення 06 Липень 2021) Доступно: <http://naps.gov.ua/ua/press/releases/2006/> [Дата звернення 30 Травень 2021].

Урядовий портал, 2021. *Постанова Кабінету Міністрів України «Національна економічна стратегія на період до 2030 року»*, від 3 бер. 2021 року № 179, [online] (Останнє оновлення 03 Березень 2021) Доступно: <https://www.kmu.gov.ua/npas/pro-zatverdzhennya-nacionalnoyi-eko-a179> [Дата звернення 30 Травень 2021].

Шовкун, Л.М., 2010. *Організаційно-педагогічні умови розвитку професійної компетентності викладачів вищих аграрних навчальних закладів*. Кандидат наук. Нац. ун-т біоресурсів і природокористування України. Київ.

Translated & Transliterated

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 1996. *Derzhavna natsionalna prohrama «Osvita» («Ukraina XXI stolittia») [The State National Programme "Education" ("21st Century Ukraine")]*, [online] (Ostannie onovlennia 29 Traven 1996) Dostupno: <https://zakon.rada.gov.ua/laws/show/896-93-%D0%BF?find=1&text=%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BE%D0%BA#w1_1> [Data zvernennia 30 Traven 2021].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 1998. *Zakon Ukrainy «Pro profesiinu (profesiino-tekhnichnu) osvitu» [The Law of Ukraine "On Professional (Vocational) Education"]*, [online] (Ostannie onovlennia 01 Sichen 2021) Dostupno: <http://zakon5.rada.gov.ua/laws/show/103/98-vr> [Data zvernennia 30 Traven 2021].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 2012. *The Law of Ukraine "On Professional Development of Employees"]*, [online] (Ostannie onovlennia 05 Hruden 2019) Dostupno: <https://zakon.rada.gov.ua/laws/show/4312-17#Text> [Data zvernennia 30 Traven 2021].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 2013. *Ukaz Prezydenta Ukrainy «Pro Natsionalnu stratehiiu rozvytku osvity v Ukraini na period do 2021 roku» vid 25 cher. 2013 roku № 344/2013 [The Decree of the President of Ukraine "On the National Strategy of Education Development in Ukraine until 2021" as of June 25, 2013 (No 344/2013)]*, [online] (Ostannie onovlennia 25 Cherven 2013) Dostupno: <https://zakon.rada.gov.ua/laws/show/344/2013#Text> [Data zvernennia 30 Traven 2021].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 2017. *Zakon Ukrainy «Pro osvitu» [The Law of Ukraine "On Education"]*, [online] (Ostannie onovlennia 16 Lypen 2019) Dostupno: <https://zakon.rada.gov.ua/laws/show/2145-19#Text> [Data zvernennia 30 Traven 2021].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 2018. *Postanova Kabinetu Ministriv Ukrainy «Pro zatverdzhennia Polozhennia pro sertyfikatsiiu pedahohichnykh pratsivnykiv» vid 27 hru.2018 roku №1190 [The Order of the Cabinet of Ministers of Ukraine "On the Approval of the Regulation on Certification of Teaching Professionals" as of December 27, 2018 (No 1190)]*, [online] (Ostannie onovlennia 27 Hruden 2018) Dostupno: <https://zakon.rada.gov.ua/laws/show/1190-2018-%D0%BF#Text> [Data zvernennia 30 Traven 2021].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Parliament of Ukraine. The Legislation of Ukraine], 2020. *Postanova Kabinetu Ministriv Ukrainy «Polozhennia pro tsentr profesiinoho rozvytku pedahohichnykh pratsivnykiv» vid 29 lyp. 2020 r. № 672 [The Order of the Cabinet of Ministers of Ukraine "On the Centre for Teachers' Professional Development" as of July 29, 2020 (No 672)]*, [online] (Ostannie onovlennia 29 Lypen 2020) Dostupno: <https://zakon.rada.gov.ua/laws/show/672-2020-%D0%BF#Text> [Data zvernennia 30 Traven 2021].

Kremen, V. H., red., 2009. *Bila knyha natsionalnoi osvity Ukrainy [The White Book of National Education of Ukraine*]. Kyiv.

Ministerstvo osvity i nauky Ukrainy [The Ministry of Education and Science of Ukraine], 2010. *Nakaz Ministerstva osvity i nauky Ukrainy «Pro zatverdzhennia Typovoho polozhennia pro atestatsiiu pedahohichnykh pratsivnykiv» vid 6 zhov. 2010 roku № 930 [The Decree of the Ministry of Education and Science of Ukraine "On the Approval of the Standard Regulations on Attestation of Teachers" as of October 6, 2010 (No 930)]*, [online] (Ostannie onovlennia 30 Veresen 2013) Dostupno: <https://zakon.rada.gov.ua/laws/show/z1255-10?find=1&text=%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BE%D0%BA#Text > [Data zvernennia 30 Traven 2021].

Ministerstvo osvity i nauky Ukrainy [The Ministry of Education and Science of Ukraine], 2014. *Nakaz Ministerstva osvity i nauky Ukrainy «Pro zatverdzhennia Poriadku pidvyshchennia kvalifikatsii pedahohichnykh pratsivnykiv profesiino-tekhnichnykh navchalnykh zakladiv» vid 30 kvitnia 2014 roku № 535 [The Decree of the Ministry of Education and Science of Ukraine "On the Procedure for Advanced Training of Vocational Education Teachers" as of April 30, 2014 (No 535)]*, [online] (Ostannie onovlennia 30 Kviten 2014) Dostupno: <https://zakon.rada.gov.ua/laws/show/z0840-14> [Data zvernennia 30 Traven 2021].

Ministerstvo osvity i nauky Ukrainy [The Ministry of Education and Science of Ukraine], 2020. *Metodychni rekomendatsii dlia profesiinoho rozvytku naukovo-pedahohichnykh pratsivnykiv, zatverdzheni*

nakazom Ministerstva osvity i nauky Ukrainy vid 4 hru. 2020 roku № 1504 [Methodical Guidelines for Professional Development of Research and Teaching Staff approved by the Decree of the Ministry of Education and Science of Ukraine as of December 4, 2020 (No 1504)], [online] (Ostannie onovlennia 04 Hruden 2020) Dostupno: <https://mon.gov.ua/storage/app/uploads/public/5fd/8e5/df0/5fd8e5df039fc332033916.pdf> [Data zvernennia 30 Traven 2021].

Ministerstvo rozvytku ekonomiky, torhivli ta silskoho hospodarstva Ukrainy [The Ministry of Economic Development, Trade and Agriculture of Ukraine], 2021. *Reiestr profesiinykh standartiv [The Register of Professional Standards]*, [online] (Ostannie onovlennia 23 Lypen 2021) Dostupno: <https://www.me.gov.ua/Documents/Detail?lang=ukUA&id=22469103-4e36-4d41-b1bf-288338b3c7fa&title=RestrProfesiinikhStandartiv> [Data zvernennia 30 Traven 2021].

Natsionalna akademiia pedahohichnykh nauk Ukrainy [The National Academy of Educational Sciences of Ukraine], 2021. *Zatverdzheno novi profesiini standarty [New Professional Standards Approved]*, [online] (Ostannie onovlennia 06 Lypen 2021) Dostupno: <http://naps.gov.ua/ua/press/releases/2006/> [Data zvernennia 30 Traven 2021].

Uriadovyi portal [Government Portal], 2021. *Postanova Kabinetu Ministriv Ukrainy «Natsionalna ekonomichna stratehiia na period do 2030 roku*», vid 3 ber. 2021 roku № 179 *[The Order of the Cabinet of Ministers of Ukraine "The National Economic Strategy 2030" as of March 3, 2021 (No 179)]*, [online] (Ostannie onovlennia 03 Berezen 2021) Dostupno: <https://www.kmu.gov.ua/npas/pro-zatverdzhennya-nacionalnoyi-eko-a179> [Data zvernennia 30 Traven 2021].

Shovkun, L.M., 2010. *Orhanizatsiino-pedahohichni umovy rozvytku profesiinoi kompetentnosti vykladachiv vyshchykh ahrarnykh navchalnykh zakladiv [Organizational and pedagogical conditions for developing professional competence in lecturers in agricultural universities]*. Kandydat nauk. Nats. un-t bioresursiv i pryrodokorystuvannia Ukrainy. Kyiv.

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АНАЛІЗ НОРМАТИВНО-ПРАВОВОГО ЗАБЕЗПЕЧЕННЯ ПРОФЕСІЙНОГО РОЗВИТКУ МАЙСТРІВ ВИРОБНИЧОГО НАВЧАННЯ У СИСТЕМІ МЕТОДИЧНОЇ РОБОТИ

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Реферат:

Актуальність: сучасні трансформації професійної (професійно-технічної) освіти (далі – П(ПТ)О) та нові виклики сьогодення детермінують нові вимоги до майстра виробничого навчання як основного транслятора вмінь і навичок для здобувачів професійної освіти, що зумовлює необхідність неперервного професійного розвитку майстрів виробничого навчання закладів П(ПТ)О; професійний розвиток майстрів виробничого навчання є основою забезпечення якісної підготовки кадрів у системі професійної (професійно-технічної) освіти; ґрунтовна нормативно-правова база є основою успішного професійного розвитку майстрів виробничого навчання у закладах П(ПТ)О.

Мета: проаналізувати нормативно-правові документи в освітній сфері на наявність у них вимог щодо професійного розвитку майстрів виробничого навчання.

Методи: теоретичні (теоретичний аналіз нормативно-правових документів з проблеми професійного розвитку майстрів виробничого навчання в системі методичної роботи закладів П(ПТ)О);

емпіричні (вивчення та аналіз нормативно-правового забезпечення професійного розвитку майстрів виробничого навчання у системі методичної роботи).

Результати: здійснено теоретичний аналіз освітніх нормативно-правових документів на наявність у них вимог щодо професійного розвитку майстрів виробничого навчання.

Висновки: необхідність професійного розвитку майстрів виробничого навчання регламентується змістом концептуальних освітніх документів, в яких професійний розвиток співвідноситься з методичною роботою педагогічних працівників і включає навчально-методичну, науково-методичну, організаційно-методичну, інформаційно-методичну та інші види методичної роботи; професійний розвиток майстрів виробничого навчання має бути одним із стратегічних пріоритетів сучасного закладу П(ПТ)О і покликаний сприяти професійному розвитку та підвищенню кваліфікації педагогічних працівників з метою підвищення якості освіти.

Ключові слова: *професійний розвиток, майстри виробничого навчання, нормативно-правове забезпечення, заклади професійної (професійно-технічної) освіти.*

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REGULATION OF LEGAL EDUCATION IN HIGHER MILITARY EDUCATIONAL INSTITUTIONS OF THE USSR AND INDEPENDENT UKRAINE

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Abstract.

Relevance: the study of the normative principles of legal education of servicemen makes it possible to assess the impact of state educational policy on it, contributes to the critical understanding and further improvement of the legal education system in the process of its reform.

Purpose: to identify and characterize the features of regulation of legal education of future officers in higher military educational institutions (hereinafter – HMEIs) of Ukraine in the XX and at the beginning of the XXI centuries (1943-2015); to compare the normative principles of legal education in higher military educational institutions of the USSR and independent Ukraine.

Methods: historical and genetic (clarification of prerequisites and factors of development of legal education in higher military educational institutions of Ukraine during the studied period); chronological, logical-historical (study of the process and stages of development of legal education in higher military educational institutions, identification of features, contradictions, patterns in spatio-temporal sequence); comparative-analytical, comparative-pedagogical (analysis of the normative-legal base of the specified period, periodicals, experience of legal education in higher military educational institutions).

Results: the normative bases of legal education of future officers of the Armed Forces of the USSR and independent Ukraine are analyzed, the peculiarities of its regulation at different historical stages are established.

Conclusions: It has been found that during the study period the development of legal education of officers in higher military educational institutions had three main stages: the first one (1943-1975) is characterized by updating the regulatory framework of the USSR Armed Forces taking into account combat experience, weapons development and changes in the world geopolitical environment; the second one (1975-1991), during which the normative regulation of legal education in the industry developed in the context of the growing systemic crisis of the USSR; the third one (1991-2015), during which the formation and development of the military education system of independent Ukraine took place. Despite the fact that the modern system of military education of independent Ukraine is a successor to the Soviet one, there are significant differences between them related to Ukraine's acquisition of the status of a sovereign state (acceptance of the relevant obligations as a full participant in international relations, in particular, in ensuring human rights in peacetime and wartime), focusing on protecting the interests of people (instead of the geopolitical ambitions of the superpower), integration into the renewed national education system (in particular, to ensure its quality). All of the above, in turn, affected the vision of the tasks of legal education of officers in higher military educational institutions, and, as a consequence, on its regulatory principles.

Keywords: *legal education, regulatory principles, legal literacy, higher military school, officer.*

Introduction. World trends of recent decades have finally consolidated the role of one of the most important areas of society for education. The specifics of each type of relationship affects their legal regulation. Educational legal relations have a stable, long-lasting, recurring nature, they are multifaceted and interactive. Most often, they arise, function and develop in an institutional environment differentiated by degrees and specialties. The purpose of this relationship is the development and self-development of all participants in the relevant process. Legislative regulation of education has its own peculiarities, compared to other spheres of public life. The direction of public policy in the field, which includes a set of measures taken by the state, its bodies and other subjects on education as a social institution, has a decisive influence on the normative regulation of relations in the field of education (Karkhut, 2014, p. 15). Military service as a component of public service is clearly and in detail regulated by acts of different legal force. Because of this, in particular, legal education is of particular importance for the quality of training, whose task is to protect the Fatherland. The study of the normative principles of legal education allows us to track its formation in terms of the implementation of relevant public policy.

Sources. The development of the research concept, definition of its purpose and tasks are based on: O. Karkhut's ideas (2014, p. 15) regarding the understanding of the mechanism of legal regulation of public relations in the field of education; conclusions of V. Fedorenko (2016, p. 11) on the sociophilosophical nature of legal education of servicemen of the Armed Forces of Ukraine; definition of the system of military education, proposed by S. Poliakov (2006, p. 93). Valuable information about the subject of this study is contained directly in the regulations of 1943-2015, which have determined the principles of legal education in the Armed Forces of the USSR and independent Ukraine.

Purpose: to determine and characterize the features of the normative principles of legal education of future officers in higher military educational institutions of Ukraine in the XX and at the beginning of the XXI centuries (1943-2015); to compare the regulation of legal education in higher military educational institutions of the USSR and independent Ukraine.

Methods: *historical and genetic* (clarification of prerequisites and factors of development of legal education in higher military educational institutions of Ukraine during the studied period); *chronological, logical-historical* (study of the process and stages of development of legal education in higher military educational institutions, identification of features, contradictions, patterns in spatio-temporal sequence); *comparative-analytical, comparative-pedagogical* (analysis of the normative-legal base of the specified period, periodicals, experience of legal education in higher military educational institutions).

Results and discussion. The normative basis of legal education of citizens includes legislative and local acts of different legal force, which determine the necessary and sufficient level of mastery of legal competencies by the population. In this study, we take into account the period of development of legal education as a component of officer training in higher military educational institutions in Ukraine in 1943-2015. Chronological boundaries are determined by key events in reforming the system of these institutions. This period began with the adoption of the resolution of the State Defense Committee of October 8, 1943 "On the reorganization of military schools of the Red Army" and ended with the signing of the Order of the Ministry of Defense of Ukraine "On Approval of Regulations in Higher Military Educational Institutions" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2015b). Within the studied period we distinguish three main stages of normative regulation of legal education in military institutions of higher education.

The first stage (1943-1975) is marked by the renewal of the regulatory framework of the Armed Forces of the USSR, taking into account combat experience, armament development and changes in the world geopolitical situation.

During World War II, military higher education institutions located in Ukraine functioned as elements of the Soviet military education system. The organization of legal education of cadets and students of military educational institutions had a number of shortcomings, which were noted by the relevant commissions during inspections. For example, the Order of the People's Commissar for Defense of March 24, 1943 "On the results of inspections of military schools of the Red Army" states that the inspection carried out by the Department of Military Educational Institutions of the Red Army in the period from August 1942 to January 1943 found that military discipline and internal order in some institutions were not established: unauthorized expulsions from school, disputes with management and drunkenness continued, and there were cases of cadets being beaten by commanders and officers from the permanent staff of schools. The order required school principals to take decisive measures to strengthen military discipline not only among cadets but also among officers, who were entrusted with, in

particular, the educational function (*Russkiy archive*, 1997, p. 428).

Military statutory activity during the Second World War played an important role in the development of legal education in military schools. At the beginning of the war, the activities of the command and political staff to strengthen military discipline were regulated by current orders of the People's Commissar for Defense, as well as the Disciplinary Statute and the Internal Service Statute of 1940, prescriptions of which were outdated and did not take into account the new requirements dictated by the experience of war. This greatly complicated the work of the command and political staff of military schools to improve the legal education of students and cadets. In August 1943, by order of the People's Commissar for Defense № 260, a commission was convened to revise the Statute of the Internal Service and the Disciplinary Statute. When drafting the new statutes, the members of the commission, first of all, took into account the experience of disciplinary practice accumulated since the beginning of the Second World War, as well as excluded outdated provisions from the documents. The draft of the new Disciplinary Statute created by the Commission was published in 1944. Its structure remained unchanged, but it revealed the essence of military discipline and its significance. It contained a list of disciplinary sanctions that could be applied to servicemen, the rights of commanders and superiors to impose disciplinary sanctions, as well as the procedure for disciplinary action and other issues of disciplinary practice (Slivin, 2015, pp. 167).

Given the above, we can say that the main purpose of legal education of officers during World War II was the strict adherence of personnel to discipline as the main prerequisite for combat capability in general, understanding and use of combat experience, and at the end of the war – prevention of actions and deeds that tarnish military honor, encroach on the life, health or dignity of the civilian population, the cultural heritage of the country.

During **the second stage** (1975-1991) the development of the Soviet system of military education in Ukraine continued. Thus, at the end of World War II, legal education of officers was given 30% of training time. In addition, various propaganda activities were carried out. With the adoption in 1975 of the Statute of the Internal Service of the Armed Forces of the USSR, legal education (literacy) was attributed to the duties of commanders and political workers.

In the context of the growing socio-political crisis, the normative principles of legal education of the personnel of the Armed Forces of the USSR were detailed. The order of the Minister of Defense № 200 – 1989 "On the organization of legal education and improvement of legal work in the Soviet Army and Navy" established legal minimums for certain categories of servicemen. In particular, officers were required to know the Law "On General Military Duty", the general military statutes of the Armed Forces of the USSR and other regulations of the Ministry of Defense (Kryuchkova, 2013, p. 160).

An important catalyst for the all-encompassing systemic crisis that the USSR entered in the second half of the 1980s was the Afghan war of 1979-1989. Weak and incomprehensible to ordinary citizens argumentation of direct participation of Soviet troops in hostilities in Afghanistan, the omission of their scale and consequences, as well as US sanctions increased internal tensions in the country, which was a major cause of the collapse of the USSR (Ivanenko & Burmaha, 2016, p. 116).

At the time of the collapse of the Soviet Union, the organization of legal education of officers in military institutions of higher education on the territory of Ukraine generally had normative principles. At the same time, it is necessary to take into account the historical context of the formation of legal education in the higher military school of this period, in particular, how the official ideology has affected all spheres of public life.

At **the third stage** (1991-2015) the formation and development of the military education system of independent Ukraine took place. The question of the inclusion of Soviet military formations in the socio-political structure of independent Ukraine arose as soon as they came under national jurisdiction. Peculiarities of the development of the Armed Forces of Ukraine (hereinafter – UAF) were the simultaneous formation of the legal basis of their activities with the reform of their structures, the organization of appropriate management and support systems.

The all-military statutes of the USSR, as amended in 1975, served as the basis for the conclusion of the Provisional Statutes of the Armed Forces, and later, when the national military statutes of the Armed Forces were created, the structure, terminology and most norms were preserved. The Law of Ukraine of March 24, 1999 approved the military Statutes of the Armed Forces of Ukraine: the Statute of the Internal Service, the Disciplinary Statute, the Statute of the Garrison and Guard Services, and Martial law of the Armed Forces of Ukraine, which replaced the Temporary statutes. From the point of view of law, military statutes are a set of normative legal acts established by the state, which regulate

various aspects of military relations on the basis of unity of command, centralization, military discipline and legality. They regulate all aspects of life and activity of troops: tasks, forms and methods of training and education of servicemen; organization of daily life of troops – internal, guard, garrison, patrol, park and other special services; routine; rights, duties and disciplinary responsibility of servicemen, relations and behavior of soldiers in the service and outside it, legal means and ways to maintain military order; high organization, military discipline, combat readiness, etc. Unlike other legal acts, military statutes regulate not only intra-army relations, but also personal relations between servicemen due to their affiliation with the Armed Forces of Ukraine. The military statutes of the Armed Forces of Ukraine, as well as other domestic legislation, are based on the norms of the Constitution of Ukraine, which determines the competence of the highest bodies of state power and administration in the field of defense (Poliakova, 2007, p. 10).

According to Article 59 of the Statute of the Internal Service of the Armed Forces of Ukraine, the commander of the military unit is obliged, in particular, to engage in legal education of subordinates; to ensure compliance with the internal order in the subordinate unit, which would guarantee strict compliance with the laws of Ukraine and the provisions of the statutes of the Armed Forces of Ukraine; to be an example in discipline and execution of requirements of the legislation, orders and instructions of commanders (chiefs); to treat subordinates politely and fairly, to respect their honor and dignity; to constantly educate the latter in humanism and humanity, in accordance with the generally accepted principles of international law (Verkhovna Rada of Ukraine. Legislation of Ukraine, 1999, p. 194).

According to the Directive of the Minister of Defense of Ukraine of January 26, 1994 № D-4 "On the organization and tasks of legal education (literacy) in the Armed Forces of Ukraine", commanders and chiefs of all levels undertook to focus their efforts on improving the legal education of personnel, i.e. an integral element of combat training, the educational process, the main means of ensuring military discipline and law and order at a high level (Kirilenko, 2010, p. 340).

At the same time, the Concept of Military Education in Ukraine, approved by the Resolution of the Cabinet of Ministers of Ukraine dated December 15, 1997 № 1410, establishes that military education is part of the state education system on the basis of a single legal and regulatory framework and provides training, retraining and advanced training of military personnel and reserve officers of various educational and qualification levels for the Armed Forces and other military formations of Ukraine (Verkhovna Rada of Ukraine. Legislation of Ukraine, 1997).

S. Poliakov (2006) connects the introduction of the term "military education system" with the introduction of the Concept of Military Education of Ukraine. According to this document, this term includes the Ministry of Education and Science of Ukraine, central executive bodies to which higher education institutions, where military specialists are trained, are subordinated, and scientific-methodological institutions. At the same time, the author does not agree with this approach, as the Concept itself defines that military education in Ukraine, not limited to higher education, contains four elements, in particular:

– initial military training of youth;
– professional military training;
– higher education of military specialists;
– advanced training and retraining of officers.

S. Poliakov (2006, p. 93) proposes to define the system of military education as "organizationally and functionally integrated complex of military educational and scientific institutions, structural military educational units (departments, faculties) as part of civilian educational institutions that provide military education in Ukraine and public administration bodies that manage and regulate the activities of these institutions". At the same time, the tasks of the latter include, mainly, the management – on the one hand – of the educational process in general, as well as individual educational institutions.

In the instruction "On the organization of educational activities in higher military educational institutions of the Ministry of Defense of Ukraine", approved by the Order of the Minister of Defense of Ukraine № 399 dated October 30, 1998 (Verkhovna Rada of Ukraine. Legislation of Ukraine, 1998), formation of respect for the Constitution and laws of Ukraine, conscious fulfillment of the requirements of the military oath and temporary statutes of the Armed Forces of Ukraine, orders and directives of the Minister of Defense of Ukraine are among the main tasks of educational work in higher military educational institutions.

The principles of legal training and education of servicemen, thus, correlate with the national policy of popularization of legal knowledge. Thus, "with the aim of further development of legal education and upbringing of citizens in the spirit of respect for the Law and human rights", the Resolution of the Cabinet of Ministers of Ukraine of May 29, 1995 № 366 approved the Program of Legal Education of

Ukraine (Verkhovna Rada of Ukraine, 1995), the purpose of which was to provide access to legal knowledge and skills of their application by the general population, to consolidate the main directions of legal education activities and priority measures for their implementation. Jurisprudence, according to the Program, belonged to the compulsory disciplines of higher educational institutions. The scope and content of the relevant course was determined by the needs of society in the training of a conscientious citizen, as well as high requirements for the qualifications of employees (1995).

Legal education, in pursuance of the Decree of the President of Ukraine №992/2001 "On the National Program of Legal Education of the Population", is carried out in preschool, complete general secondary, vocational (professional-technical), higher and postgraduate education. This Decree provides for a similar scope and content of the mandatory course in jurisprudence (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2001).

According to the joint order of the Ministry of Defense of Ukraine and the Ministry of Education and Science of Ukraine dated April 13, 2005, №221 / 217 "On approval of instructions on the organization of educational activities in higher military educational institutions of the Armed Forces of Ukraine and military educational units of higher educational institutions of Ukraine" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2005), educational activity in higher military educational institutions was carried out in the form of educational process. It included teaching, educational, methodical work and scientific and scientific-technical activities. The purpose of the educational process was to ensure opportunities for cadets (students) to acquire "knowledge, skills and abilities in the humanitarian, social, scientific, natural, technical and military spheres necessary for professional activities, and their intellectual, as well as moral, spiritual, aesthetic and physical development. The mentioned instruction was valid until November 10, 2015, later the peculiarities of educational activities in higher military educational institutions of the Ministry of Defense of Ukraine were determined by the Order of the Ministry of Defense of Ukraine dated July 20, 2015 №346 "On approval of the Regulations on the peculiarities of the organization of the educational process in higher military educational institutions of the Ministry of Defense of Ukraine and military educational units of higher educational institutions of Ukraine" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2015a) and the Order of the Ministry of Defense of Ukraine dated May 27, 2015 №240" On approval of the Regulations on higher military educational institutions ", which regulates the powers of higher military educational institutions, their structure, composition of participants in the educational process, rights and responsibilities of personnel at the present stage (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2015b).

It should be noted that during the study period there were a number of radical changes at the global and regional levels – in socio-political life, scientific views on legal education, legal support of the industry as a whole.

Conclusions. During the study period, the regulation of legal education of officers in higher military educational institutions developed in three stages: at the first stage (1943-1975) the regulatory framework of the USSR Armed Forces was updated taking into account combat experience, armament development and changes in the world geopolitical situation; in the second stage (1975-1991) normative regulation of legal education in the industry developed in the conditions of growing systemic crisis of the USSR; in the third stage (1991-2015) the formation and development of the military education system of independent Ukraine took place.

During the Second World War and the first postwar years, the regulation of legal education of officers in higher military educational institutions was fragmentary. The attention of the legislator, at this time, focused on the process of legal education as the influence of commanders on the consciousness and behavior of personnel. This feature can be traced in the later stages of the formation of legal education of future military professionals. However, in these periods there is also a tendency to normalize the process of mastering the necessary legal knowledge by military specialists. In our opinion, this is due to the improvement of scientific and methodological developments in this area, as well as the development of legislative techniques in general.

Despite the fact that the modern system of military education in independent Ukraine originates from the Soviet one, there are significant differences between them related to Ukraine's acquisition of the status of a sovereign state and a full participant in international relations. In particular, Ukraine has made a number of commitments to ensure human rights in peacetime and wartime; the legal system is focused on protecting the interests of its own people (instead of the geopolitical ambitions of the superpower); the integration of military education into the renewed national education system (in particular, to ensure its quality) is ensured.

All this affected the vision of the tasks of legal education of officers in higher military educational institutions, and, as aconsequence, on its normative principles.

We see prospects for further explorations in the study of the preconditions and factors of the formation of legal education in military higher educational institutions of Ukraine in the XX – at the beginning of the XXI century.

List of references

Верховна Рада України. Законодавство України, 1995. *Про Програму правової освіти України: Постанова Кабінету Міністрів України № 366 від 29.05.1995.* [online] (Останнє оновлення 26 Вересень 2007) Доступно: https://zakon.rada.gov.ua/laws/show/366-95-%D0%BF/ed19950529#Text [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 1997. *Про створення єдиної системи військової освіти: Постанова Кабінету Міністрів України №1410 від 15.12.1997.* [online] (Останнє оновлення 229 Травень 1995). Доступно: <https://zakon.rada.gov.ua/laws/show/1410-97-%D0%BF#Text> [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 1998. *Інструкція про організацію освітньої діяльності у вищих військових навчальних закладах Міністерства оборони України*: *Наказ Міністерства оборони України № 399 від 30.10.98*. [online] (Останнє оновлення 05 Червень 2005) Доступно: <https://zakon.rada.gov.ua/laws/show/z0784-98#Text> [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 1999. *Про Статут внутрішньої служби Збройних Сил України: Закон України*. [online] (Останнє оновлення 23 Квітень 2021) Доступно: <https://zakon.rada.gov.ua/laws/show/548-14#Text> [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 2001. *Про національну програму правової освіти населення:* Указ Президента України №992/2001 від 18.10.2001. [online] (Останнє оновлення 18 Жовтень 2001). Доступно: <http://zakon0.rada.gov.ua/laws/show/992/2001/conv> [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 2005. *Про затвердження Інструкції про організацію освітньої діяльності у вищих військових навчальних закладах Збройних Сил України та військових навчальних підрозділах вищих навчальних закладів України:* Наказ Міністерства оборони України та Міністерства освіти і науки України № 221/217 від 13.04.2005. [online] (Останнє оновлення 10 Листопад 2015) Доступно: <https://zakon.rada.gov.ua/laws/show/z0574-05#Text> [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 2015a. *Про затвердження Положення про особливості організації освітнього процесу у вищих військових навчальних закладах Міністерства оборони України та військових навчальних підрозділах вищих навчальних закладів України: Наказ Міністерства оборони України № 346 від 20.07.2015*. [online] (Останнє оновлення 20 Березень 2020) Доступно: <https://zakon.rada.gov.ua/laws/show/z1126-15/ed20200320#Text> [Дата звернення 05 Червень 2021].

Верховна Рада України. Законодавство України, 2015b. *Про затвердження Положення про вищі військові навчальні заклади:* Наказ Міністерства оборони України № 240 від 27.05.2015. [online] (Останнє оновлення 27 Травень 2015). Доступно: <https://zakon.rada.gov.ua/laws/show/z0706-15#Text> [Дата звернення 05 Червень 2021].

Іваненко, В. та Бурмага, В. 2016. Афганський синдром 1979–1989 рр. як чинник кризи радянської системи: історичний досвід і сьогодення. *Література та культура Полісся*, 83, с.108-116.

Кархут, О. 2014. *Механізм правового регулювання суспільних відносин у сфері освіти: теоретико-правовий аспект*. Кандидат юридичних наук. Національний педагогічний університет ім. М. П. Драгоманова.

Кириленко, В. 2010. *Правова робота в Збройних Силах України*. К.: РВЦ «Військовий інститут».

Крючкова, Е. 2013. История отечественной правовой подготовки в военных учебных заведениях, как элемент формирования профессионально-правовой компетенции. *Современная система образования: опыт прошлого, взгляд в будущее*, 2, с. 157-163.

Поляков, С. 2006. Деякі аспекти адміністративно-правового механізму державного управління у системі військової освіти України. *Право і Безпека,* 5 (1), с. 90-93.

Полякова, О. 2007. Деякі проблеми удосконалення Військових Статутів – як правових засад функціонування та реформування Збройних Сил України. *Збірник наукових праць Харківського університету Повітряних сил*, 2, с. 10-12.

Русский архив: Великая Отечественная. Приказы народного комиссара обороны СССР, 1943-1945 гг., 1997. Москва: Терра.

Сливин, Т. 2015. Правовая подготовка в военно-учебных заведениях в годы великой отечественной войны *Мир образования - образование в мире*, 3 (59), с. 166-171.

Федоренко, В.В. 2016. *Військово-правове виховання військовослужбовців Збройних Сил України: соціально-філософський аналіз.* Кандидат наук. Житомирський державний університет імені Івана Франка.

Translated & Transliterated

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 1995. *Pro Prohramu pravovoi osvity Ukrainy: Postanova Kabinetu Ministriv Ukrainy № 366 vid 29.05.1995 [On the Program of Legal Education of Ukraine: Resolution of the Cabinet of Ministers of Ukraine № 366 dated May 29, 1995.]*. [online] (Ostannie onovlennia 26 Veresen 2007) Dostupno: <https://zakon.rada.gov.ua/laws/show/366-95-%D0%BF/ed19950529#Text [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 1997. *Pro stvorennia yedynoi systemy viiskovoi osvity: Postanova Kabinetu Ministriv Ukrainy №1410 vid 15.12.1997 [On the creation of a unified system of military education: Resolution of the Cabinet of Ministers of Ukraine №1410 dated December 15, 1997.]*. [online] (Ostannie onovlennia 229 Traven 1995). Dostupno: <https://zakon.rada.gov.ua/laws/show/1410-97-%D0%BF#Text> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 1998. *Instruktsiia pro orhanizatsiiu osvitnoi diialnosti u vyshchykh viiskovykh navchalnykh zakladakh Ministerstva oborony Ukrainy: Nakaz Ministerstva oborony Ukrainy № 399 vid 30.10.98 [Instruction on the organization of educational activities in higher military educational institutions of the Ministry of Defense of Ukraine: Order of the Ministry of Defense of Ukraine № 399 dated 30, 1998]*. [online] (Ostannie onovlennia 05 Cherven 2005) Dostupno: <https://zakon.rada.gov.ua/laws/show/z0784-98#Text> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 1999. *Pro Statut vnutrishnoi sluzhby Zbroinykh Syl Ukrainy: Zakon Ukrainy [On the Charter of the Internal Service of the Armed Forces of Ukraine: Law of Ukraine]*. [online] (Ostannie onovlennia 23 Kviten 2021) Dostupno: <https://zakon.rada.gov.ua/laws/show/548-14#Text> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 2001. Pro natsionalnu prohramu pravovoi osvity naselennia: Ukaz Prezydenta Ukrainy №992/2001 vid 18.10.2001 *[On the national program of legal education of the population: Decree of the President of Ukraine №992 / 2001 dated October 18, 2001]*. [online] (Ostannie onovlennia 18 Zhovten 2001). Dostupno: <http://zakon0.rada.gov.ua/laws/show/992/2001/conv> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 2005. *Pro zatverdzhennia Instruktsii pro orhanizatsiiu osvitnoi diialnosti u vyshchykh viiskovykh navchalnykh zakladakh Zbroinykh Syl Ukrainy ta viiskovykh navchalnykh pidrozdilakh vyshchykh navchalnykh zakladiv Ukrainy: Nakaz Ministerstva oborony Ukrainy ta Ministerstva osvity i nauky Ukrainy № 221/217 vid 13.04.2005 [On approval of the Instruction on the organization of educational activities in higher military educational institutions of the Armed Forces of Ukraine and military educational units of higher educational institutions of Ukraine: Order of the Ministry of Defense of Ukraine and the Ministry of Education and Science of Ukraine № 221/217 dated April 13, 2005]*. [online] (Ostannie onovlennia 10 Lystopad 2015) Dostupno: <https://zakon.rada.gov.ua/laws/show/z0574-05#Text> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 2015a. *Pro zatverdzhennia Polozhennia pro osoblyvosti orhanizatsii osvitnoho protsesu u*

vyshchykh viiskovykh navchalnykh zakladakh Ministerstva oborony Ukrainy ta viiskovykh navchalnykh pidrozdilakh vyshchykh navchalnykh zakladiv Ukrainy: Nakaz Ministerstva oborony Ukrainy № 346 vid 20.07.2015 [On approval of the Regulation on the peculiarities of the organization of the educational process in higher military educational institutions of the Ministry of Defense of Ukraine and military educational units of higher educational institutions of Ukraine: Order of the Ministry of Defense of Ukraine № 346 dated July 20, 2015]. [online] (Ostannie onovlennia 20 Berezen 2020) Dostupno: <https://zakon.rada.gov.ua/laws/show/z1126-15/ed20200320#Text> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [The Verkhovna Rada of Ukraine. The Legislation of Ukraine], 2015b. *Pro zatverdzhennia Polozhennia pro vyshchi viiskovi navchalni zaklady: Nakaz Ministerstva oborony Ukrainy № 240 vid 27.05.2015 [On approval of the Regulations on higher military educational institutions: Order of the Ministry of Defense of Ukraine № 240 dated May 27, 2015]*. [online] (Ostannie onovlennia 27 Traven 2015). Dostupno: <https://zakon.rada.gov.ua/laws/show/z0706-15#Text> [Data zvernennia 05 Cherven 2021], [in Ukrainian].

Ivanenko, V. ta Burmaha, V. 2016. Afhanskyi syndrom 1979–1989 rr. yak chynnyk kryzy radianskoi systemy: istorychnyi dosvid i sohodennia [The Afghan syndrome of 1979–1989 as factor in the crisis of the Soviet system: historical experience and the present]. *Literatura ta kultura Polissia [Literature and Culture of Polissya]*, 83, s.108-116, [in Ukrainian].

Karkhut, O. 2014. *Mekhanizm pravovoho rehuliuvannia suspilnykh vidnosyn u sferi osvity: teoretyko-pravovyi aspekt [The mechanism of legal regulation of social relations in the field of education: theoretical and legal aspect.]*. Kandydat yurydychnykh nauk. Natsionalnyi pedahohichnyi universytet im. M. P. Drahomanova [Ph.D in Law. National Pedagogical Dragomanov University], [in Ukrainian].

Kyrylenko, V. 2010. *Pravova robota v Zbroinykh Sylakh Ukrainy [Legal work in the Armed Forces of Ukraine]*. K.: RVTs «Viiskovyi instytut» [Editorial publishing center "Military Institute"], [in Ukrainian].

Kryuchkova, E. 2013. Istoriya otechestvennoy pravovoy podgotovki v voennyih uchebnyih zavedeniyah, kak element formirovaniya professionalno-pravovoy kompetentsii [History of domestic legal training in military educational institutions as an element of formation of professional and legal competence]. *Sovremennaya sistema obrazovaniya: opyit proshlogo, vzglyad v buduschee [The modern system of education: the experience of the past, a look into the future]*, 2, s. 157-163, [in Russian].

Poliakov, S. 2006. Deiaki aspekty administratyvno-pravovoho mekhanizmu derzhavnoho upravlinnia u systemi viiskovoi osvity Ukrainy [Some aspects of the administrative and legal mechanism of public administration in the system of military education of Ukraine]. *Pravo i Bezpeka [Law and Security]*, 5 (1), s. 90-93, [in Ukrainian].

Poliakova, O. 2007. Deiaki problemy udoskonalennia Viiskovykh Statutiv – yak pravovykh zasad funktsionuvannia ta reformuvannia Zbroinykh Syl Ukrainy [Some problems of improvement of Military Statutes – as legal bases of functioning and reforming of the Armed Forces of Ukraine]. Zbirnyk naukovykh prats Kharkivskoho universytetu Povitrianykh syl *[Collection of scientific works of Kharkiv University of Air Forces]*, 2, s. 10-12, [in Ukrainian].

Russkiy arhiv: Velikaya Otechestvennaya. Prikazyi narodnogo komissara oboronyi SSSR [Russian archive: The Great Patriotic War. Orders of the People's Commissar for Defense of the USSR], 1943-1945 gg., 1997. Moskva: Terra, [in Russian].

Slivin, T. 2015. Pravovaya podgotovka v voenno-uchebnyih zavedeniyah v godyi velikoy otechestvennoy voynyi [Legal training in military educational institutions during the Great Patriotic War]. *Mir obrazovaniya – obrazovanie v mire [The world of education – education in the world]*, 3 (59), s. 166-171, [in Russian].

Fedorenko, V.V. 2016. *Viiskovo-pravove vykhovannia viiskovosluzhbovtsiv Zbroinykh Syl Ukrainy: sotsialno-filosofskyi analiz [Military-legal education of servicemen of the Armed Forces of Ukraine: socio-philosophical analysis]*. Kandydat nauk. Zhytomyrskyi derzhavnyi universytet imeni Ivana Franka Ph.D. Ivan Franko Zhytomyr State University], [in Ukrainian].

УДК 37.014.5:355.233.231.3+340.113

НОРМАТИВНЕ РЕГУЛЮВАННЯ ПРАВОВОЇ ОСВІТИ У ВИЩИХ ВІЙСЬКОВИХ НАВЧАЛЬНИХ ЗАКЛАДАХ СРСР ТА НЕЗАЛЕЖНОЇ УКРАЇНИ

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Актуальність: дослідження нормативних засад правової освіти військовослужбовців дає змогу оцінити вплив на неї державної освітньої політики, сприяє критичному осмисленню та подальшому вдосконаленню системи правової освіти в процесі її реформування.

Мета: виявити й охарактеризувати особливості регламентації правової освіти майбутніх офіцерів у вищих військових навчальних закладах (далі – ВВНЗ) України у XX та на початку XXI століть (1943-2015); порівняти нормативні засади правової освіти у вищих військових навчальних закладах СРСР та незалежної України.

Методи: історико-генетичний (з'ясування передумов і чинників розвитку правової освіти у вищих військових навчальних закладах України досліджуваного періоду); хронологічний, логіко-історичний (дослідження процесу та етапів розвитку правової освіти у вищих військових навчальних закладах, виявлення особливостей, суперечностей, закономірностей у просторово-часовій послідовності); порівняльно-аналітичний, зіставно-педагогічний (аналіз нормативно-правової бази означеного періоду, періодичних видань, досвіду здійснення правової освіти у вищих військових навчальних закладах).

Результати: проаналізовано нормативні засади здійснення правової освіти майбутніх офіцерів Збройних Сил СРСР та незалежної України, встановлено особливості її регламентації на різних історичних етапах.

Висновки: З'ясовано, що протягом досліджуваного періоду розвиток правової освіти офіцерів у ВВНЗ мав три основні етапи: перший (1943-1975) характеризується оновленням нормативної бази Збройних сил СРСР з урахуванням бойового досвіду, розвитку озброєння та змін у світовій геополітичній обстановці; другий (1975-1991), під час якого нормативне регулювання правової освіти в галузі розвивалося в умовах наростання системної кризи СРСР; третій (1991-2015), за якого відбувалися становлення й розбудова системи військової освіти незалежної України. Попри те, що сучасна система військової освіти незалежної України є наступницею радянської, між ними існують суттєві відмінності, пов'язані із набуттям Україною статусу суверенної держави (прийняття нею відповідних зобов'язань, як повноправного учасника міжнародних відносин, зокрема, щодо забезпечення прав людини у мирний та воєнний час), орієнтацією на захист інтересів власного народу (замість геополітичних амбіцій наддержави), інтеграцією в оновлену національну систему освіти (зокрема, щодо забезпечення її якості). Усе перелічене, зі свого боку, позначалося на баченні завдань правової освіти офіцерів у ВВНЗ, і, як наслідок на її нормативних засадах.

Ключові слова: *правова освіта, нормативні засади, правове виховання, вища військова школа, офіцер.*

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ORGANIZATION OF INNOVATIVE EDUCATIONAL ACTIVITY FOR FORMATION OF READINESS OF FUTURE QUALIFIED WORKERS FOR ENTREPRENEURSHIP

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Abstract.

The relevance of the study is determined by the growing popularity of domestic enterprises and associations in the field of trade and catering and their entry into world markets. All this necessitates a qualitatively new level of training students to form their readiness to conduct independent business.

Purpose: to substantiate the peculiarities of the organization in the institution of vocational (professional and technical) education of innovative educational activities to form the readiness of future professionals (in the field of trade and food technology) for entrepreneurship.

Methods: theoretical analysis of scientific sources – to clarify the level of research on the problem of forming the readiness of young students for entrepreneurship; empirical (study and analysis of pedagogical experience in the state educational institution "Odessa Higher Vocational School of Trade and Food Technology", work plans, training programs for future skilled workers – to identify features of organization of innovative educational activities in the institution of vocational (professional-technical) education; questionnaire-diagnostic (online survey of students on self-assessment of readiness for entrepreneurship in the conditions of small business development); SWOT-analysis – to identify the strengths and weaknesses of organization of innovative educational activities in the educational institution).

Results: the relevance of the study of the readiness of future specialists (in the field of trade and food technology) for entrepreneurship on the basis of the state educational institution «Odessa Higher Vocational School of Trade and Food Technology» is substantiated; the results of the analysis of the online survey of students on self-assessment of readiness for entrepreneurial activity in the conditions of small business development are presented; the basic forms and methods of work of pedagogical collective on formation of readiness of students for business are characterized.

Conclusions: the SWOT-analysis has shown the importance of an experimental study of the problem of developing the readiness of future professionals (in the field of trade and food technology) for entrepreneurship on the basis of the state educational institution "Odessa Higher Vocational School of Trade and Food Technology"; it has been found out that students are aware of the importance of forming readiness for entrepreneurial activity and development of entrepreneurial competence in educational institutions; the need of young people to improve ICT skills, psychological readiness to do business, legal and economic training, professional mobility and rapid adaptation of school graduates to modern conditions of production, development of creative abilities, civic position and national consciousness; the main tools for preparing students for entrepreneurship are presented (introduction of the program "Fundamentals of Innovative Entrepreneurship"; updating the content of topics "Small Business Management", "Fundamentals of Marketing" taking into account the specifics of small business in trade and catering; introduction of a series of trainings on student readiness to entrepreneurial activity; training of pedagogical workers for realization of tasks of innovative educational activity).

Keywords: *vocational education, entrepreneurial competence, readiness for entrepreneurial activity, sphere of trade and food technologies.*

Introduction. Market relations in Ukraine are characterized by the active development of small business, which determines a number of relevant requirements for the system of training future skilled workers (Radkevych, 2018; Zakatnov, ed., 2018). It is obvious that in the conditions of formation and intensive development of market economy the leading form of management is the enterprise as a special kind of production and trade activity. Under such conditions, a person becomes an active subject in the labor market, has the opportunity to freely dispose of his qualifications as fixed capital. A skilled worker with an innovative style of thinking, the ability to generate and implement new original ideas, solve creative problems, use the acquired knowledge in business becomes competitive in the labor market. Professions in the field of trade and restaurant industry are becoming increasingly popular, enjoying widespread demand among both the population and the labor market. In addition, there is a strong entry of domestic enterprises and associations in world markets. All this necessitates the achievement of a qualitatively different, more modern, level of training of students to ensure their future readiness for self-employment. Therefore, it is important to provide conditions for the implementation of innovative educational activities in the institutions of vocational (professional-technical) education in the field of trade and catering . This opens opportunities for the accumulation of intellectual and material resources of the educational institution for experiments, in particular, to form the readiness of young people for entrepreneurship.

Sources. The need to form the readiness of future skilled workers for entrepreneurial activity is enshrined in the Laws of Ukraine "On Education" (2017), "On Vocational Education" (1998), "On Development and State Support of Small and Medium Enterprises in Ukraine" (2012), National program to promote the development of small business in Ukraine (2000), the National Doctrine of Education Development of Ukraine in the XXI century (2002), the National Strategy for Education Development in Ukraine for 2012-2021 (2009), the Strategy for Sustainable Development "Ukraine – 2020" (2015), Concepts "New Ukrainian School" (2016), Strategies for the development of small and medium enterprises in Ukraine until 2020 (2017), the Medium-Term Priority Action Plan of the Government for the period until 2020 (2017), Concepts for the implementation of state policy in the field of vocational (professional-technical) education "Modern vocational (professional-technical) education" for the period up to 2027 (2019). These issues are also addressed in documents of international importance, in particular, in the Copenhagen Declaration (2002) and the Bruges Communiqué (2010). At the same time, the lack of research on the problem of forming the readiness of future skilled workers for entrepreneurial activity in the field of trade and food technology has been clarified. Some aspects of the formation and development of graduates of vocational education institutions of career and entrepreneurial competence and the formation of their readiness to start their own business have been the object of scientific attention of domestic researchers: S. Alieksieieva (2019), D. Zakatnov (2018), L. Yershova (2019); 2020), M. Tkachenko (2018), V. Orlov (2019), V. Radkevych (2018), I. Seredina (2019) and others. At the same time, the study of the readiness of future professionals for business in the field of trade and food technology is still relevant.

The purpose is to substantiate the peculiarities of the organization of innovative educational activities for the formation of the readiness of future specialists (in the field of trade and food technology for entrepreneurship) in the institution of vocational (professional and technical) education.

Methods: theoretical analysis of scientific sources – to clarify the level of research on the problem of forming the readiness of young students for entrepreneurship; empirical (study and analysis of pedagogical experience in the state educational institution "Odessa Higher Vocational School of Trade and Food Technology", work plans, training programs for future skilled workers – to identify features of organization of innovative educational activities in the institution of vocational (professional-technical) education; questionnaire-diagnostic (online survey of students on self-assessment of readiness for entrepreneurship in the conditions of small business development); SWOT-analysis – to identify the strengths and weaknesses of organization of innovative educational activities in the educational institution).

Results and discussion. The pedagogical staff of state educational institution «Odessa Higher Vocational School of Trade and Food Technologies» took part in conducting all-Ukrainian experimental work on the formation of readiness of future skilled workers for entrepreneurial activity carried out under the scientific guidance of the Institute of Vocational Education and Training of the National Academy of Educational Sciences of Ukraine. The urgency of the experiment is due to the insufficient level of formation of entrepreneurial competence of future skilled workers

in vocational education institutions and their readiness for entrepreneurial activity in the conditions of intensive development of small business of trade and culinary direction.

The hypothesis of research and experimental work was the assumption that the formation of the readiness of future skilled workers for entrepreneurship will be more effective if the necessary organizational and pedagogical conditions are provided in the educational institution, namely: to update the content of disciplines of general-professional, professional-theoretical and general educational training with a component of innovative entrepreneurship; to develop methods of forming the readiness of future skilled workers for entrepreneurial activity in state educational institution «Odessa Higher Vocational School of Trade and Food Technologies»; to develop a set of educational and methodological support for the study of innovative entrepreneurship.

In accordance with the tasks and the plan-schedule of research and experimental work of the all-Ukrainian level, an order was issued for the vocational school with the indication of creative groups for the implementation of specific tasks of experimental work; a meeting of the pedagogical council was held to determine the plan of the experiment on the selected topic, where the concept, hypothesis, scientific apparatus of experimental work were discussed and the expected results were predicted, a survey of students and SWOT-analysis were conducted to identify strengths and weaknesses of experimental work.

According to the results of the SWOT-analysis, the weaknesses include: insufficient level of educational and methodological support of the educational process to form the readiness of future skilled workers for entrepreneurial activity; lack of training courses on the formation of entrepreneurial competence of future skilled workers in trade and restaurant business. The strengths of the experiment are the long-term experience of conducting innovative educational activities by the creative team of state educational institution «Odessa Higher Vocational School of Trade and Food Technology», the willingness of the teaching staff to introduce new forms of learning, innovative pedagogical technologies, advanced pedagogical experience; availability of teachers' innovative developments in the training of skilled workers in trade and restaurant business ("Cook", "Confectioner", "Baker", "Supply Agent", "Food Seller; Cashier"); establishing active and effective cooperation of educational institutions with enterprises-customers of personnel.

In order to conduct research work, agreements were signed with a number of eenterprises-employers that facilitate the implementation of the tasks of the experiment. Among them there are: restaurants ("Alexandrivsky", "Chelentano", "Kolyba", "Pechersky", "Emotions", "Tai Rai", "M-1", "Gastromania", "Boxing", "Tokyo House", "Seville", "Full Zen", "Savory"), Ltd. (Everest Restaurant "Cactus", "John Mack", "Toga", "By the Sea", "Mozart Hotel", "Universal", "Nick"), private entrepreneurs (Chichelnytska, Manikhina, Bakhnan, Kalkutina, Rybachok, Kovalyov, Dolinska, Andrienko, Akopov, Bravarenko, Kiryazov, Savina), cafe ("Sherlock", "In the clearing", "Garlik", "Duet", "Rickshaw") , "Satiated belly", "Tatiana", "Noodles", "Meat", "Kefir"), pizzeria "At the Fountain", hotel "Ark Palace", network "Sushi WOK", private enterprises "Polibza" and "Antonenko ", several networks of supermarkets, canteens of the plant "Promzvyazok", educational Complex " Prosvita" and secondary schools (8, 31, 54,83," Degrees"), etc.

Within the framework of the scientific-practical conference "Scientific and methodological support of vocational education and training" (2020), the participation of pedagogical staff of the vocational school was ensured in webinars on the topics: "Standardization of professional higher education: problems and prospects", "Career counseling: experience and perspectives", "Ways of modernization of vocational (professional-technical) education taking into account the progressive European experience", "Distance vocational training in the context of digitalization of education", "Methodological bases of development of SMART-complexes for training skilled workers", "Implementation of project technologies in vocational training of future skilled workers". "The webinar "Preparation of students of vocational (professional-technical) education for entrepreneurship" provided active participation in the discussion on the topic: "Career-entrepreneurship".

Creative achievements during the first stage of the experiment were the participation of students and teachers in regional competitions: "Business plan for the establishment of a restaurant", which took place on the basis of Odessa National Economic University (Result: 1st place); "The best business idea", which took place on the basis of Odessa business school WAVE. (Result: 1st place; nominal scholarship awarded to the winner); "The best innovative project" on the topic: "Theoretical and methodological foundations of training future skilled workers for entrepreneurship in the development of small and medium-sized businesses" (Result: Diploma of the winner).

In order to determine the readiness of future skilled workers for entrepreneurial activity, the experiment conducted online surveys and testing, which covered

127 students in the professions of cook, confectioner, baker, supply agent, food seller; cashier controller.

The results of the analysis of the obtained results have shown that 74.02% of respondents have a stable interest in entrepreneurship, 12.6% – combine entrepreneurship with learning and only 6.3% of students do not show interest in this activity. The distribution of respondents by the criterion of experience in business has shown that 66.14% have no experience of independent business (Fig. 1).

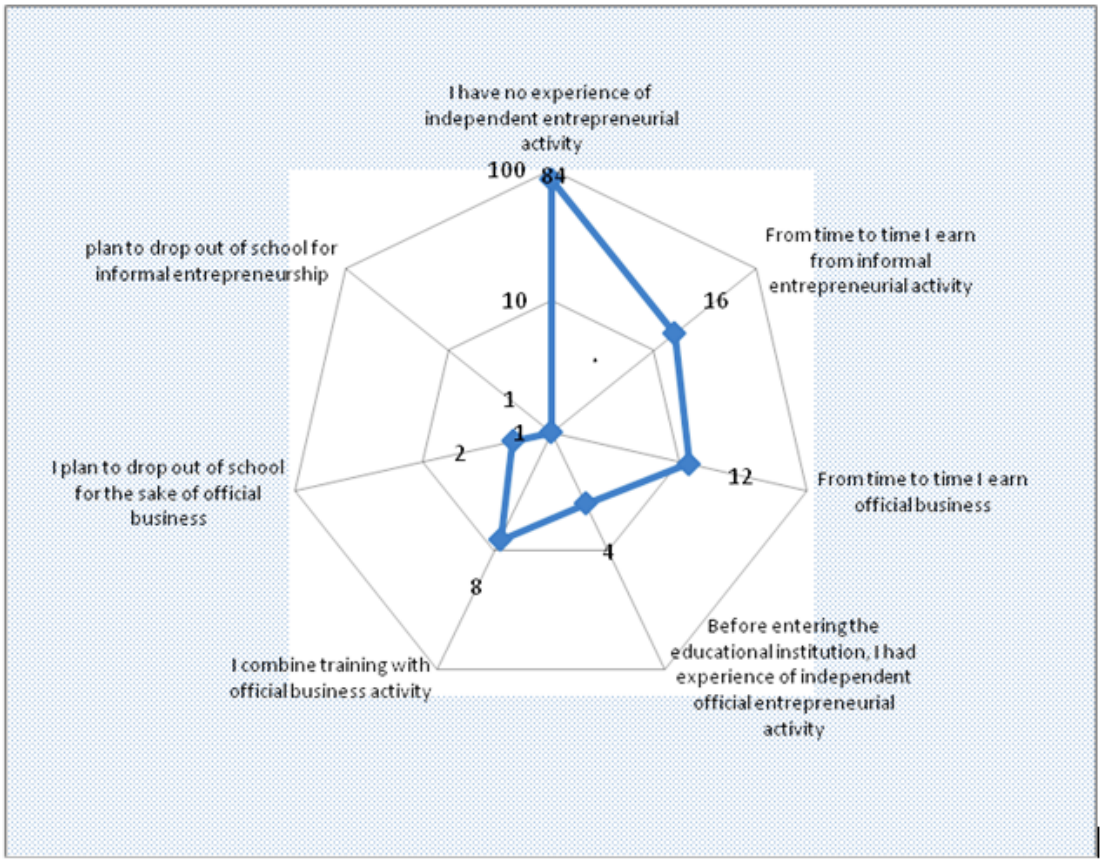

Fig.1. Availability of entrepreneurship experience

When asked about the availability of relevant knowledge, information and resources needed to start own business, about 83% of respondents have said that they need additional knowledge and experience in entrepreneurship (Fig. 2).

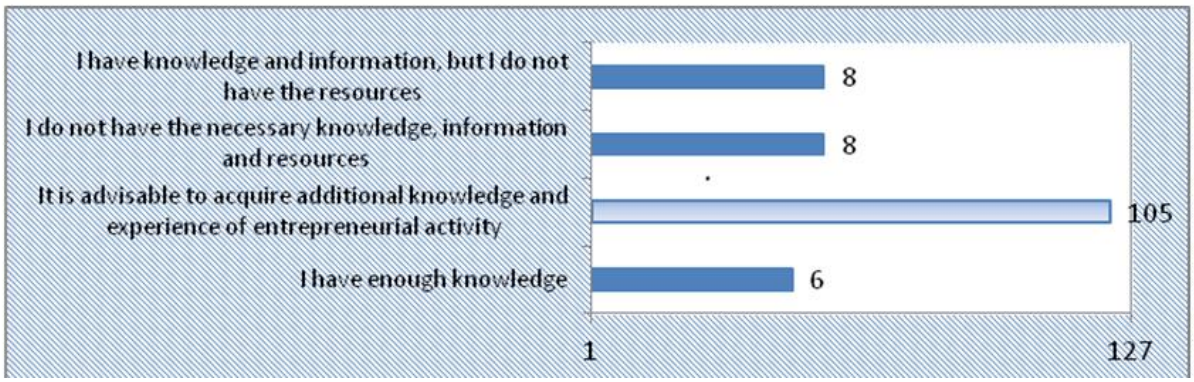

Fig.2. Availability of knowledge and resources to start own business

Questionnaire survey of students on the level of their awareness of the legislative and regulatory framework regulating business activities in the field of small business has revealed that: 89% do not know the mechanisms and algorithms for starting their own business; 92% – are not familiar with the main financial and legal documents; 94.5% – do not have the skills to analyze the state and trends of the labor market (Table 1.)

Table 1

Awareness of students in issues of legislation and regulations

Answer options	Number of answers	%
I know the mechanisms of starting my own business	45	35,43
I do not know the mechanisms and algorithms for starting my own business	113	88,98
I am familiar with the list of basic documents needed to run my own business in a small-scale business	10	7,87
I am not familiar with the list of basic documents needed to run my own business in a small-scale business	117	92,13
I know the main trends of the domestic labor market	12	9,45
I do not know how to analyze the labor market, I do not know its features	120	94,49

Clarification of the main trends in IT education in Ukraine (Bazeliuk, 2018; Humennyi, 2013; Humennyi and Radkevych, 2016; Yershov, 2019a; 2019b; 2020; Odnoroh, 2019), led to inclusion of questions on the formation of future skilled workers' ICT skills in the list of questionnaires. Thus, it has been found that students are aware of the importance of information and communication technologies for opening and running the successful business. At the same time, as the survey has shown, they also recognize the existence of the need for their improvement (Fig. 3).

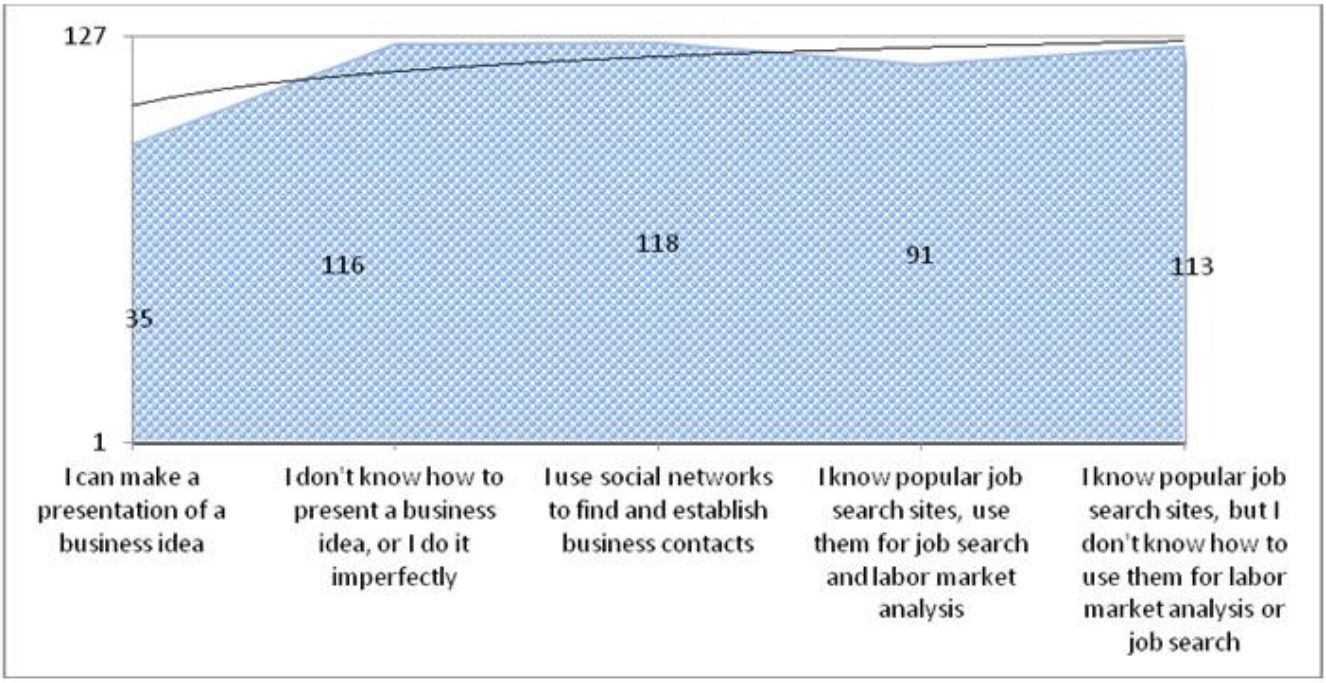

Fig.3. Students' self-assessment of own ICT skills

The study of the psychological readiness of respondents to do business has shown that 18.9% of respondents say that they know the psychological characteristics and reserves of their own personality, needed to organize their own business. At the same time, 74% of respondents have admitted that they do not even have the basic psychological knowledge necessary to run their own business. Almost 30% say that they are familiar with the psychological traits and qualities that are favorable for the organization of their business, but do not know how much these traits and qualities are developed in them personally. At the same time, almost 93% of students have undergone various types of diagnostic psychological testing in their lives, but admit that it has not been systemic. As students had the opportunity to choose several answers to each question, it was found that, realizing the importance of psychological training, young people also recognize the special importance of such factors as personal connections (61.42%) and financial security (93.7%). At the same time, almost 70% of students have expressed the belief that psychological readiness is crucial for achieving success in business. Thus, the experiment should solve the problem of providing psychological training of future professionals for entrepreneurship.

It should be noted that an integrated approach to learning, designed to ensure the development of students' systematic, creative thinking, cognitive activity, independence, interest in knowledge contributes to the formation of entrepreneurial competence of future restaurant professionals. In the process of establishing interdisciplinary links in the lesson, the teacher has the opportunity to use integrated learning material (complex tables; interdisciplinary tasks; simultaneous work with several textbooks or manuals; messages and abstracts of interdisciplinary content, etc.). In integrated classes, students have the opportunity to study subjects comprehensively, comparing them. This provides a holistic perception of reality as a necessary prerequisite for the formation of a scientific worldview. It is also necessary to organically combine the subjects of general education, special training and industrial training, coordinating their goals and objectives, complementing and enriching the content. To master a certain profession, it is advisable to use knowledge, skills and abilities of a general nature. Binary lessons, which are a synthesis of generalized knowledge, are best suited for this. For example, conducting a binary lesson on economics and educational practice allows you to comprehensively organize theoretical and practical training. Binary practical classes can be conducted in the form of production meetings based on the results of professional activities (students use factual data, analyze real processes, errors, explain the reasons for their occurrence, find reserves to improve the results).

Interdisciplinary links in the institution of vocational (professional-technical) education are built according to the following algorithm: general education disciplines – general technical – vocational-theoretical and vocational-practical training. Interdisciplinary links help to more effectively influence students' perceptions of learning material. For example, in obtaining information on the topic of "Business Planning" (question "Feasibility study of a business idea"), future professionals in the field of trade and catering rely on the principles and categories studied during the study of "Fundamentals of Economics". Knowledge of the discipline "Fundamentals of Legal Knowledge" is the basis for studying the topic "Organizational and legal forms of enterprise and entrepreneurial activity." Students can use knowledge of the disciplines "Accounting" and "Enterprise Finance" to calculate the financial costs required to implement a business idea in the practical work of developing a "business plan".

We emphasize that the global informatization of society requires changes in methodological approaches to the preparation and conduct of lessons. Therefore, to improve the educational process, teachers need to use information and communication technologies that will increase the level of teaching, bring learning outcomes closer to educational standards, help to take into account different learning conditions and different levels of student training. The lesson with the use of ICT clearly saves the time of the teacher and the student, allows the student to work at his own pace, helps the teacher to work with students individually and differently, provides operational control and evaluation of learning outcomes.

Appropriate criteria for selection of methods and forms of preparing students for entrepreneurship by teachers are compliance with teaching methods: principles, goals, objectives and content of innovative educational activities; educational opportunities of students (age psychological, gender); learning

conditions provided by the time plan for the assimilation of educational information; the level of pedagogical skills of teachers, etc. Each teacher determines the best methods for the lesson, given that they should help students consciously perceive information, be active in the learning process, provide the ability to self-realization and self-affirmation.

The formation of the readiness of future specialists in trade and food technology can be carried out not only during theoretical and practical training in institutions of vocational (professional-technical) education, but also in extracurricular activities. Extracurricular activities make it possible to maintain students' interest in the learning process, to achieve increased interest in entrepreneurship. This contributes to the expansion and deepening of knowledge, motivates to use them in own business activities. Extracurricular activities also develop such traits as neatness, perseverance, responsibility for the task. In a broad sense, extracurricular activities include both independent cognitive activity and participation in specialized circles and clubs, organization and holding of debates, round tables, seminars, "master classes", quizzes, participation in scientific and practical conferences, competitions, magazines and newspapers.

For example, at the classes of the group "Entrepreneurship" students improve knowledge, skills and abilities important for entrepreneurship, gain personal experience in solving specific practical problems related to the functioning of the enterprise. The circle prepares students for self-knowledge, self-affirmation and self-expression. The circle unites like-minded people with a common interest in business. Therefore, the classes provide special opportunities for the formation of cognitive and research activities, improving the skills and abilities of students. This contributes to the formation of readiness for entrepreneurial activity. Classes should be conducted according to the work plan, using active forms (discussion, round table, interactive mini-lectures, projects, games, etc.).

The formation of entrepreneurial traits (responsibility, communication, organizational skills) is facilitated by such events as "Business Lady", "New Year", "Teacher's Day", etc., which contain tasks and competitions related to the identification of knowledge, skills, abilities, traits and qualities necessary for successful business. Entrepreneur must be able to communicate with people, persuade them, encourage cooperation. Therefore, for the development of communicative and organizational skills it is necessary to hold conferences, debates, discussions, intellectual games, etc.

An effective extracurricular form of work on the formation of youth readiness for entrepreneurship is the creation of an "Entrepreneurship Club" in the educational institution, designed to unite active, creative students, capable of economic thinking, who want to self-determination in small business development. The task of such a club should be to prepare young people for work in new socio-economic relations, to develop motivation for entrepreneurial activity, to provide assistance in developing business plans, to develop a culture of entrepreneurship, etc. To this end, the "Entrepreneurship Club" may hold meetings with local entrepreneurs, representatives of the state executive power; training sessions, economic "Club of the Funny and Inventive", psychological testing, psychological and legal counseling, etc.

Didactic games that develop student activity, the ability to navigate independently in business situations, maintain a stable interest in entrepreneurship, are an effective method of forming the entrepreneurial competence of future professionals in the field of trade and food technology. In particular, the business game "Stock Exchange" simulates the situation of trading on the stock exchange. In the process of the game, young people learn the rules of conduct of stock brokers, have the opportunity to show intelligence, communication and organizational skills, the ability to make quick decisions, take responsibility.

Conducting quizzes promotes the development of practical thinking of students, develops their ability to analyze business situations, contributes to the improvement of professional skills. In particular, conducting a quiz on "The importance of advertising in business" gives students the opportunity to consolidate and expand their professional knowledge about the importance of advertising in business, growth in production, quality of services and goods, finding markets for products.

In accordance with the Law of Ukraine "On Promoting Social Formation and Development of Youth in Ukraine" (Verkhovna Rada of Ukraine. Legislation of Ukraine, 2019b) and in order to stimulate the activity and creativity of students and the development of entrepreneurial competence, it is advisable to hold scientific and practical conferences on "Business Development. Factors of success and obstacles ", competitions" The best business project ", "Own business" and

others. For example, under the terms of the competition, students must demonstrate their willingness to formulate and defend their own business idea, present their own business plan and justify it.

As the practice of innovative educational activities of state educational institution "Odessa Higher Vocational School of Trade and Food Technology" shows that the expected results can be achieved only by integrating the described methods and forms of work with young students.

Conclusions. The SWOT-analysis of the experimental research of the problem of development of readiness of future specialists in the field of trade and food technologies of state educational institution "Odessa Higher Vocational School of Trade and Food Technologies" is carried out, the results of online survey of students on self-assessment of readiness for entrepreneurial activity in the conditions of small business development are analyzed, various methods and forms of work of pedagogical collective on formation of readiness of youth for entrepreneurial activity are analyzed. The conducted SWOT-analysis has testified to the importance of the experimental research of the problem of development of readiness of future specialists in the field of trade and food technologies for entrepreneurial activity on the basis of state educational institution "Odessa Higher Vocational School of Trade and Food Technologies". It has been found that: in the conditions of small business development, students realize the importance of forming readiness for entrepreneurial activity in educational institutions; young people need to improve ICT skills, psychological readiness to running their own business, legal and economic training, increase the level of professional mobility and adaptation to modern production conditions, development of creative abilities, civic position and national consciousness. It is proved that in order to ensure proper conditions for the development of youth traits and qualities, skills and abilities important for entrepreneurial activity, it is necessary to: implement the program "Fundamentals of Innovative Entrepreneurship", which provides psychological, economic and legal preparation of young people to start and run their own business; update the content of the topics "Small Business Management", "Fundamentals of Marketing" taking into account the specifics of small business in the field of trade and catering; to introduce a series of trainings on the formation of readiness of students of state educational institution "Odessa Higher Vocational School of Trade and Food Technologies" for entrepreneurial activity; to organize systematic extracurricular activities; to provide high-quality training of pedagogical staff for the implementation of innovative educational activities to form the readiness of young people to open and successfully run their own business.

List of references

Алєксєєва, С., Базиль, Л., Байдулін, В., Закатнов, Д. та ін., 2019. Основи інноваційного підприємництва: програма навчальної дисципліни для закладів професійної (професійно-технічної) освіти. *Професійна освіта*, 2(83), с. 33-35.

Базелюк О., 2018. Зміст і структура цифрової культури педагогічних працівників закладів професійної освіти. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка*, 16, с. 81-87. DOI: http://doi.org/10.32835/2223-5752.2018.16.81-87.

Верховна рада України. Законодавство України, 1999. *Закон України «Про професійну освіту»* [online] (Останнє оновлення 05 Листопад 2020) Доступно: https://zakon.rada.gov.ua/laws/show/103/98-%D0%B2%D1%80#Text [Дата звернення 05 Квітень 2021].

Верховна рада України. Законодавство України, 2018. *Закон України «Про освіту»*, 2018, [online] (Останнє оновлення 17 Червень 2021) Доступно: <http://zakon2.rada.gov.ua/laws/show/2145-19> [Дата звернення 05 Квітень 2021].

Верховна рада України. Законодавство України, 2019a. Закон України «Про сприяння соціальному становленню та розвитку молоді в Україні», [online] (Останнє оновлення 06 Червень 2019) Доступно: <https://zakon.rada.gov.ua/laws/show/2998-12#Text> [Дата звернення 06 Квітень 2021].

Верховна рада України. Законодавство України, 2019b. Розпорядження Кабінету Міністрів України від 12.06.2019 р. №419 «Про схвалення Концепції реалізації державної політики у сфері професійної (професійно-технічної освіти) «Сучасна професійна (професійно-технічна) освіта на період до 2027 року», [online] (Останнє оновлення 12 Червень 2019) Доступно: https://zakon.rada.gov.ua/laws/show/419-2019-%D1%80#Text [Дата звернення 06 Квітень 2021].

Гуменний О.Д. та Радкевич В.О., 2016. SMART-комплекси навчальних дисциплін для професійно-технічних навчальних закладів. *Теорія і методика професійної освіти*, 3 (11), с. 11-19.

Гуменний О.Д., 2013. Інформаційна культура керівників ПТНЗ у психолого-педагогічних дослідженнях. *Сучасні інформаційні технології та інноваційні методики навчання у підготовці фахівців: теорія, досвід, проблеми*, 35, с. 84-89.

Діденко, О., 2014. Забезпечення якості професійної підготовки кваліфікованих робітників у ринкових умовах. *Професійно-технічна освіта*, 4, с. 9-12.

Єршов М.-О., 2019а. Сучасні проблеми формування цифрової компетентності учнів у закладах загальної середньої освіти. В*: Інформаційно-цифровий освітній простір України: трансформаційні процеси і перспективи розвитку. Матеріали методологічного семінару НАПН України. 4 квітня 2019 р. / За ред. В.Г. Кременя, О.І. Ляшенка; укл. А.В. Яцишин, О.М. Соколюк*; 4/4, с.79-85.

Єршова, Л.М. та Базиль, Л.О., 2020. Ефективні вектори співпраці інституту професійно-технічної освіти НАПН України з навчально(науково)-методичними центрами (кабінетами) професійно-технічної освіти. Вісник НАПН України, 2(1), с.1-10. https://doi.org/10.37472/2707-305X-2020-2-1-8-1.

Закатнов, Д., 2018. Підприємницька діяльність як напрям освітньо-професійних траєкторій учнів закладів професійної (професійно-технічної) освіти. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка,* 1(18), с. 96-101. DOI: https://doi.org/10.32835/2223-5752.2019.18.96-101

Закатнов, Д.О., ред., 2018. Планування й розвиток професійної кар`єри учнівської молоді у системі професійно-технічної освіти: навчальний посібник. Житомир: «Полісся».

Ліга закон. Законодавство України, 2020. *Закон України «про професійну освіту» (проєкт)* [online] (Останнє оновлення 26 Жовтень 2020) Доступно: http://search.ligazakon.ua/l_doc2.nsf/link1/JI03503A.html [Дата звернення 05 Квітень 2021].

Радкевич В., 2018. Науково-методичний супровід модернізації вітчизняної системи професійної та фахової передвищої освіти у контексті євроінтеграційних процесів. Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine Professional Pedagogy], 15, с. 5-15.

Середіна, І., 2019. Проблеми і перспективи формування підприємницької компетентності майбутніх бакалаврів з економіки підприємства у процесі фахової підготовки. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка*, 2(19), с. 58-64. DOI: https://doi.org/10.32835/2223-5752.2019.19.58-64.

Odnoroh H. 2019. Key competences of future garment workers: the offer and demand in the labour market. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка [Scientific herald of the Institute of vocational education and training of NAES of Ukraine. Professional Pedagogy*]. 2(19). pp. 31-42. DOI: https://doi.org/10.32835/2223-5752.2019.19.31-42.

Yershov M. O., 2020. Digitalization of general secondary education: issues and prospects. *Вісник Житомирського державного університету імені Івана Франка. Педагогічні науки [Zhytomyr Ivan Franko State University Journal. Pedagogical Sciences*], 4 (103), pp.19-27.

Yershov M.-O., 2019b. Digitalisation of professional (vocational) and pre-high tertiary education of Ukraine: problems and prospects. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine Professional Pedagogy*], 1(18), pp. 67-74. DOI: https://doi.org/ 10.32835/2223-5752.2019.18.67-74.

Yershova, L., 2020. The Technology for Developing Entrepreneurial Competency in Future Qualified Specialists Using Self-Management Elements. Professional Pedagogics, 1(20), 151-159.

Translated & Transliterated

Alieksieieva S., Bazyl L., Baidulin V., Zakatnov D. ta in., 2019. Osnovy innovatsiinoho pidpryiemnytstva: prohrama navchalnoi dystsypliny dlia zakladiv profesiinoi (profesiino-tekhnichnoi) osvity [Fundamentals of innovative entrepreneurship: curriculum for vocational (vocational) education]. *Profesiina osvita [Professional education]*, 2(83), c. 33-35, [in Ukrainian].

Bazeliuk, O., 2018. Zmist i struktura tsyfrovoi kultury pedahohichnykh pratsivnykiv zakladiv profesiinoi osvity [Content and structure of digital culture of VET institutions' teachers]. Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika *[Scientific Herald of the Institute of Vocational Education and Training of the National Academy of Pedagogical Sciences of Ukraine. Vocational pedagogy]*, 16, s. 81-87. DOI: http://doi.org/10.32835/2223-5752.2018.16.81-87, [in Ukrainain].

Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 1999. *Zakon Ukrainy «Pro profesiinu osvitu»* [*Law of Ukraine "On Vocational Education"*] [online] (Ostannie onovlennia 05 Lystopad 2020) Dostupno: <https://zakon.rada.gov.ua/laws/show/103/98-%D0%B2%D1%80#Text> [Data zvernennia 05 Kviten 2021], [in Ukrainain].

Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2018. *Zakon Ukrainy «Pro osvitu»* [*Law of Ukraine "On Education"*], 2018, [online] (Ostannie onovlennia 17 Cherven 2021) Dostupno: <http://zakon2.rada.gov.ua/laws/show/2145-19> [Data zvernennia 05 Kviten 2021], [in Ukrainain].

Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2019. Zakon Ukrainy «Pro spryiannia sotsialnomu stanovlenniu ta rozvytku molodi v Ukraini» *[Law of Ukraine "On Promoting Social Formation and Development of Youth in Ukraine"*], [online] (Ostannie onovlennia 06 Cherven 2019) Dostupno: <https://zakon.rada.gov.ua/laws/show/2998-12#Text> [Data zvernennia 06 Kviten 2021], [in Ukrainain].

Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2019. *Rozporiadzhennia Kabinetu Ministriv Ukrainy vid 12.06.2019 r. №419 «Pro skhvalennia Kontseptsii realizatsii derzhavnoi polityky u sferi profesiinoi (profesiino-tekhnichnoi osvity) «Suchasna profesiina (profesiino-tekhnichna) osvita na period do 2027 roku» [Order of the Cabinet of Ministers of Ukraine dated 12.06.2019 №419 "On approval of the Concept of implementation of state policy in the field of vocational (professional-technical) education" Modern vocational (professional-technical) education for the period up to 2027 "*], [online] (Ostannie onovlennia 12 Cherven 2019) Dostupno: <https://zakon.rada.gov.ua/laws/show/419-2019-%D1%80#Text> [Data zvernennia 06 Kviten 2021], [in Ukrainain].

Humennyi O.D. ta Radkevych V.O., 2016. SMART-kompleksy navchalnykh dystsyplin dlia profesiino-tekhnichnykh navchalnykh zakladiv [SMART-complexes of educational disciplines for vocational schools.]. *Teoriia i metodyka profesiinoi osvity [*Theory and methods of vocational education], 3 (11), s. 11-19, [in Ukrainain].

Humennyi O.D., 2013. Informatsiina kultura kerivnykiv PTNZ u psykholoho-pedahohichnykh doslidzhenniakh [Information culture of vocational school leaders in psychological and pedagogical research]. *Suchasni informatsiini tekhnolohii ta innovatsiini metodyky navchannia u pidhotovtsi fakhivtsiv: teoriia, dosvid, problemy [Modern information technologies and innovative teaching methods in training: theory, experience, problems]*, 35, s. 84-89, [in Ukrainain].

Didenko, O., 2014. Zabezpechennia yakosti profesiinoi pidhotovky kvalifikovanykh robitnykiv u rynkovykh umovakh [Ensuring the quality of professional training of skilled workers in market conditions]. *Profesiino-tekhnichna osvita [Vocational education*], 4, s. 9-12, [in Ukrainain].

Zakatnov D., 2018. Pidpryiemnytska diialnist yak napriam osvitno-profesiinykh traiektorii uchniv zakladiv profesiinoi (profesiino-tekhnichnoi) osvity [Entrepreneurship as an education-professional pathway direction for professional (vocational) education schools students]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific herald of the Institute of vocational education and training of NAES of Ukraine. Professional Pedagogy]*, 1(18), s. 96-101. DOI: https://doi.org/10.32835/2223-5752.2019.18.96-101, [in Ukrainian].

Yershov M.-O., 2019a. Suchasni problemy formuvannia tsyfrovoi kompetentnosti uchniv u zakladakh zahalnoi serednoi osvity [Modern problems of formation of digital competence of students in general secondary education institutions]. V: Kremen, V.H. ta Liashenko, O.I., red. Informatsiino-tsyfrovyi osvitnii prostir Ukrainy: transformatsiini protsesy i perspektyvy rozvytku. Materialy metodolohichnoho seminaru NAPN Ukrainy (Kyiv, Ukrainy, 4 Kviten 2019). [In: Information and digital educational space of Ukraine: transformation processes and prospects of development. Proceedings of the methodological seminar of the National Academy of Pedagogical Sciences of Ukraine. April 4, 2019 / Ed. V.G. Kremen, O.I Liashenko; (Kyiv, Ukraine, April 4, 2019)]. Kyiv, s.79-85, [in Ukrainain].

Yershova, L.M. ta Bazyl, L.O., 2020. Efektyvni vektory spivpratsi instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy z navchalno(naukovo)-metodychnymy tsentramy (kabinetamy) profesiino-tekhnichnoi osvity [Effective vectors of cooperation of the Institute of Vocational Education and Training of the National Academy of Pedagogical Sciences of Ukraine with educational (scientific)-methodical centers (offices) of vocational education]. *Visnyk NAPN Ukrainy [Bulletin of the National Academy of Pedagogical Sciences of Ukraine*], 2(1), s.1-10. https://doi.org/10.37472/2707-305X-2020-2-1-8-1, [in Ukrainain].

Zakatnov, D.O. red., 2018. Planuvannia y rozvytok profesiinoi kar`iery uchnivskoi molodi u systemi profesiino-tekhnichnoi osvity: navchalnyi posibnyk [Entrepreneurial activity as a direction of educational and professional trajectories of students of vocational (professional-technical) education: tutorial]. Zhytomyr: «Polissia», [in Ukrainain].

Liha zakon. Zakonodavstvo Ukrainy [Legislation of Ukraine], 2020. *Zakon Ukrainy «pro profesiinu osvitu» (proiekt) [Law of Ukraine "On Vocational Education" (draft)]*. [online] (Ostannie onovlennia 26 Zhovten 2020) Dostupno: <http://search.ligazakon.ua/l_doc2.nsf/link1/JI03503A.html> [Data zvernennia 05 Kviten 2021] , [in Ukrainain].

Radkevych V., 2018. Naukovo-metodychnyi suprovid modernizatsii vitchyznianoi systemy profesiinoi ta fakhovoi peredvyshchoi osvity u konteksti yevrointehratsiinykh protsesiv [Scientific and methodological support of modernization of the domestic system of professional and professional higher education in the context of European integration processes]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine Professional Pedagogy]*, 15, s.5-15, [in Ukrainain].

Seredina, I., 2019. Problemy i perspektyvy formuvannia pidpryiemnytskoi kompetentnosti maibutnikh bakalavriv z ekonomiky pidpryiemstva u protsesi fakhovoi pidhotovky [Some issues and prospects of developing entrepreneurial competency in future bachelors in business economics during professional training]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific herald of the Institute of vocational education and training of NAES of Ukraine. Professional Pedagogy*], 2(19), s. 58-64. DOI: https://doi.org/10.32835/2223-5752.2019.19.58-64, [in Ukrainian].

Odnoroh H. 2019. Key competences of future garment workers: the offer and demand in the labour market. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка [Scientific herald of the Institute of vocational education and training of NAES of Ukraine. Professional Pedagogy*]. 2(19). pp. 31-42. DOI: https://doi.org/10.32835/2223-5752.2019.19.31-42. [in English].

Yershov M. O., 2020. Digitalization of general secondary education: issues and prospects. *Вісник Житомирського державного університету імені Івана Франка. Педагогічні науки [Zhytomyr Ivan Franko State University Journal. Pedagogical Sciences*], 4 (103), pp.19-27, [in English].

Yershov M.-O., 2019b. Digitalisation of professional (vocational) and pre-high tertiary education of Ukraine: problems and prospects. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine Professional Pedagogy*], 1(18), pp. 67-74. DOI: https://doi.org/ 10.32835/2223-5752.2019.18.67-74, [in English].

Yershova, L., 2020. The Technology for Developing Entrepreneurial Competency in Future Qualified Specialists Using Self-Management Elements. *Professional Pedagogics*, 1(20), 151-159, [in English].

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ОРГАНІЗАЦІЯ ІННОВАЦІЙНОЇ ОСВІТНЬОЇ ДІЯЛЬНОСТІ З ФОРМУВАННЯ ГОТОВНОСТІ МАЙБУТНІХ КВАЛІФІКОВАНИХ РОБІТНИКІВ ДО ПІДПРИЄМНИЦЬКОЇ ДІЯЛЬНОСТІ

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Реферат:

Актуальність дослідження визначається зростанням популярності вітчизняних підприємств і об'єднань сфери торгівлі і громадського харчування та їхнім виходом на світові ринки, що обумовлює необхідність досягнення якісно нового рівня підготовки учнів для формування в них готовності до ведення самостійної підприємницької діяльності.

Мета: обґрунтувати особливості організації в закладі професійної (професійно-технічної) освіти інноваційної освітньої діяльності з формування готовності майбутніх фахівців сфери торгівлі і технологій харчування до підприємницької діяльності.

Методи: теоретичний аналіз наукових джерел – для з'ясування рівня дослідженості проблеми формування готовності учнівської молоді до підприємницької діяльності; емпіричні (вивчення та аналіз педагогічного досвіду у ДНЗ «Одеське вище професійне училище торгівлі та технологій харчування», робочих планів, програм підготовки майбутніх кваліфікованих робітників – для виявлення особливостей організації інноваційної освітньої діяльності в закладі професійної (професійно-технічної) освіти); опитувально-діагностичні (онлайн-опитування учнів щодо самооцінювання готовності до підприємницької діяльності в умовах розвитку малого бізнесу); SWOT-аналіз – для виявлення сильних і слабких сторін оганізації в закладі освіти інноваційної освітньої діяльності).

Результати: обґрунтовано актуальність дослідження готовності майбутніх фахівців сфери торгівлі і технологій харчування до підприємницької діяльності на базі ДНЗ «Одеське вище професійне училище торгівлі та технологій харчування»; представлено результати аналізу онлайн-опитування учнів щодо самооцінювання готовності до підприємницької діяльності в умовах розвитку малого бізнесу; охарактеризовано основні форми й методи роботи педагогічного колективу з формування готовності учнів до підприємницької діяльності.

Висновки: проведений SWOT-аналіз засвідчив важливість експериментального дослідження проблеми розвитку готовності майбутніх фахівців сфери торгівлі та технологій харчування до підприємницької діяльності на базі ДНЗ «Одеське вище професійне училище торгівлі та технологій харчування»; з'ясовано, що учні усвідомлюють важливість формування в закладах освіти готовності до підприємницької діяльності та розвитку підприємницької компетентності; виявлено потребу молоді в удосокналенні ІКТ-навичок, психологічної готовності до ведення власної справи, правової й економічної підготовки, професійної мобільності й швидкої адаптації випускників училища до сучасних умов виробництва, розвитку творчих здібностей, громадянської позиції та національної свідомості; представлено основні інструменти формування готовності учнів до підприємницької діяльності (запровадження програми «Основи інноваційного підприємництва»; оновлення змісту тем «Менеджмент малого бізнесу», «Основи маркетингу» з урахуванням специфіки малого бізнесу у сфері торгівлі й громадського харчування; запровадження серії тренінгів з формування готовності учнів до підприємницької діяльності; підготовка педагогічних працівників для реалізації завдань інноваційної освітньої діяльності).

Ключові слова: *професійна освіта, підприємницька компетентність, готовність до підприємницької діяльності, сфера торгівлі і технологій харчування..*

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INTEGRATIVE APPROACH TO THE TRAINING OF FUTURE PROFESSIONAL TEACHERS

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Abstract.

*Relevance***:** the need to substantiate an integrative approach in the training of teachers of vocational training is determined by the integration processes of modern Ukrainian education, aimed at openness, the formation of a holistic picture of the world, integration into the national history, traditions, the Ukrainian culture.

*Purpose***:** to determine the essence of integrated learning and to outline the specifics of the combination in the educational program of subjects of engineering and psychological-pedagogical cycles in the training of future teachers of vocational training.

Methods: theoretical (induction, deduction, generalization) for streamlining of scientific facts, establishing the relationship between different concepts; empirical (research, substantiation of pedagogical experience) for studying of educational programs of preparation of applicants of professional (vocational and technical) education and the account of their results in educational process.

Results: certain contradictions in the preparation of educational professional programs have been ascertained, the possibility of ensuring a parity of engineering and psychological and pedagogical disciplines in order to form future teachers of professional education engineering and psychological and pedagogical base has been identified; the implementation of integrated approach in the development and implementation of educational and professional training programs for bachelors in the specialty 015 "Vocational Education (Transport)" at the National Transport University has been substantiated.

Conclusions: It has been ascertained that integrated learning is one of the effective mechanisms to increase the level of professional training of future engineers-teachers through consistent and interconnected actions of a teacher and a student, which are aimed at forming a holistic picture of the world based on combining engineering and psychological-pedagogical disciplines; has been found that the specifics of the combination of engineering and psychological-pedagogical cycles in the training of future teachers of vocational training in educational programs consists of establishing interdisciplinary links, cross-cutting educational, technological and pedagogical practices, of creating integrated educational courses, of developing new forms of education, of implementing educational projects.

Keywords: *integration, integrated professional training, future engineers-teachers, integration of professional-technical and psychological-pedagogical knowledge. institutions of professional (vocational) education.*

Introduction. Reforming of the educational system of Ukraine, its integration into the European educational space has drastically affected the development of the entire education system, which has been lately aiming at providing proper conditions for quality training of competitive professionals in the global labor market. The transformation of these changes is determined by such factors as globalization, European integration and informatization of society. Currently, the domestic higher education gets renovated taking into account the provisions of a number of international agreements, according to which professional training of students from the degree of junior bachelor to doctor of sciences is incorporated into the system of higher education of Ukraine.

First of all, these provisions apply to the system of teacher training, which today form the intellectual potential of society and in which creative decision-making is a mandatory feature of their professional activity. It should be noted that among pedagogical workers, future engineers-teachers form a special category, whose professional activity is determined primarily by the state of the labor market whereto graduates of vocational education and professional higher education in certain specializations are about to introduce.

This system for vocational instructors' training provides for the objective interdependence of professional training as a pedagogical component and account of the societal problems of science, technology and production; for the relationship of the formation of a developed personality with professional engineering training; for interaction of educational and production processes; for unity of integration and differentiation within professional training.

As far as the integration processes in the system of vocational education are concerned, leading specialists of the Institute of Vocational Education of the National Academy of Pedagogical Sciences of Ukraine emphasize that the main characteristics of this system are a combination of psychological and pedagogical and professional orientation at the first level "bachelor" along with continuation of in-depth study of psychological, pedagogical and professional disciplines at the master's levels (Radkevich, Romanova, and Borodiyenko, 2018, p. 8).

However, a distinction should be made between integration and integrated learning. The first generic concept (from the Latin. Integration – restoration, memory. Integer – whole) implies an adequate combination and joint action of individual parts of a holistic system, while integrated learning – a process based on a comprehensive approach to learning, when there is an integration of forms of training organization and teaching methods; combination of goals of training and education; knowledge of general education and purely professional sphere; integration of the national system of vocational education into the European educational space.

World practices demonstrate that engineering and pedagogical education is created at the edge of a natural combination of engineering and psychological and pedagogical education, which is why it features interpenetration, mutual enrichment of one field of knowledge into another, resulting in reasonable integration of psychological and pedagogical components in the training of teachers of engineering and technical disciplines.

Sources. The issue of integration in scientific research of scientists is revealed in various aspects, namely: the integration of psychological and didactic principles in the educational process (G. Ball, I. Bekh, L. Vygotsky, V. Zagvyazinsky, I. Zyazyun, O. Leontiev, S. Polyakov, V. Rybalka, E. Stones, N. Talizina, L. Friedman, etc.); integration of professions (Yu. Kravets, G. Lukyanenko, V. Melnyk, etc.); pedagogical aspect of integration of forms, methods, content of education (I. Kozlovskaya, P. Luzan, I. Yakovlev, etc.).

The analysis of scientific studies gives grounds to consider integration in education as a general scientific methodology. However, a single approach to defining the concept of "integration" has not yet developed. In our opinion, the definition of this concept proposed by L. Masol (2006, p.8) is relevant and valid; "Integration is a state of internal integrity, interconnectedness of differentiated parts and functions of the system, as well as the process leading to such a state. Integration is the formation or restoration of integrity, the highest form of interaction, because it involves not only interaction but also the interpenetration of elements ".

This concept is shared by the authors of the Encyclopedia of Education (2010, p.1040) who believe that "Integrative approach is implemented in the study of integrated courses or individual subjects in education, when the integrity of knowledge is formed by integrating them on the basis of common concepts, application of methods and forms of learning, control and correction of students' achievements thus directing the educational process to combine knowledge".

Purpose: to determine the essence of integrated learning and to outline the specifics of the combination in the educational program of subjects of engineering and psychological-pedagogical cycles in the training of future teachers of vocational training.

Methods: theoretical (induction, deduction, generalization) for streamlining of scientific facts, establishing the relationship between different concepts; empirical (research, substantiation of pedagogical experience) for studying of educational programs of preparation of applicants of professional (vocational and technical) education and the account of their results in educational process.

Results and discussion. Evidently, integration processes in higher education are a priority in the overall development of education and aimed at achieving and implementing many principles of education: from forming a holistic picture of the world to implementing the principle of national orientation of education, integrating education with national history, traditions, Ukrainian culture, openness of education and in some way integration into the world educational space.

Indeed, vocational education is the center of science and culture, which transmits knowledge, skills and abilities (competence) to the younger generation, forms the worldview, culture, morals of each graduate – the future society. That is why it is so important not only to "equip" students with thorough professional knowledge, to form practical skills, abilities, relevant engineering and professional-pedagogical competencies, but also to implement a consistent model of training new generation teachers with personal worldview, developed culture, morals, humanities, values, ideals).

Recently, these problems have attracted the attention of both domestic and foreign educators, thanks to which partnerships are established and international cooperation programs are developed for vocational (vocational and technical) and professional higher education institutions. In particular, the National Transport University is involved in the Erasmus + project "New governance mechanisms based on partnership and standardization of vocational education in Ukraine" (PAGOSTE), the main purpose of which is the training of teachers working in vocational education and harmonization of vocational and technical expectations by educational institutions, motivation and competencies of future teachers, which are reflected in the content of an integrated combination of engineering and psychological and pedagogical disciplines.

Strategic tasks of integrated professional training of competent specialists in vocational (technical) education institutions are defined by Presidential Decrees, in particular: by the National Strategy for Education Development of Ukraine for the period up to 2021 (2013, s. 5); in the implementation of the goal of the Strategy of Sustainable Development "Ukraine – 2020" (2015, c.6), and by the Enactment of the Cabinet of Ministers of Ukraine "On approval of the National Qualifications Framework" (2011, c.7).

The Law of Ukraine "On Higher Education" (2014) regulates the implementation of the principle of international integration and integration of higher education in Ukraine in the European Higher Education Area and the development of scientific, scientific, technical and innovative activities of higher education institutions and their integration with industry. The Law of Ukraine "On Vocational Education" (1998) define the main task of meeting the needs of the country's economy in skilled and competitive workers in the labor market which nowadays requires integrated professional training of teachers and is supposed to provide a combination of professional and psychological-pedagogical components.

These components can be best combined in the preparation of didactic projects, "because they provide an opportunity to simultaneously develop both engineering skills and psychological and pedagogical" (Bakhtiyarova and Romanova, 2020, p. 8). Many opportunities for the implementation of integrated learning are provided by the dual form of education, which has recently become more widely used.

However, the ideas of integration face some difficulties at compiling educational programs, when it is necessary to maintain a parity of engineering and psychological-pedagogical disciplines, because the sui generis of drafting programs of professional technical and pedagogical training for engineering and pedagogical staff places general training at the beginning, then knowledge gets split through advanced study of elements of professional activity, which are organically combined in the content of educational programs to be founded on the principle of "cyclical regularity".

As you know, the basis for developing an educational program is the State Standard of Higher Education, according to which any educational and professional program determines the prerequisites for access to education, ECTS credits, list of general and special (professional) competencies, content of training formulated in terms of learning outcomes, and quality control requirements for higher education. Thus, specialty 015 "Vocational Education" at the National Transport University (NTU) takes into account the scope of educational and professional program on the basis of complete general secondary education 240 ECTS credits. On the basis of the degree of "junior bachelor" (educational qualification level "junior specialist") whereby an institution of higher education has the right to recognize and offset:

– at most 120 ECTS credits received within the framework of the previous educational program for the preparation of a junior bachelor (junior specialist) in the specialties of the field 01 Education/Pedagogy and specialties corresponding to the specialization for which the training is carried out;

– at most 60 ECTS credits received within the previous educational program of bachelor's degree in other specialties. At the same time, according to the Standard of Higher Education, 50% of the educational program is directed to the acquisition of general and special (professional) competencies in the specialty.

The implementation of integrative approach during the educational process is based on the systematic application of interactive technologies, in particular, level differentiation, development of critical and professional thinking, module-block learning, project learning technology, distance learning. Practical training is end-to-end, involves students of educational, technological and pedagogical practices.

A common practice within the integrative approach is the interdisciplinary approach, which is organized on the principle of creating extended educational programs; preparation of integrated educational courses; development of new forms of learning organization (classes with interdisciplinary links, integrated webinar, web quest, business game, binary training); implementation of educational projects. Interdisciplinary integration links strengthen the interaction of all didactic principles in the real learning process. In any didactic system, built on the principle of interdisciplinary, all stages (links) of interaction between a teacher and a student are rebuilt, so the technology for holding of integrated classes may vary. It depends on the goals, objectives and content of the lesson, methods of activity, situations that arise in the process of its implementation and in most cases have a procedural structure (purpose – motive – content – means – result – control).

It should be noted that the main trends in the use of integration processes are the desire to reduce the amount of educational and program documentation; use of a differentiated approach to determining the levels of qualification, licensing of new professions; creating attractive learning conditions through the expansion of laboratories equipped with the up-front technical aids; expanding opportunities for the formation of creative, physically and morally healthy, educated personality, the disclosure of its abilities; meeting the growing educational and cultural needs.

In terms of content, thematic integration is implemented as the selection and integration of cross-cutting components of the content of education: general, polytechnic and special, which form the basis for mastering professional disciplines, cross-cutting components of which form the basis of any subject. In the training of future specialists in the specialty 015 "Professional education (Transport), this is manifested, for example, in the simultaneous conduct of practical classes in technical disciplines with multimedia support of didactic provisions of the organization of training, justification of didactic principles used; checking the formation of both professional and pedagogical competencies or pedagogical justification of appropriate forms of control of knowledge, skills and abilities.

For the record, during the pedagogical practice on the basis of the Educational and Scientific Center of Vocational Education of the National Academy of Pedagogical Sciences of Ukraine, students of vocational education of NTU profited from conducting classes under the guidance of leading teachers of the institution. While preparing summaries of classes on road transport industry, students in addition to presentation of new material, focused on the didactic conditions of structuring educational material and the development of business communication skills, paid attention to technical analysis of certain provisions using methods of scientific and pedagogical research. In doing so a multimedia projector, an interactive whiteboard, a laptop, car equipment, fragments of educational films, etc. were widely used. With regard to technological practice, the heads of professional engineering departments often focus their efforts only on the acquisition of research and production experience, on the formation of practical skills and skills in working environment and, unfortunately, in most cases do not use integrative approach to goals, objectives and content of practice.

Such a state of integrated professional training of future engineers-teachers is exacerbated by the shortcomings of pedagogical theory and practice, among which there are certain contradictions between:

– the requirements set by the international community, one the one hand, and the domestic requirements applicable to the qualification level of future specialists at professional colleges and institutions of vocational education;

– the current need to create an effective innovative system of integrated professional training of future professionals with due regard for modern innovations, technical and technological changes, structural and semantic production transformations, on

the one side, and insufficient development of pedagogical technologies and methods of professionally integrated learning on the other side;

– the need to increase the level of pedagogical skills of teachers of vocational education for the implementation of integrated professional training and discussion of these issues in advanced training courses for teachers and masters of industrial training;

– the existing need to provide students with knowledge on different trajectories of training, on future activities based on openness, continuity of education and, on the other hand, absence of this important point in the regulations applicable to the training of future teachers.

Based on the multifaceted analysis of the category "integrative approach in education" it can be stated that it is a multifaceted, multidimensional, multifunctional category, that is why the implementation of an integrated approach requires the definition of such concepts as: integrated learning; integration of professions; integration components of content, forms, methods; integrated technologies, etc. In addition, we consider it necessary to create a methodological system that would indeed combine all the requirements and principles of integrated training, create pedagogical conditions for the formation and development of "integrated competence" (generalized description of qualification level, consisting of general and special competencies and conforming to expected program based training outputs “On approval of the action plan for the implementation of the National Qualifications Framework for 2016–2020.”) This already requires urgent and painstaking work on further improvement and development of vocational education.

Conclusions. Theoretical analysis of educational regulations, curricula for training of students studying at NTU in the specialty 015 "Vocational Education (Transport)" and generalization of their own pedagogical experience gave grounds to recognize that integrated learning is a set of consistent and interconnected actions between teachers and students, aimed at forming with future professionals a holistic picture of the world by combining in the curriculum a list of disciplines that provide both general education (cycle of humanities, socio-economic and fundamental disciplines), polytechnic (professionally-oriented disciplines) and special (professional-practical disciplines) training. And this, in turn, requires pedagogical skills and a sufficient professional level of work in higher education, preferably with some experience in the relevant industry.

Pedagogical practices demonstrate that the use of integrated learning opportunities in the educational process not only helps students to fully and deeply master the material, but it allows teachers to "go" beyond a particular subject (a particular educational field) and thus helps future professionals to expand the understanding of different areas of human activity, promotes the development of analytical, synthetic and thinking skills and abilities.

Since the processes of integration in technical (vocational) education are a pattern based on a combination of vocational and psychological and pedagogical knowledge, we consider it appropriate to train a contemporary engineer-teacher for integrated training in certain specializations. At the same time, the implementation of the provisions of integrated professional training for future specialists requires a special methodological and technological basis that will ensure the effective functioning of such a system.

Thus, there exists an urgent need to develop methods and technologies for integrated learning; to elaborate distance learning courses to improve the professional skills of teachers and masters of industrial training, to put in place professional standards of integrated professions by qualifications, in accordance with the National Qualifications Framework and, on their basis, to draw up educational and professional programs for integrated training of future professionals

List of references

Бахтіярова, Х. Ш. і Романова, Г. М, 2020. Дидактичне проєктування як умова набуття педагогічного досвіду майбутніми інженерами-педагогами. *Вісник Київського національного університету імені Тараса Шевченка*. *Серія Педагогіка*, 2(12), с. 6-9.

Верховна Рада України. Законодавство України, 2014. *Про вищу освіту* (№ 1556-VII). [online] (Останнє оновлення 1 Квітень 2021) Доступно: <http://zakon4.rada.gov.ua/laws/show/1556-18/page6> (Дата звернення: 25.06.2021).

Верховна Рада України. Законодавство України, 2013. *Про Національну стратегію розвитку освіти в Україні на період до 2021 року. Указ Президента України від 25 черв. 2013 р.* (№ 344/2013). [online] (Останнє оновлення 26 Березень 2013) Доступно: <http://zakon4.rada.gov.ua/laws/show/344/2013> (Дата звернення: 25.06.2021).

Верховна Рада України, 2016. Проєкт Закону України «*Про професійну освіту*». [online] (Останнє оновлення 16 Листопад 2017) Доступно: <http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=60247> (Дата звернення: 25.06.2021).

Верховна Рада України, Законодавство України, 2015. *Про Стратегію сталого розвитку «Україна – 2020». Указ Президента України від 12 січня 2015 р. (№ 5/2015).* [online] (Останнє оновлення 12 Січень 2015) Доступно: <http://zakon4.rada.gov.ua/laws/show/5/2015> (Дата звернення: 25.06.2021).

Кабінет Міністрів України, 2016. *Про затвердження плану заходів щодо впровадження Національної рамки кваліфікацій на 2016-2020 рр.* (№1077-р). [online] (Останнє оновлення 12 Грудень 2016) Доступно: <https://zakon.rada.gov.ua/laws/show/1077-2016-%D1%80#Text> (Дата звернення: 30.06.2021).

Кремень, В. Г., ред., 2008. *Енциклопедія освіти*. Київ: Юрінком Інтер.

Масол, Л. М., 2006. *Загальна мистецька освіта: теорія і практика: монографія.* Київ: Промінь.

Міністерство освіти і науки України, 2020. *Стандарт вищої освіти України. Другий (магістерський) рівень, галузь знань 01 Освіта / Педагогіка, спеціальність 015 Професійна освіта (за спеціалізаціями)* (№1435). [online] Доступно: <https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2020/11/20/015_profesiyna_osvita_mahistr.pdf> (Дата звернення: 30.06.2021).

Міністерство освіти і науки України, 2019. *Стандарт вищої освіти України. Перший (бакалаврський) рівень, галузь знань 01 «Освіта / Педагогіка», спеціальність 015 «Професійна освіта (за спеціалізаціями)»* (№ 1460). [online] Доступно: <https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2019/11/22/2019-11-22-015-B.pdf> (Дата звернення: 30.06.2021).

Радкевич, В., Романова, Г. та Бородієнко, О., 2018. Концептуальні основи практико-орієнтованої підготовки викладачів професійної освіти і навчання. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка.* 16, с. 5-13. DOI: https://doi.org/10.32835/2223-5752.2018.16.5-13.

Translated & Transliterated

Bakhtiiarova, Kh. Sh., Romanova, H. M, 2020. Dydaktychne proektuvannia yak umova nabuttia pedahohichnoho dosvidu maibutnimy inzheneramy-pedahohamy [Didactic projecting as a precondition for building up of the teaching experience among prospective engineers-educators]. *Visnyk Kyivskoho natsionalnoho universytetu imeni Tarasa Shevchenka. Seriia Pedahohika [Bulletin of Taras Shevchenko National university of Kyiv. Pedagogy]*, 2(12), p. 6-9, [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2014. *Pro vyshchu osvitu (№ 1556-VII) [About higher education]*. [online] (Ostannie onovlennia 1 Kviten 2021) Dostupno: <http://zakon4.rada.gov.ua/laws/show/1556-18/page6> (Data zvernennia: 25.06.2021), [in Ukrainian].

Verkhovna Rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2013. *Pro Natsionalnu stratehiiu rozvytku osvity v Ukraini na period do 2021 roku. Ukaz Prezydenta Ukrainy vid 25 cherv. 2013 r. (№ 344/2013) [On the National Strategy for the Development of Education in Ukraine until 2021. Decree of the President of Ukraine of June 25. 2013]*. [online] (Ostannie onovlennia 26 Berezen 2013) Dostupno: <http://zakon4.rada.gov.ua/laws/show/344/2013> (Data zvernennia: 25.06.2021), [in Ukrainian].

Verkhovna Rada Ukrainy [Verkhovna Rada of Ukraine], 2016. *Proiekt Zakonu Ukrainy «Pro profesiinu osvitu» [Draft Law of Ukraine "On Vocational Education"].* [online] (Ostannie onovlennia 16 Lystopad 2017) Dostupno: <http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=60247> (Data zvernennia: 25.06.2021), [in Ukrainian].

Verkhovna Rada Ukrainy, Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2015. Pro Stratehiiu staloho rozvytku «Ukraina – 2020». *Ukaz Prezydenta Ukrainy vid 12 sichnia 2015 r. (№ 5/2015) [About the Sustainable Development Strategy "Ukraine - 2020". Decree of the President of Ukraine of January 12, 2015]*. [online] (Ostannie onovlennia 12 Sichen 2015) Dostupno: <http://zakon4.rada.gov.ua/laws/show/5/2015> (Data zvernennia: 25.06.2021), [in Ukrainian].

Kabinet Ministriv Ukrainy [Cabinet of Ministers of Ukraine], 2016. *Pro zatverdzhennia planu zakhodiv shchodo vprovadzhennia Natsionalnoi ramky kvalifikatsii na 2016-2020 rr. (№1077-r) [On approval of the action plan for the implementation of the National Qualifications Framework for 2016-2020.].* [online] (Ostannie onovlennia 12 Hruden 2016) Dostupno: <https://zakon.rada.gov.ua/laws/show/1077-2016-%D1%80#Text> (Data zvernennia: 30.06.2021), [in Ukrainian].

Kremen, V. H., red., 2008). Entsyklopediia osvity [Encyclopedia of Education]. Kyiv: Yurinkom Inter.

Masol, L. M., 2006. *Zahalna mystetska osvita: teoriia i praktyka: monohrafiia [General art education: theory and practice: monograph]*. Kyiv: Promin, [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy [Ministry of Education and Science of Ukraine], 2020. *Standart vyshchoi osvity Ukrainy. Druhyi (mahisterskyi) riven, haluz znan 01 Osvita / Pedahohika, spetsialnist 015 Profesiina osvita (za spetsializatsiiamy) (№1435) [Standard of higher education of Ukraine. Second (master's) level, field of knowledge 01 Education / Pedagogy, specialty 015 Professional education (by specializations)].* [online] Dostupno: <https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2020/11/20/015_profesiyna_osvita_mahistr.pdf> (Data zvernennia: 30.06.2021), [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy [Ministry of Education and Science of Ukraine], 2019. *Standart vyshchoi osvity Ukrainy. Pershyi (bakalavrskyi) riven, haluz znan 01 «Osvita / Pedahohika», spetsialnist 015 «Profesiina osvita (za spetsializatsiiamy)» (№ 1460) [Standard of higher education in Ukraine. The first (bachelor's) level, field of knowledge 01 "Education / Pedagogy", specialty 015 "Professional education (by specializations)"].* [online] Dostupno: https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2019/11/22/2019-11-22-015-B.pdf (Data zvernennia: 30.06.2021), [in Ukrainian].

Radkevych, V., Romanova, H. ta Borodiienko, O., 2018. Kontseptualni osnovy praktyko-oriientovanoi pidhotovky vykladachiv profesiinoi osvity i navchannia [Conceptual foundations of future VET teacher`s training]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika* [*Scientific Herald of the Institute of Vocational Education and Training of the National Academy of Pedagogical Sciences of Ukraine. Vocational pedagogy*], 16, s. 5-13. DOI: https://doi.org/10.32835/2223-5752.2018.16.5-13, [in Ukrainian].

УДК 378:377:011.3-051]:37.091.33-044.247

ІНТЕГРАТИВНИЙ ПІДХІД У ПІДГОТОВЦІ МАЙБУТНІХ ПЕДАГОГІВ ПРОФЕСІЙНОГО НАВЧАННЯ

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Реферат:

Актуальність застосування інтегративного підходу у підготовці педагогів професійного навчання зумовлена інтеграційними процесами сучасної української освіти, спрямованими на відкритість, формування цілісної картини світу, інтеграцію з національною історією, традиціями, українською культурою.

Мета: визначити сутність інтегрованого навчання у підготовці майбутніх педагогів професійного навчання та окреслити специфіку поєднання в освітній програмі предметів інженерного та психолого-педагогічних циклів.

Методи: теоретичні (індукція, дедукція, узагальнення) – для систематизації наукових фактів, встановленні взаємозв'язку між різними поняттями; емпіричні (дослідження, обґрунтування педагогічного досвіду) – для вивчення освітніх програм підготовки здобувачів професійної (професійно-технічної) освіти та врахування їх результатів в освітньому процесі.

Результати: визначено суперечності при складанні освітніх професійних програм, можливості забезпечення паритетного співвідношення інженерних та психолого-педагогічних дисциплін з метою формування у майбутніх викладачів професійної освіти інженерної та психолого-педагогічної бази; обґрунтовано інтегрований підхід при розробленні та реалізації освітньо-професійної програми підготовки бакалаврів зі спеціальності 015 «Професійна освіта (Транспорт)» в Національному транспортному університеті.

Висновки: визначено, що інтегроване навчання є одним із дієвих механізмів підвищення рівня професійної підготовки майбутніх інженерів-педагогів за рахунок послідовних та взаємопов'язаних дій викладача й здобувача освіти, спрямованих на формування цілісної картини світу на основі об'єднання змісту інженерних і психолого-педагогічних дисциплін; з'ясовано, що специфіка поєднання в освітній програмі предметів інженерного та психолого-педагогічних циклів у підготовці майбутніх педагогів професійного навчання полягає у встановленні міжпредметних зв'язків, наскрізності навчальної, технологічної і педагогічної практик, створенні інтегрованих освітніх курсів, розробленні нових форм організації навчання, впровадженні навчальних проєктів.

Ключові слова: *інтеграція, інтегрована професійна підготовка, майбутні інженери-педагоги, інтеграція професійно-технічних та психолого-педагогічних знань, заклади професійної (професійно-технічної) освіти.*

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ORGANIZATIONAL AND PEDAGOGICAL CONDITIONS OF FUTURE MARINE ENGINEERS ACQUIRING PROFESSIONAL COMPETENCIES

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Abstract.

*Relevance***:** the need to develop and implement in practice the organizational and pedagogical conditions for future marine engineers to acquire basic professional competency in the process of studying the educational component “Marine Engineering Practice” is determined by the provisions of International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW) and basic IMO STCW Model Courses (Course 7.02 “Chief engineer officer and second engineer officer”, Course 7.03, Course 7.04 “Officer in charge of an engineering watch”.

*Aim***:** of the article was to substantiate the organizational and pedagogical conditions for the acquisition of primary professional competency by future marine engineers in the study of the educational component "Marine Engineering Practice" and their impact on further professional activities in the crew of a ship.

Methods: theoretical (logical analysis of research in the field of professional pedagogy and methods of professional training in higher education; logical-structural analysis to determine the nature and structure of the concept of "professional competence" and "professional training of future marine engineers for practical actions on board", substantiating organizational and pedagogical conditions of the specified training); empirical (study and analysis of pedagogical experience of practical training of future marine engineers); experimental (self-assessment – to comprehend the results of professional training for interaction of the ship's crew in dangerous and emergency situations).

Results: organizational and pedagogical conditions for the formation of professional competence in future marine engineers are developed and implemented in the educational process, which contributes to the construction of an effective individual educational trajectory in a higher maritime educational institution and ensures continuity of professional development of future specialists.

Conclusions: it is proved that the introduction of organizational and pedagogical conditions for the acquisition of professional competencies by future ship mechanics in the process of studying the educational component "Marine Engineering Practice", gave students the opportunity to move to higher professional disciplines, as evidenced by independent testing. The effectiveness of the developed organizational and pedagogical conditions is also confirmed by the results of students' tests at the interdepartmental seminar.

Keywords: *future marine engineers, basic (primary) professional competence, institutions of higher maritime education, Marine Engineering Practice, STCW Convention.*

Introduction. The national doctrine of educational development in the XXI century defined the main goal of educational activities of professional (vocational) schools as the progress of an individual as a professional, a person of high culture, high qualification, capable of creative work, professional growth, mobility in mastering and implementing new technological processes and technologies. It creates conditions for professional self-realization of the individual and meeting the needs of society and the state in qualified specialists (National Strategy for Education Development in Ukraine until 2021, 2013).

To summarize this approach to the formation of the individuality of a marine specialist, it is worth noting that research on the development of professional competence, in particular the professional competence of crews for shipping companies is an urgent problem. The International Maritime Organization (IMO) has approved a number of documents (Convention and the STCW Code) that regulate the requirements for professional competence (Scope: basic knowledge, understanding and professional skills) as well as professional competence of a ship's crew (Methods of demonstration and criteria for evaluating the results of professional training of seafarers.)

Due to the modernization of the fleet and the introduction of automated control systems on ships, the training and production and methodological base of marine institutions of higher education lags behind not only time requirements but also the demands of shipowners to the professionalism of ship engineers, which completely changed the paradigm of their professional education.

Apart from that, the problem of acquiring basic professional competency by students majoring in ship engineering (level of operation) in maritime institutions of higher education remains insufficiently studied. Given the requirements of the International Maritime Organization (IMO) (The STCW Convention and the Code) and higher education standards, it should be recognized that the training of future engineer officers does not meet modern innovation challenges, which are recorded at the national level. In particular, these are the following national trends: the modern system of education and training of maritime professionals is not able to ensure the innovative development of the transport industry; the national standards for the training of transport specialists remain undefined, the system of their training and retraining is imperfect; EU member states do not recognize documents on education obtained in Ukrainian higher education institutions (individual licenses and certificates) (National Transport Strategy of Ukraine for the period up to 2030 by order of the Cabinet of Ministers of Ukraine, 2018).

Introducing an evidence-based approach to the training of future engineers in the period of getting their basic professional competency, at the initial stage of their training (year 1-2), provides an opportunity to challenge fundamental theoretical knowledge and practical skills at the level of international minimum standard of competence for engineer officers. Note that this is also due to shipping companies' need to implement ISO 9001-2015 Quality System, without which the operation of the company is impossible, as well as the professional and career growth of its staff and achieving strategic goals in the international transportation market.

Sources. Analysis of the reviewed scientific sources (S. Voloshinov, O. Denderenko, V. Yefentiev, M. Korolchuk, O. Novikov, M. Sherman, O. Sobkevich, V. Topalov, etc.) on the formation and development of professional competency of specialists for high-quality maintenance of modern equipment of the world's fleets confirm that introducing innovative forms and methods of training, information technology, use of training ship and timely changes to the acquisition of the necessary primary competency by cadets – is quite relevant and timely. Considering this, there is a need to lay the foundations of professionalism in cadets at the beginning of acquaintance with the profession, which in the further accumulation of practical experience and theoretical knowledge will be the basis for the formation of professional competence.

According to O. Novikov (1998, pp. 8-10), it is necessary to consider the formation and development of an individual as a philosophical category that "demonstrates the process of movement, change of integral systems. "Characteristic features of this process are: the emergence of a qualitatively new object (or its state) – direction, irreversibility, regularity, unity of both quantitative and qualitative changes, the relationship of progress and regress, the cyclical form that unfolds over time. Internal contradictions are the main source of growth, and the process itself is essentially self-development, as proven by modern science. It is characterized by the deep irreversibility of development, multivariance and alternatives, meanwhile, the "carriers" of progress are complex, open, self-organized systems.

Due to this, we emphasize that the constant improvement of technical equipment of ships, the introduction of new control systems for marine engines using IT technologies, as well as the requirements of

the STCW Convention and the Code require to begin the process of training cadets according to an individual syllabus to acquire basic professional competency of future marine engineers, so that in the future they would be able to organize the process of self-education in their specialty. With this approach there is a possibility of purposeful, motivated acquisition of primary professional knowledge, skills and abilities in the process of communication between the cadet and the teacher in a dual form of learning, using modern information and communication technologies (ICT). The acquired theoretical knowledge, skills and abilities are constantly consolidated during practical and laboratory classes, as well as by working out tasks in the conditions of the educational and production base of the educational institution, or the training vessel.

Aim: of the article was to substantiate the organizational and pedagogical conditions for the acquisition of primary professional competency by future marine engineers in the study of the educational component "Marine Engineering Practice" and their impact on further professional activities in the crew of a ship.

Methods: theoretical (logical analysis of research in the field of professional pedagogy and methods of professional training in higher education; logical-structural analysis to determine the nature and structure of the concept of "professional competence" and "professional training of future marine engineers for practical actions on board", substantiating organizational and pedagogical conditions of the specified training); empirical (study and analysis of pedagogical experience of practical training of future marine engineers); experimental (self-assessment – to comprehend the results of professional training for interaction of the ship crew in dangerous and emergency situations).

Results and discussion. In the international labour market, the competitive ability of personnel is determined by the requirements of the STCW Convention and the Code to the professional competence of seafarers, primarily the level of minimum knowledge, skills and professional skills required for seafarers' diplomas (work diplomas and certificates). Also, the Convention and the EITC Code in the “Scope of Competence” section emphasize that the level of theoretical knowledge on the issues listed in column 2 of Table A-III / 1 (2010, p. 224) should be sufficient for engineers to fulfill their obligations of watchkeeping. Additional requirements are: the ability to learn new knowledge, initiative, professional mobility, extraordinary decision-making, the desire to maintain labor discipline in the ship's crew, etc .; on ships of foreign companies it is professional competence at the level of international requirements, knowledge of the main provisions of the STCW Convention to perform their professional duties on ships at the level of operation, proficiency in a foreign language, ability to work in multinational crews, etc. The first educational component that provides the acquisition of primary professional competency in future marine engineers in the first year, in combination with other engineering disciplines (technical mechanics, engineering graphics, materials technology, material resistance, etc.) and technological practice is "Marine Engineering Practice" (MEP). It is a basic and fundamental component for the maritime direction, which for the first time introduces cadets to the concept of not only the marine profession, but also reveals the features of marine engineering, technology, management, responsibility and provides familiarity with marine technical terms, basics of marine engineering, gives the opportunity to learn theoretical material for further study of subjects of technical and special cycles that help in the further study of the structure and operation of the ship's power plant (SPP).

"Marine Engineering Practice" allows young cadets to recognize themselves as part of the maritime society, as well as to understand that the acquired initial professional basic competency for work on ships are significantly different from related professions of coastal specialties. Assimilation of this educational component, first of all, forces the teaching staff to focus more on cadets to study marine engineering concepts and features of their use in the future profession, namely:

– *technical* – the specifics of which is to inform the cadets that the ship during the voyage is at a considerable distance from the shore bases of maintenance, supply and repair, as well as that the number of ship personnel is too limited (reduced crews). Only the chief (senior) engineer officer of the ship himself decides the issue of organizing repair works, access to the necessary modes of operation of the ship's power plant (SPP). In case of any mechanism or details ceasing to work, questions of their repair, replacement, search of necessary materials and tools, are solved only by the efforts of the ship's crew. That's why marine engineers even have a saying: "One part can fail a hundred times, but each time in a special way, and the mechanic solves three problems: how to repair, what to repair and what materials to use." In this case, we have a significant psychological burden not only on the engineer crew, but also on the entire crew of the ship as a whole;

– *social* – multinational crew members, which means: the difference in religion of team members, which seriously affects the behavior, traditions, conditions of staying on board and the diet of the crew during the flight, etc .; personal political views of the crew members, and cadets must remember for the future that there is an unwritten law for sailors around the world – the ship's territory is free (neutral) from political and religious views;

– *psychological* – a sailor for a long time is at a considerable distance from family and normal living conditions. During the classes, the teacher (who has enough not only professional experience in marine engineering, but also experience in mixed multinational crews) on the examples of maritime practice and personal experience provides thorough psychological training of cadets to possible conflicts and acquaints them with possible ways out or their neutralization;

– *physiological* – the accumulation of fatigue during long emergency repairs and transitions that require constant presence of the engineer in the engine room (passage of channels, locks, mooring operations, movement of the ship in the ice, etc.), and this puts a significant amount of stress on the sailor, both moral and physical strength. In addition, being in an unstable environment (the influence of the ship's hull, significant transitions of the ship in storms, etc.), extreme conditions of the body, lack of healthy sleep, seasickness in many crew members – are also important components of the crew. However, despite this, cadets at the beginning of training must learn a simple thing – in dangerous situations, you should never lose a sense of humor, which helps to neutralize many negative factors.

According to the results of the study on the educational component of the MEP, in particular – on the acquisition of basic professional competency in engineering specialties in maritime educational institutions of Ukraine (Kherson, Mykolaiv, Mariupol, Odessa), there were some shortcomings of training under the educational program "Management ship technical systems and complexes ", specifically:

– acquisition of primary professional competency of specialists to work in the engine room is in accordance with the provisions of the STCW Code (section A – III / 1 columns 1-2) in the form of an educational component, but they do not sufficiently meet the needs of the modern labour market and are not related to their prospects of further employment on ships of foreign companies and further professional becoming;

– professional training of marine engineers in educational institutions doesn't always have the opportunity to carry out high-quality technological and swimming practice on new ships in engine rooms with modern automated equipment, which does not allow to sufficiently develop the level of their professionalism;

– when mastering the minimum standard "Scope of competence" of the STCW Convention and the Code, future engineer officers have too little understanding of theoretical material because they do not have a minimum technical base of terms and practical experience, which significantly reduces the level of mastering material and basic professional competence.

The process of getting the primary professional competency of future marine engineer officers in maritime education institutions for ships of the modern generation in Ukraine is generally acceptable for the maritime states of Europe and the world. This process will continue because Ukraine has signed an agreement on joining the European Competence Scheme, which, unlike the European Qualifications Framework, focuses on specific employment activities. However, it should be noted that the distribution of primary professional competency may differ, which is more related to "national labour systems".

We propose to view the concept of "basic professional competency of future marine engineers" as a pedagogical process of initial professional training of future engineer officers to achieve the level of minimum standards of theoretical knowledge, skills and professional skills defined by section A-III / 1 (Scope of competence) and listed in column 1-2 of the STCW Convention and the Code, which should be sufficient for mechanics to perform their watchkeeping duties.

According to the recommendations for the recognition of basic educational components in the planning of the educational process should, above all, take into account:

– positive motivation of the future marine engineers in the corresponding knowledge and skills in the working professions specified in the ship roles of the engine crew;

– certain professional competencies of labour activity, which can be performed by independently mastering the duties of a marine engineer officer in the process of training;

– physical and psychological stress on seafarers during a long voyage;

– division of professional responsibilities

between members of the crew of a seagoing vessel to perform emergency work in the event of dangerous and emergency situations.

Based on the results of studying and analyzing scientific sources and practical experience of working on modern ships, the most significant organizational and pedagogical conditions for acquiring basic professional competency in the process of studying the educational component of the MEP were identified.

The first pedagogical condition is the formation of positive motivation to learn the basic sea terms, features of work, advantages and disadvantages of professional activity of specialists of the engine department, career growth, advanced training and certification training of seafarers.

The second pedagogical condition – updating the content of vocational training through the introduction into the educational process of primary practical skills in working professions (ship's engineer, ship's electrician, ship's electric gas welder, ship's turner, etc.), whose professional activities are closely related not only to theoretical material but also with work in production workshops, which significantly ensures the integrity of the educational process for the formation of primary professional competency.

The third pedagogical condition is related to the combination of the educational process in the production workshops of the educational institution and the training ship, on which future mechanics in the engine room and in real operation of the ship's engine are on watch and perform work according to the crew plan, which not only activates the cognitive interest in mastering the profession of a marine engineer, but also provides an opportunity to test yourself as a future specialist.

The fourth pedagogical condition – the development and use of educational and methodological complex for the use of training equipment and simulation tools in consolidating the practical actions of cadets in the process of acquiring primary professional competency and providing comprehensive training for further mastery of professional disciplines in unity of goals, content, forms, innovative learning technologies. following courses.

Organizational forms of acquiring primary professional competencies in the process of studying the educational MEP:

– *forms* (lecture with elements of professional orientation, introduction to the speciality; lecture-discussion; work on practical tasks on technological equipment in groups; seminar on solving situational tasks and exercises; performing tasks on training equipment according to the requirements of the STCW Convention; group or individual work by cadets in the workshop or in the engine room of the training vessel);

– *technologies* (processing of materials and alloys; disassembly-assembly of mechanisms, repair of ship mechanisms; training tests; IT-technologies in operation of SPP);

– *methods* of (analysis and resolution of conflict situations, demonstration of competence, assessment, virtual reality);

– *means* of (multimedia, audio, video equipment, graph projectors, posters, schemes, stands, training complexes, demonstration models, models, natural samples, etc.).

A characteristic feature of acquiring primary professional competencies in future first-year marine engineers is the lack of basic technical knowledge and weak general training, which forces the teaching staff of the educational institution to approach this problem comprehensively. Purposeful pedagogical actions based on the laws of development of the cadet's personality taking into account the specific requirements of the profession, as well as the objective and subjective order that form the primary professional knowledge and practical skills in the process of professional training are determined. Acquired primary technical knowledge of the educational component "Materials Technology" and practical skills learned in the workshop of the educational institution according to the program of technological practice – is the first step to study MEP and acquaint cadets with technical and marine terms of the profession. Thus, the introduction of organizational and pedagogical conditions in combination with educational and methodological support of the educational component of MEP (lecture notes, textbooks, technological instructional cards, drawings, etc.) allows cadets to gradually move from the initial professional steps to mastering the profession to higher academic, basic education, strengthening the role of motivation for further growth of their professionalism and increasing their readiness to perform professional duties on board.

Conclusions. Based on the results of the analysis of scientific literature, study of the experience of maritime educational institutions to study educational components (marine engineering practice, engineering graphics, materials technology, technological practice in the training of future ship mechanics) concluded that indicators of quality and efficiency of engineering knowledge and mastery maritime technical terms are significantly increased

under the condition of introduction into the educational process of organizational and pedagogical conditions, namely: formation of positive motivation to master the basic sea terms, features of work, advantages and disadvantages of professional activity of specialists of the engine department, career growth, advanced training and certification training of seafarers; updating the content of vocational training through the introduction into the educational process of primary practical skills in working professions, without mastering which the future marine engineers is not able to take the position of shift mechanic; combination of the educational process in the production workshops of the educational institution and on the training ship, where future ship mechanics in the engine room and the actual mode of operation of the ship engine study the disciplines of the technical direction; development and implementation of educational and methodological complex for the use of training equipment and simulation tools in consolidating the practical actions of cadets in the process of acquiring primary professional competency and providing comprehensive training for further mastering of professional disciplines in the unity of goals, content, forms, innovative learning technologies. is the basis for the formation of a marine engineer as a specialist with high professional competence, competitive in the international maritime labour market.

It is proved that the introduction of the described organizational and pedagogical conditions for the acquisition of primary professional competencies by future marine engineers in the process of studying the educational component "Marine Engineering Practice" allowed students to move to higher professional disciplines, as evidenced by independent testing. The effectiveness of the developed organizational and pedagogical conditions is also confirmed by the results of students' tests at the interdepartmental seminar. In particular, the quality of mastering technical disciplines is increased by 25% compared to control groups.

List of references

Дендеренко, О. О., 2018. *Формування професійної компетентності майбутніх суднових механіків у процесі інтеграції природничих і загальнотехнічних дисциплін.* Кандидат наук. Національний педагогічний університет імені М.П. Драгоманова.

Ефентьев, В. П., 2005. *Теория и практика управления качеством непрерывной профессиональной подготовки морских специалистов в академическом комплексе*. Доктор наук. Калининград. Балтийская государственная академия рыбопромыслового флота.

Корольчук, М. С. та Крайнюк, В. М. 2006. *Соціально-психологічне забезпечення діяльності в звичайних та екстремальних умовах*. Київ: Ніка-центр.

Національний інститут стратегічних досліджень при президентові України, 2013. Собкевич, О. В., Михайличенко, К. М., та Ємельянова, О. Ю. *Інноваційні перетворення на транспорті як чинник модернізації транспортно-дорожнього комплексу України* [online] Доступно*: http://www. niss. gov. ua/articles/1303/# _ftnref3*. [Дата звернення 14 Червень 2021].

Міжнародна морська організація, 2012. *Міжнародна конвенція про підготовку і дипломування моряків та несення вахти 1978 року (консолідований текст з манільськими поправками)*. Київ: ВПК «Експрес-Поліграф».

Урядовий портал, 2018. Національна транспортна стратегія України на період до 2030 року. Розпорядження Кабінету Міністрів України від 30 травня 2018 р. № 430-р. [online] (Останнє оновлення 30 Травень 2018) Доступно: https://www.kmu.gov.ua/npas/pro-shvalennya-nacionalnoyi-transportnoyi-strategiyi-ukrayini-na-period-do-2030-roku [Дата звернення 15 Червень 2021].

Верховна рада України. Законодавство України, 2013. Національна стратегія розвитку освіти в Україні на період до 2021 року від 25 червня 2013 року № 344/2013. [online] (Останнє оновлення 26 Червень 2013) Доступно: https://zakon.rada.gov.ua/laws/show/344/2013#Text [Дата звернення 15 Червень 2021].

Новиков, А. М., 1998. Профессиональное образование на рубеже третьего тысячелетия. *Магистр*, 1, с.59-68.

Топалов, В. П., 2004. *Уроки морських аварій*. Одеса.

Шерман, М. І. та Безбах, О. М., 2015. Структура професійної підготовки майбутніх судноводіїв у вищих морських навчальних закладах у контексті проблем формування інформаційної культури. *Наукові записки*, 141 (1), с.15-19.

Translated & Transliterated

Denderenko, O. O., 2018. *Formuvannia profesiinoi kompetentnosti maibutnikh sudnovykh mekhanikiv u protsesi intehratsii pryrodnychykh i zahalnotekhnichnykh dystsyplin [Formation of professional competence of future marine engineers in the integration process of natural and general technical disciplines.]*. Kandydat nauk. Natsionalnyi pedahohichnyi universytet imeni M.P. Drahomanova [National Pedagogical Dragomanov University], [in Ukrainian].

Efentev, V. P., 2005. *Teoriya i praktika upravleniya kachestvom nepreryivnoy professionalnoy podgotovki morskih spetsialistov v akademicheskom komplekse [Theory and practice of quality management in continuous vocational training of marine specialists in the academic complex]*. Doktor nauk. Kaliningrad. Baltiyskaya gosudarstvennaya akademiya ryibopromyislovogo flota [The Baltic Fishing Fleet State Academy], [in Russian].

Korolchuk, M. S. ta Krainiuk, V. M., 2006. *Sotsialno-psykholohichne zabezpechennia diialnosti v zvychainykh ta ekstremalnykh umovakh [Social and psychological security of duality in extraordinary and extreme minds*]. Kyiv: Nika-tsentr, [in Ukrainian].

Natsionalnyi instytut stratehichnykh doslidzhen pry prezydentovi Ukrainy [The National Institute for Strategic Studies], 2013. Sobkevych, O. V., Mykhailychenko, K. M., ta Yemelianova, O. Yu. *Innovatsiini peretvorennia na transporti yak chynnyk modernizatsii transportno-dorozhnoho kompleksu Ukrainy [Innovative transformations in transport as a factor in the modernization of the transport and road complex of Ukraine]* [online] Dostupno: http://www. niss. gov. ua/articles/1303/# _ftnref3. [Data zvernennia 14 Cherven 2021], [in Ukrainian].

Mizhnarodna morska orhanizatsiia [International Maritime Organization], 2012. *Mizhnarodna konventsiia pro pidhotovku i dyplomuvannia moriakiv ta nesennia vakhty 1978 roku (konsolidovanyi tekst z manilskymy popravkamy [International Convention on the Training and Certification of Seafarers and Watchkeeping, 1978 (consolidated text with Manila amendments*)]. Kyiv: VPK «Ekspres-Polihraf», [in Ukrainian].

Uriadovyi portal [Government portal], 2018. *Natsionalna transportna stratehiia Ukrainy na period do 2030 roku. Rozporiadzhennia Kabinetu Ministriv Ukrainy vid 30 travnia 2018 r. № 430-r. [National transport strategy of Ukraine for the period up to 2030. Order of the Cabinet of Ministers of Ukraine of May 30, 2018 № 430-r]*. [online] (Ostannie onovlennia 30 Traven 2018) Dostupno: https://www.kmu.gov.ua/npas/proshvalennya-nacionalnoyi-transportnoyi-strategiyi-ukrayini-na-period-do-2030-roku [Data zvernennia 15 Cherven 2021], [in Ukrainian].

Verkhovna rada Ukrainy. Zakonodavstvo Ukrainy [Verkhovna Rada of Ukraine. Legislation of Ukraine], 2013. *Natsionalna stratehiia rozvytku osvity v Ukraini na period do 2021 roku vid 25 chervnia 2013 roku № 344/2013 [National strategy for the development of education in Ukraine for the period up to 2021 from June 25, 2013 № 344/2013]* [online] (Ostannie onovlennia 26 Cherven 2013) Dostupno: https://zakon.rada.gov.ua/laws/show/344/2013#Text [Data zvernennia 15 Cherven 2021], [in Ukrainian].

Novykov, A. M., 1998. Professyonalnoe obrazovanye na rubezhe treteho tыsiacheletyia [Vocational education at the turn of the third millennium]. *Mahystr [Masters],* 1, s.59-68, [in Russian].

Topalov, V. P., 2004. *Uroky morskykh avarii [Lessons from maritime accidents]*. Odesa, [in Russian].

Sherman, M. I. ta Bezbakh, O. M., 2015. Struktura profesiinoi pidhotovky maibutnikh sudnovodiiv u vyshchykh morskykh navchalnykh zakladakh u konteksti problem formuvannia informatsiinoi kultury [The structure of vocational training of future navigators in higher maritime educational institutions in the context of problems of information culture formation]. *Naukovi zapysky [Scientific records]*, 141 (1), s.15-19, [in Ukrainian].

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ОРГАНІЗАЦІЙНО-ПЕДАГОГІЧНІ УМОВИ ЗДОБУТТЯ ПРОФЕСІЙНИХ КОМПЕТЕНЦІЙ МАЙБУТНІМИ СУДНОВИМИ МЕХАНІКАМИ

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Реферат:

Актуальність: необхідність розроблення та впровадження у практику організаційно-педагогічних умов здобуття первинних професійних компетенцій майбутніми судновими механіками у процесі вивчення освітньої компоненти «Морська інженерна практика» визначається вимогами Міжнародної Конвенції «Про підготовку і дипломування моряків та несення вахти 1978 року (з поправками)» (ПДНВ) та базових Модельних курсів ІМО (Course 7.02 «Chief engineer officer and second engineer officer», Course 7.03 Course 7.04 «Officer in charge of an engineering watch»

Мета: обґрунтувати організаційно-педагогічні умови здобуття первинних професійних компетенцій майбутніми судновими механіками при вивченні освітньої компоненти «Морська інженерна практика» та їх вплив на подальшу професійну діяльність у складі екіпажу морського судна.

Методи: теоретичні (логічний аналіз наукових досліджень у галузі професійної педагогіки і методики професійного навчання у вищій школі; логіко-структурний аналіз – для визначення суті й структури понять «професійна компетенція» і «професійна підготовка майбутніх суднових механіків до практичних дій на судні», обґрунтування організаційно-педагогічних умов означеної підготовки); емпіричні (вивчення та аналіз педагогічного досвіду практичної підготовки майбутніх судномеханіків); експериментальні (самооцінювання – для осмислення результатів професійної підготовки до взаємодії у складі екіпажу судна в умовах небезпечних та аварійних ситуацій).

Результати: розроблено та впроваджено в освітній процес організаційно-педагогічні умови формування професійної компетентності у майбутніх суднових механіків, що сприяє побудові у вищому морському закладі освіти ефективної індивідуальної освітньої траєкторії та забезпечує безперервність професійного розвитку майбутніх фахівців.

Висновки: доведено, що впровадження в освітній процес організаційно-педагогічних умов здобуття професійних компетенцій майбутніми судновими механіками у процесі вивчення освітньої компоненти «Морська інженерна практика», надало можливість студентам перейти до освоєння фахових дисциплін на більш високому рівні, про що свідчать дані незалежного тестування. Результативність розроблених організаційно-педагогічних умов підтверджують також результати виконання студентами контрольних робіт на міжкафедральному семінарі.

Ключові слова: *майбутні суднові механіки, первинна професійна компетенція, заклади вищої морської освіти, Морська інженерна практика, Конвенція ПДНВ.*

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RESEARCH OF THEORETICAL ASPECTS OF THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE TECHNOLOGICAL EDUCATIONAL INDUSTRY

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Abstract.

The relevance of the article is due to the need to study the theoretical foundations of digitalization of technological education, taking into account the requirements of modern digital society.

Purpose: to substantiate the features of the use of ICT in technological education in the social and digital transformation of modern society.

Methods: general logical research methods with analysis, comparison, generalization of processed sources (legal documents, scientific articles, textbooks, official Internet resources) to study the relationship between the development of information technology and their use in the study of technological disciplines.

Results: the educational legislation on the basis of which introduction of computer technologies in the course of teaching of technological disciplines is carried out is investigated; the main problems of digitalization of technological education in the conditions of formation of digital society are considered; identified key and "ICT competencies" needed to ensure this development.

Conclusions: it was found that the social and digital transformation of modern society necessitates changes in the methodology of teaching disciplines of the technological cycle; it is shown that among the innovative teaching methods the most optimal for application in the process of teaching technological disciplines can be gamification, virtual educational environment and innovative software products as a means to achieve the educational goal; It is proved that the improvement of methods of teaching disciplines of the technological cycle will help prepare students for the implementation of acquired skills and abilities in life, increase their mobility in dynamic labor markets.

Keywords: *information and communication technologies, information and communication competencies, information technologies of education, digital society, innovative teaching methods, key skills in technological education, gamification of the educational process.*

Introduction. In the process of building the world economy there is a change in technological systems. We live and work in an era of significant change. The usual, stable very quickly becomes an anachronism, leads to a significant economic and technological lag in the global race of economies and civil societies. The world has become transparent and open thanks to Internet communications. It

is difficult not to see the urgent need for qualitative change, especially in the field of education. Prior to the pandemic in 2019, the use of the latest information technologies was a sign of the work of an advanced teacher who sought to organize the quality of the educational process, its diversification. The realities of the global quarantine 2020-2021 have led to a particularly rapid restructuring of the entire educational process with an emphasis on the use of computer technology.

It was timely to conclude legislative basic documents that legally fixed the important place of computer technology in the educational process. The program "New Ukrainian School" (NUS), which has been implemented by the Ministry of Education and Science of Ukraine since 2017, turned out to be significant. The program states that the graduates of the new school should be educated Ukrainians – comprehensively developed, responsible citizens and patriots, capable of risk and innovation, able to lead the Ukrainian economy forward in the XXI century. The main goal of the NUS project is to create a school that combines comfortable learning conditions and the opportunity to gain quality knowledge. The main goal is the ability to apply the acquired knowledge in everyday life (Official site of the Ministry of Education and Science of Ukraine, 2021). This goal was proclaimed two or three decades ago, but even today the modernization of education must bring the qualitative changes needed in society.

Sources. The importance of the development of the theory and methods of application of ICT in the learning process is a topical issue in the works of many scientists, whose research concerns all components and levels of education: preschool, general secondary, vocational and higher. The question of the practical use of information technology in secondary school was raised in the 80's by R. Williams, K. McLean (Williams and McLean, 1988). The authors of "Computing in schools" described a variety of ways to combine computers with other technical teaching aids and noted their effective use in teaching any school subject.

Theoretical bases of ICT use in domestic education are devoted to the works of scientists of the Institute of Information Technologies and Teaching Aids of the National Academy of Pedagogical Sciences headed by the director of the institute V.Yu. Bykov, according to whom, the use of ICT in the educational process is an integral condition of qualitative changes that will have an impact in the near future on important sectors of the economy: production, technology, science. ICTs will have an indirect impact on the ability of today's students to master professions that do not yet exist today (Bykov, Spirin and Pinchuk, 2017, p.191-198; Bykov and Yatsyshyn, 2019; Bykov, Litvinova and Lugovyi, 2019; Bykov, Spirin and Pinchuk, 2021). Innovative tasks of the modern stage of informatization of education are covered in the works of V.G. Flint (Flint and Bulls, 2014).

In the research of scientists of Kyiv University. B. Hrynychenko are key developments in the form of practical manuals that remain relevant for many years, for example, T.I. Nosenko (2011). Researchers have studied the modern processes of formation of key and subject competencies of students by robotic means of STEM-education (Gladun, Morse and Dziuba, 2018, pp. 37-52). In the collaboration of Polish, Ukrainian and Russian scientists, a study of the formation of new educational strategies in the latest digital environment was carried out (Smirnova-Tribulska et al., 2016, pp. 6-24). Many other researchers are working on the implementation of ICT in the educational process: O. V. Belous, Yu. M. Bogachkov, O. V. Ovcharuk, P. S. Wuhan, V. O. Radkevich, N. G. Nichkalo, I. M. Dychkivska, M. O. Kizima, I. Yu. Matyushenko, I. V. Shostak, I. D. Nischak, G. G. Shvachych, B. B. Tolstoy, L. M. Petrechuk, Yu. S. Ivashchenko, O. A. Gulyaevpa, O. V. Sobolenko and others.

The purpose of the article is to substantiate the peculiarities of the use of ICT in the technological educational field in the conditions of social and digital transformation of modern society.

Methods. On the way to achieve this goal, the authors use general logical research methods with analysis, comparison, generalization of processed sources (legal documents, scientific articles, textbooks, official Internet resources) to study the relationship between the development of information technology and their use in the study of technological disciplines.

In particular, the legislative documents of Ukraine, State standards of basic and complete secondary education, materials of the World Education Forum "Education 2030", publications of foreign and domestic scientists, which addressed the use of ICT in technological education, publications on education reform, analytical materials were analyzed. Institute of Information Technologies and Teaching Aids of the National Academy of Pedagogical Sciences of Ukraine, Internet resources (national online platform for digital literacy "Action. Digital Education", "World Economic Forum", etc.). The purpose of the analysis and comparison was to generalize the content of the processed sources in order to identify

the features of the introduction of ICT and their impact on the traditional methods of teaching subjects of the technological cycle.

Results and discussion. A high-tech society determines the informatization of all branches of science and education, so a person who does not have information and communication technologies will inevitably be pushed out of its borders.

Article 12 of the Law "On Education" contains a list of key competencies that students will acquire in the learning process (Official website of the Trade Union of Education and Science of Ukraine, 2021). An important place is given to competences in the field of engineering and technology, competence of innovation and information and digital competence. It is information and digital competence involves the confident, critical application of information and communication technologies for the search, processing, creation and exchange of working information, information literacy, mastering the basics of programming.

Implementing the Law, the State Standard of Basic and Complete General Secondary Education, approved by the Resolution of the Cabinet of Ministers of Ukraine of September 30, 2020 № 898, outlines the requirements for mandatory learning outcomes in technological education. Common compulsory learning outcomes include, among many, ICT-based skills. Such skills, for example, indicate the design of personally and socially significant product. One of the guidelines for evaluating the effectiveness of such a skill is to draw up an individual plan of product manufacturing technology using, if necessary, digital devices and graphics editors (9 Feasibility study 1.1.7-5).

Next is a key skill such as manufacturing a designed product in accordance with the technological sequence, which will be assessed through another important skill – improving manufacturing technology through the use of appropriate methods, technological or technical techniques (9 Feasibility study 1.2.4-1).

The ability of effective work of students in accordance with the types of decorative and applied arts is indicated. The results of students' activity can be assessed through their participation in public events, projects on creation and popularization of works of decorative and applied arts of their community and art of European cultural heritage (9 Feasibility study 2.1.2-2) (Official site of MES of Ukraine, State standard of complete secondary education), Appendix 12, 2021).

These skills are part of the competence potential of technology education and basic knowledge, where the key competence "innovation" is defined through the ability to transform acquired knowledge of technology and equipment into process improvement, new or improved product with new qualities, awareness of the importance of innovation in sustainable processes. development of society (Official site of the Ministry of Education and Science of Ukraine, State standard of complete general secondary education, Annex 11, 2021).

The world is gradually adapting to a new way of life. ICTs, which before the pandemic were part of learning technology, have become the main way of distance learning. As a result of quarantine measures, the provision of educational institutions with computers and high-speed Internet, accessible to both teachers and students, has become a priority issue of the entire educational process.

The key question of didactics is the question of how to teach, ie how to transfer knowledge, information so that they are best mastered. The widespread use of computers in education has given rise to the term "learning information technology."

Under information technology is understood a set of methods and technical means of collecting, organizing, processing, storing, transmitting and providing information that expands people's knowledge and develops their ability to manage technical and social processes (Fig. 1).

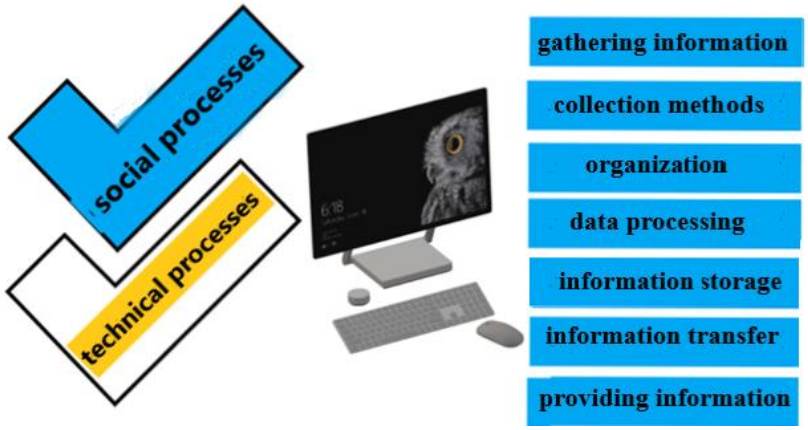

Fig. 1. The content of information technology

The use of computer and information technologies in the educational process belongs to the category of "innovation": the creation and dissemination of innovations and changes in ways of doing things and related styles of thinking (Dychkivska, 2012, p.22).

Traditional teaching methods and tools do not meet modern requirements, and this encourages the introduction of innovative teaching methods, use and adaptation of these technologies in the educational process (Shvachich, 2017, p. 5). It is important to use a sufficient number of examples to achieve the learning goal, as the acquisition of professional skills and abilities is not possible without the demonstration of visual aids and interactive tools.

The effectiveness of the educational process today directly depends on the introduction of computer technology in the practice of teaching. This question has been studied by world and domestic scientists since the 80s of the last century. The use of computers in the learning process is revealed, for example, in the works of R. Williams and K. McLean. Forty years ago, the authors predicted an "explosion" of interest in computer technology on the part of education authorities and educational institutions, predicted the need to master new teaching skills, and said that the school of the future would have to teach not only children but also adults (Williams and McLean, 1998, pp. 41-42).

Nosenko T. I. (2011, p. 32) identified the active use of ICT as a tool for presenting and acquiring knowledge by teachers and students through various activities: information-educational, educational-game, experimental-research and independent. It is a tool to support traditional teaching methods and opportunities to create a variety of methods that contribute to the personality-oriented development of students.

The research of scientists of the Institute of Information Technologies and Teaching Aids of the National Academy of Pedagogical Sciences of Ukraine on key issues of implementation of information and communication technologies in domestic education (Bykov et al., 2017, p. 191) is based on the analysis of UN international monitoring results 2017-2018. Forum). According to its results, Ukraine has unbalanced indicators and a significant increase in the gap with developed countries in the pace and speed of the domestic information society. Therefore, the authors define the informatization of education as a priority for the effective development of the information society in Ukraine and a prerequisite for increasing the pace of creation, exchange of information, knowledge and technology. The authors characterize the lack of joint efforts in the development of the country's ICT as an "internal and external digital divide" (Bykov, Spirin and Pinchuk, 2017, p. 192). The authors' opinion is based on the historic commitment made in 2015 by the Incheon Declaration "Education 2030" at the World Forum on Education, which was guaranteed by UNESCO. The declaration, in accordance with the goal of sustainable development of society, points to the importance of using information and communication technologies in strengthening educational systems, disseminating knowledge, providing access to information, quality and effective training and more efficient services (Official Website of the Verkhovna Rada of Ukraine Science and Education, 2021).

In the joint work Kyzym M. O., Matyushenko I. Yu. And Shostak I. V. (2012, p. 454-458), the prospects of development of information and communication technologies and artificial intelligence in the economies of the world and Ukraine in the perspective to the middle of the XXI century are investigated. As a result of the work, the authors emphasize that modern human life will be increasingly freed from hard work and will become a pleasure, thanks to the total use of ICT. This, without a doubt, is a positive phenomenon that contributes to the optimal direction of free time for spiritual and professional development. According to scientists, humanity will have to experience the exponential growth of new technologies, which is possible through the merger and synergistic enrichment of various sciences: biology, computer science, physics and more. At the same time, this should improve the quality of the goods created. A person in a high-tech society must be prepared for these changes. Education and its ICT-based component should play a key role in this training.

Gurevich RS (2014, p.11-15) pays considerable attention to the integration of disciplines and notes the expansion of the use of computer technology and related IT as a means of intensifying the study of all general education subjects. The author lists all types of educational activities in which the computer is used: lecturing, including electronic lectures with the dissemination of theoretical material through computer networks (which is actively used in the process of distance learning during the quarantine period 2020-21); conducting practical and seminar classes in which multimedia computer technologies become a means of developing skills; control and testing of knowledge and skills in various categories from current education to final knowledge; conducting audio and video conferences, exhibitions, as a

presentation of the results of achievements in the process of studying the subject using on-line and off-line technologies; as an independent work (with partial or full use of CT).

Modern education is not possible without a competency-based approach, when the formation of students' ability to act must precede the process of accumulation of any knowledge. Such an activity approach in education can be implemented through the formation of students' key competencies as the most visible feature of European education.

In the first quarter of the XXI century we have objective conditions and trends in the development of digital civilization (Fig. 2). Ukraine, like the whole world, is on the path of formation and development of the information society.

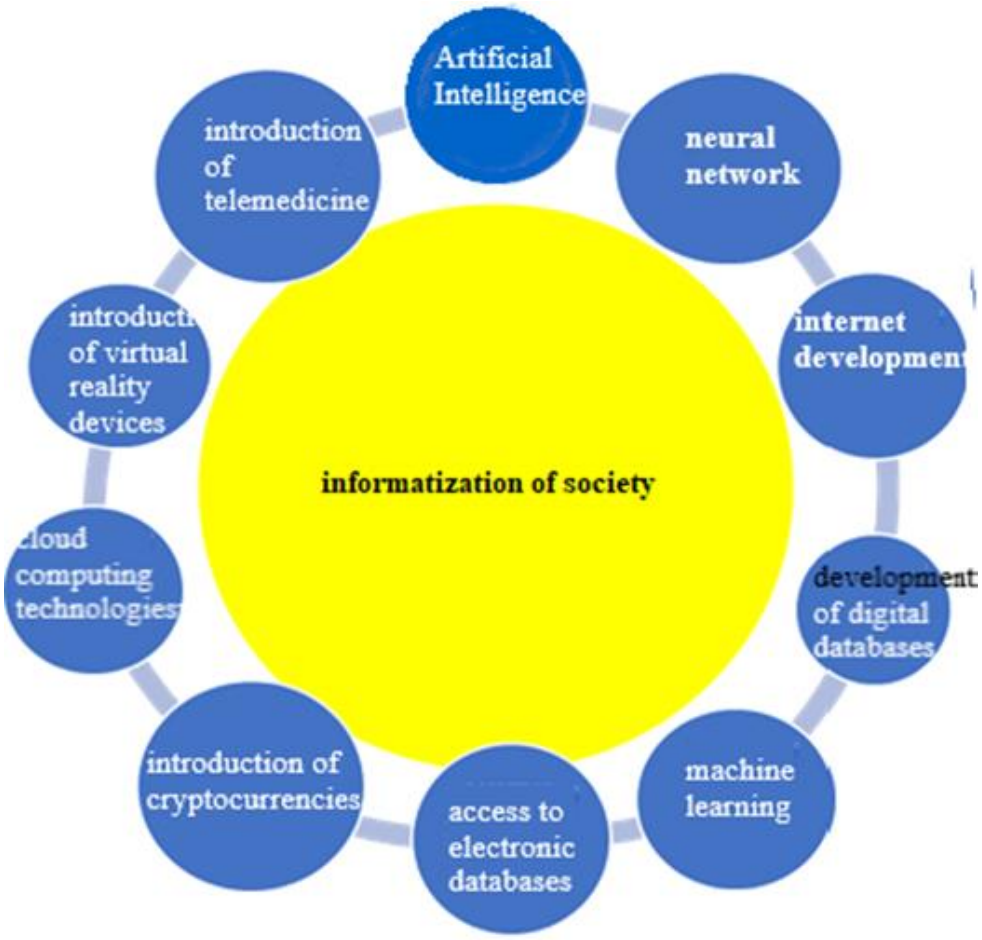

Fig. 2. Objective reasons for the development of informatization of education in the XXI century

How fast we will go depends on the digitalization of education, which is a definite requirement of the time. V. Bykov (2020, p.28) defines the informatization of education as a structure of interacting processes: legal, organizational, social, economic, educational, methodological, scientific and technical, production and management. The result of their interaction is to meet the needs associated with the introduction of information and communication technologies in the educational process, as well as their scientific and methodological support.

According to the report of the World Economic Forum (World Economic Forum, 2019), the level of ICT competencies and digital competencies of the population remains low in Ukraine. Compared to world indicators, our position in the category "Digital skills among the active population", which includes, for example, computer skills, digital reading, is quite low (56th place among 141 countries). This indicator has deteriorated during the study period (previous position 55) and is mostly a reflection of archaic approaches to learning (World Economic Forum, The Global Competitiveness Report 2019, p 572, index 6.05, 2021).

Most educators, as subjects of the pedagogical process and pedagogical activity, are not interested in the use of progressive ICT. This problem needs to be addressed, as assessing society's digital capacity is key to the competitiveness of a country's economy. Necessary cooperation and response of education to the urgent needs of the digital society, development of practical and effective examples of experience in ICT, its evaluation and promotion.

In Ukraine, from 2020, in partnership with the Ministry of Digital Transformation, a free National Online Platform on Digital Literacy “Action. Digital

education ". On this platform there is a section "Digital skills for teachers". Its purpose is to teach teachers to use online tools in order to increase the efficiency of the educational process, to make it exciting (Official Website of the Ministry of Education and Science of Ukraine, 2021). Within the framework of this educational platform, the review educational series "Quarantine: online services for teachers" (Official portal. Action. Digital education, 2021) is additionally posted.

It may be interesting to use the skills of computer games and the composition of their construction in the teaching of technological disciplines. In our society, the use of computer games is regarded as antisocial behavior and a waste of time. But we must take into account the fact – a generation has grown up for which this leisure industry has become the subject and tool of work. Today, the world offers methods for developing game disciplines or game design, focused on developing programs for the study of academic disciplines.

The methodology is based on a visual generalized block diagram, where the teaching of academic disciplines takes place according to the scheme and methods of game design. For example, there is a symbiosis of games as cyberculture, project activities and marketing Lugova TA (2021, p. 235) suggests the use of cyber environment technologies in the learning scheme. For example, the researcher cites the already known basis of the discipline in the form of a technological map of the methodological complex of the distance learning platform Moodle, with which today a large number of educational institutions are actively cooperating. The base of organizational and normative actions, from which the list of categories of occupations is formed, is perceived by students as a sequence of actions for controlling tasks (Luhova, 2021, p. 240). The author considers the sequence and structure of methodical development of game design-oriented disciplines. This method formalizes the discipline in accordance with the restrictions set by the basic regulations (description of the educational program, educational and qualification characteristics of graduates, employers' requests for general professional competencies; formalization of organizational requirements of the subject; gamification of the discipline model and its transformation into a playing field).

As a result, through the development of game rules and their metaphorization, the plot and scenario of the game discipline are developed (Luhova, 2021, p. 248). More than three million scientific researches in the world are devoted to graphics and game design in education, from which about 500 – domestic (Luhova, 2021, p.238, table 1).

Gamification – the use of games in non-game processes is popularly explained to participants in training on the above-mentioned national online platform for digital literacy "Action. Digital education ". Series of materials. hosted on a platform created with the support of ASBIS-Ukraine, which specializes in the distribution of products and solutions in the field of information and communication technologies from global suppliers, including Apple, Logitech, Prestigio Solutions, Microsoft (Official Portal. Action. Digital Power, 2021) .

The experimental base within the project of digital transformation "Digital State" was Liko-School and its teachers (Official portal. Action. Digital education, 2021). In the section "Interactive learning: tools and technologies for interesting lessons" teacher M. Lyutynska notes that gamification can affect the content of education and its quality. This is especially important in the world-wide distance learning environment during long-term quarantine. Teachers-experts of Liko-School widely use Classcraft, PowerPoint, Quick Start, LinguaLeo, LEGO Education WeDo, Simple city programs in the learning process.

Working with programs, using augmented reality are of interest and help to involve students in working on multidisciplinary projects by gamifying the educational process. This is an example of the work of talented and multifunctional specialists. As a result, critical thinking is formed, collaboration skills, communication skills are formed and creativity is developed.

Student Minecraft-distance project work, built in such a system of education, allows you to combine the features of different school subjects and acquire skills in different areas of activity. As a result, a "symbiosis" of creativity and technical knowledge is provided, and in combination with the use of modern technology, a real STEM-revolutionary trend in the educational and professional spheres is realized (Official Portal. Action. Digital Education, 2021).

Simultaneously with this innovation, the introduction of the necessary health education measures and the formation of a set of knowledge of students on the safe use of ICT tools remains relevant.

Conclusions. The analysis of the processed sources, comparison of results of various scientific researches, generalization of the received information has allowed to come to a conclusion that information and communication technologies are necessary addition (and sometimes and replacement) of

traditional educational methods. In Ukraine, the process of studying and implementing the best world experience in the use of ICT in the educational process, building areas and ways to improve the content and forms of learning. Pilot tests of pedagogical innovations are being carried out, methods of teaching disciplines of the technological cycle and teacher training are being developed and improved. According to the "Law on Education", as a result of mastering the programs of the technological field of education, students have to master various competencies in the field of engineering and technology. It was found that, according to the Incheon Declaration "Education 2030", strengthening the education system is not possible without providing access to information using ICT (informatization of society should be based on the informatization of education). The New Ukrainian School program aims to provide students with the knowledge, skills and abilities that they will be able to use in real life, and among the important key skills is the mastery of ICT. Therefore, the informatization of education should be considered as an important component of the development of the information society of Ukraine and an effective way to prepare students for future professions of high-tech society.

List of references

Биков, В. Ю., Спірін, О.М. та Пінчук, О.П., 2017. Проблеми та завдання сучасного етапу інформатизації освіти. В: Кремень, В. Г., ред. *Наукове забезпечення розвитку освіти в Україні: актуальні проблеми теорії і практики (до 25-річчя НАПН України).* Київ: Національна академія педагогічних наук України, с. 191-198.

Биков, В. Ю., Спірін, О.М. та Пінчук, О.П., 2020. Сучасні завдання цифрової трансформації освіти. *Вісник Кафедри ЮНЕСКО «Неперервна професійна освіта XXI століття»,* 1, с.27-36. DOI: https://doi.org/10.35387/ucj [Дата звернення 05 Травень 2021].

Вильямс, Р. та Маклин, К., 1985. *Компьютеры в школе.* М.: Прогресс.

Гуревич, Р.С., 2014. Сучасні комп'ютерні технології як засіб інтердисциплінарного навчання. В: *Актуальні проблеми навчання, виховання та розвитку учнів загальноосвітньої школи.* Київ-Вінниця: Інститут педагогічної освіти і освіти дорослих НАПН України, Вінницький державний педагогічний університет ім. М. Коцюбинського, 40, с.11-15.

Міністерство освіти і науки України, 2020. Державний стандарт повної загальної середньої освіти, затверджений Постановою КМУ від 30.09.2020 року № 898, [online] (Останнє оновлення 02 Жовтень 2020) Доступно:https://mon.gov.ua/ua/news/oprilyudneno-derzhavnij-standart-bazovoyi-serednoyi-osviti [Дата звернення 31 Березень 2021].

Дичківська, І. М., 2012. Інноваційні педагогічні технології. Київ: Академвидав.

Дія. Цифрова держава, 2021a. [online] Доступно: https://plan2.diia.gov.ua/ [Дата звернення 30 Березень 2021].

Дія. Цифрова держава, 2021b. [online] Доступно: https://osvita.diia.gov.ua/courses/online-services-for-teachers [Дата звернення 30 Березень 2021].

Дія. Цифрова освіта, 2021. [online] Доступно: https://osvita.diia.gov.ua/ [Дата звернення 30 Березень 2021].

Закон України «Про освіту» від 05.09.2017 № 2145-VIII, 2017. Київ: Відомості Верховної Ради України.

Інчхонська декларація: концепція розвитку освіти до 2030 року, 2015. [online] Доступно: https://pon.org.ua/international/4171-inchxonska-deklaraciya-koncepciya-rozvitku-osviti.html [Дата звернення 01 Березень 2021].

Інтерактивне навчання: інструменти та технології для цікавих уроків. Оглядовий освітній серіал про інновації в навчанні, 2021. [online] Доступно: https://osvita.diia.gov.ua/courses/interactive-learning [Дата звернення 05 Березень 2021].

Коронавірус та освіта: аналіз проблем і наслідків пандемії, 2020. [online] Доступно: https://cedos.org.ua/uk/articles/koronavirus-ta-osvita-analiz-problem-i-naslidkiv-pandemii [Дата звернення 25 Листопад 2020].

Кизим, М. О., Матюшенко, І. Ю. та Шостак, І. В., 2012. *Перспективи розвитку інформаційно-комунікаційних технологій і штучного інтелекту в економіках країн світу та України*. Харків: «Інжек».

Лугова, Т.А., 2021. Геймдизайн орієнтований підхід до розробки навчальних дисциплін закладів вищої освіти. *Інформаційні технології і засоби навчання*. [online] Доступно: http://journal.iitta.gov.ua/index.php/itlt/article/view/3265/1770 [Дата звернення 03 Березень 2021].

Нова українська школа, 2018. [online] Доступно: https://mon.gov.ua/ua/tag/nova-ukrainska-shkola [Дата звернення 25 Лютий 2021].

Носенко, Т.І. *Інформаційні технології навчання*, 2011. Київ: ун-т ім. Бориса Грінченка.

Цифрові навички для вчителів, 2021. [online] Доступно: https://osvita.diia.gov.ua/courses/serial-iz-tsyfrovoi-hramotnosti-dlia-vchyteliv [Дата звернення 12 Лютий 2021].

Швачич, Г.Г., Толстой, В.В., Петречук, Л.М., Іващенко, Ю.С., Гуляєва, О.А. та Соболенко, О.В., 2017. *Сучасні інформаційно-комунікаційні технології*. Дніпро: НМетАУ.

World Economic Forum. The Global Competitiveness Report, 2019. [online] Доступно: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf [Дата звернення 05 Лютий 2021].

Translated & Transliterated

Bykov, V.Y., Spirin, O.M. ta Pinchuk, O.P., 2017. Problemy rozvytku suchasnoho etapu informatyzatsiyi osvitnosti [Problems and tasks of the modern stage of informatization of education]. V: Naukove zabezpechennia rozvytku osvity v Ukrayini: aktualni problemy teori i praktyky (do 25-richchia NAPN Ukrayiny) [Scientific support of education development in Ukraine: current issues of theory and practice (to the 25th anniversary of the NAPS of Ukraine)], s. 191–198, [in Ukrainian].

Bykov, V.Y., Spirin, O.M. ta Pinchuk, O. P., 2020. Suchasni zavdannya tsyfrovoyi transformatsiyi osvity [Modern tasks of digital transformation of education]. DOI: https://doi.org/10.35387/ucj.1(1), s. 27-36, [in Ukrainian].

Vilyams, R. ta Maklin, K., 1985. Kompyuteryi v shkole [Computing in schools]. M.: Progress, [in Ukrainian].

Hurevych, R.S., 2014. Cuchasni kompiuterni tekhnolohii yak zasib interdystsyplinarnoho navchannia [Modern computer technologies as a means of interdisciplinary learning].. V: Aktualni problemy navchannia, vykhovannia ta rozvytku uchniv zahalnoosvitnoi shkoly [Actual problems of training, education and development of students of secondary school]. Kyiv-Vinnytsia: Instytut pedahohichnoi osvity i osvity doroslykh NAPN Ukrainy, Vinnytskyi derzhavnyi pedahohichnyi universytet im. M. Kotsiubynskoho, 40, s.11-15, [in Ukrainian].

Ministerstvo osvity i nauky Ukrainy [State standard of complete general secondary education], 2020. Derzhavnyi standart povnoi zahalnoi serednoi osvity, zatverdzhenyi Postanovoiu KMU vid 30.09.2020 roku № 898 [Resolution of the Cabinet of Ministers № 898 of September 30, 2020], [online] (Ostannie onovlennia 02 Zhovten 2020) Dostupno:https://mon.gov.ua/ua/news/oprilyudneno-derzhavnij-standart-bazovoyi-serednoyi-osviti [Data zvernennia 31 Berezen 2021], [in Ukrainian].

Dychkivska, I., 2012. Innovatsiyni pedahohichni tekhnolohiyi: pidruchnyk [Innovative pedagogical technologies].Kyiv: Akademvidav, [in Ukrainian].

Diya. Tsyfrova derzhava [Action. Digital state, 2021. [online] Dostupno: https://plan2.diia.gov.ua/ [Data zvernennia 30 Berezen 2021], [in Ukrainian].

Diya. Tsyfrova osvita [Action. Digital education], 2021a [online] Dostupno: https://osvita.diia.gov.ua/courses/online-services-for-teachers [Data zvernennia 30 Berezen 2021], [in Ukrainian].

Diya. Tsyfrova osvita [Action. Digital education], 2021b.[online] Dostupno: https://osvita.diia.gov.ua/ [Data zvernennia 30 Berezen 2021], [in Ukrainian].

Zakon Ukrayiny «Pro osvitu» vid 05.09. 2017 № 2145-VIII, 2017. [Law of Ukraine "On Education"Law of Ukraine of 05.09.2017 no. 2145-VIII]. Kiev: Vidomosti Verkhovnoyi Rady Ukrayiny [Vedomosti of the Supreme Council of Ukraine], 38-39, s. 380, [in Ukrainian].

Inchkhonska deklaratsiia: kontseptsiia rozvytku osvity do 2030 roku [Incheon Declaration: the concept of education development until 2030], 2015. [online] Dostupno: https://pon.org.ua/international/4171-inchxonska-deklaraciya-koncepciya-rozvitku-osviti.html [Data zvernennia 01 Berezen 2021].

Interaktyvne navchannya: instrumenty ta tekhnolohiyi dlya tsikavykh urokiv. Ohlyadovyy osvitniy serial pro innovatsiyi v navchanni [Interactive learning: tools and technologies for interesting lessons. Review educational series about innovations in learning]. [online] Dostupno: https://osvita.diia.gov.ua/courses/interactive-learning [Data zvernennia 05 Berezen 2021], [in Ukrainian].

Koronavirus ta osvita: analiz problem i naslidkiv pandemiyi [Coronavirus and education: analysis of the problems and consequences of a pandemic]. [online] Dostupno: https://cedos.org.ua/uk/articles/koronavirus-ta-osvita-analiz-problem-i-naslidkiv-pandemii [Data zvernennia 25 Lystopad 2020], [in Ukrainian].

Kizim, M., Matyushenko, U. and Shostak, I., 2012. Perspektyvy rozvytku informatsiyno-komunikatsiynykh tekhnolohiy i shtuchnoho intelektu v ekonomikakh krayin svitu ta Ukrayiny [Prospects for the development of information and communication technologies and artificial intelligence in the economies of the world and Ukraine]. Kharkiv: Inzhek, [in Ukrainian].

Lugova, T., 2021. Heymdyzayn oriyentovanyy pidkhid do rozrobky navchal′nykh dystsyplin zakladiv vyshchoyi osvity [Game design-oriented approach to the development of academic disciplines of higher education institutions]. Informatsiyni tekhnolohiyi i zasoby navchannya [Information technologies and teaching aids.], 16. [online] Dostupno: http:// journal.iitta.gov.ua/index.php/itlt/article/view/3265/1770 [Data zvernennia 05 Berezen′ 2021], [in Ukrainian].

Nova ukrainska shkola [New Ukrainian school], 2018. [online] Dostupno: https://mon.gov.ua/ua/tag/nova-ukrainska-shkola [Data zvernennia 25 Liutyi 2021], [in Ukrainian].

Nosenko, T.I. Informatsiini tekhnolohii navchannia [Information technologies of training: the initial manual], 2011. Kyiv: un-t im. Borysa Hrinchenka, [in Ukrainian].

Tsyfrovi navychky dlya vchyteliv [Digital skills for teachers]. [online] Dostupno: https://osvita.diia.gov.ua/courses/serial-iz-tsyfrovoi-hramotnosti-dlia-vchyteliv [Data zvernennia 12 Lyutyy 2021], [in Ukrainian].

Shvachych, H.H., Tolstoy, V.V., Petrechuk, L.M., Ivashchenko, Y.S., Hulyayeva, O.A. and Sobolenko, O.V., 2017. Suchasni informatsiyno-komunikatsiyni tekhnolohiyi [Modern information and communication technologies]. Dnipro, 230 p., [in Ukrainian].

World Economic Forum. The Global Competitiveness Report 2019. [online] Dostupno:http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf [Data zvernennia 05 Lyutyy 2021], [in English].

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ДОСЛІДЖЕННЯ ТЕОРЕТИЧНИХ АСПЕКТІВ ВИКОРИСТАННЯ ІНФОРМАЦІЙНО-КОМУНІКАЦІЙНИХ ТЕХНОЛОГІЙ У ТЕХНОЛОГІЧНІЙ ОСВІТНІЙ ГАЛУЗІ

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Реферат:

Актуальність статті зумовлена необхідністю вивчення теоретичних засад цифровізації технологічної освіти з урахуванням вимог сучасного цифрового суспільства.

Мета: обґрунтувати особливості застосування ІКТ в технологічній освітній галузі в умовах соціальної і цифрової трансформації сучасного суспільства.

Методи: загально-логічні методи дослідження з проведенням аналізу, порівняння, узагальнення опрацьованих джерел (нормативно-правових документів, наукових статей, навчальних посібників, офіційних інтернет-ресурсів) з метою вивчення зв'язку між розвитком інформаційних технологій та їхнім використанням у процесі вивчення технологічних дисциплін.

Результати: досліджено освітнє законодавство, на основі якого здійснюється впровадження комп'ютерних технологій у процесі викладання технологічних дисциплін; розглянуто основні проблеми цифровізації технологічної освіти в умовах становлення цифрового суспільства; визначено ключові та «ІКТ-компетентності», необхідні для забезпечення даного розвитку.

Висновки: з'ясовано, що соціальна й цифрова трансформація сучасного суспільства зумовлюють необхідність внесення змін до методики викладання навчальних дисциплін технологічного циклу; показано, що серед інноваційних методів навчання найбільш оптимальними для застосування у процесі викладання технологічних дисциплін можуть бути геймифікація, віртуальне освітнє середовище та інноваційні програмні продукти як засоби досягнення поставленої освітньої мети; доведено, що вдосконалення методики викладання дисциплін технологічного циклу сприятиме підготовці здобувачів освіти до реалізації набутих умінь і навичок у житті, підвищенню їх мобільності на динамічних ринках праці.

Ключові слова: *інформаційно-комунікаційні технології, інформаційно-комунікаційні компетентності, інформаційні технології навчання, цифрове суспільство, інноваційні методи навчання, ключові уміння в технологічній освітній галузі, геймифікація освітнього процесу.*

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METHODOLOGY FOR ASSESSING THE QUALITY OF TRAINING SPECIALISTS IN INSTITUTIONS OF PROFESSIONAL PRE-HIGHER EDUCATION

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Abstract.

Relevance. Adequate functioning of any pedagogical system, including the system of training specialists in the college, is impossible without feedback, establishing the effectiveness of the educational process, evaluating the results of competency-based learning. At the same time, pedagogical science has not yet developed detailed theories and valid methods that would allow to reliably assess the level of students' mastery of professional skills, abilities, other complex competencies, defined by educational standards and learning outcomes. In view of this, there is a need to develop a reliable, systematic and accessible, in practice, methodology for assessing the quality of training the specialists in colleges.

The purpose – to substantiate the methodology (for assessing the quality of training specialists in colleges) on the basis of the analysis of essential characteristics of pedagogical estimation, features of the competence approach in professional pre-higher education.

*Methods***:** theoretical (theoretical analysis of scientific sources, study of the requirements of professional and educational standards, educational programs, analysis of programs of academic disciplines – to clarify the state of the research problem and determine areas of scientific research; comparison – to study scientific approaches to solving the problem; analysis and synthesis – to develop a method for assessing competencies (educational outcomes), empirical (observation, testing – to determine the validity of tools, making adjustments to the assessment methodology; didactic experiment – to determine the importance of the topic and highlight the dominant learning elements).

Results. The essence of pedagogical assessment as a process of establishing the level of student achievement in mastering the content of the discipline (topic, module, etc.) in accordance with the standardized requirements is specified. There is a lack of sustainable approaches to the definition of *"pedagogical control", "pedagogical (educational) monitoring", "pedagogical diagnostics", "pedagogical evaluation", "assessment", "verification", "accounting", "pedagogical measurement"* and the others that are closely related to the above. It is proved that the assessment of the quality of professional training of specialists in the college should be carried out by comparing the students' demonstrated knowledge, skills, abilities and other competencies (current state of the object) with the reference (expected, standardized) results declared in the standards of professional pre-higher education (educational programs). The methodology for assessing the quality of professional training of specialists as a algorithm for the consistent implementation of nine stages – from the establishment of reference learning outcomes to the production of conclusions about the level of quality of competency-based learning of students. A method for assessing the formation of skills (other competencies)

of students based on the description of the structural components of professional action (subject (object); process (procedure); means; conditions; result (product)) is proposed.

Conclusions: The methodology for assessing the quality of professional training of specialists in colleges makes it possible to determine the real level of compliance of students' preparedness with the established regulatory requirements at all stages of mastering the educational program by applicants. The proposed method of assessing competencies (educational outcomes) on the basis of didactic differentiation of professional activities provides an opportunity for interested subjects of the educational process, no longer intuitively, but purposefully, on a scientific basis, to develop diagnostic tools, conduct diagnostic procedures and reliable results of testing students' competencies.

Keywords: *professional pre-higher education, quality of professional training, pedagogical assessment, method of competence assessment, reference learning outcomes.*

Introduction. Rapid changes in the techno sphere, the dynamic introduction of innovative technologies in all sectors of the economy necessitate a significant reform of the established system of training technicians, technologists, managers in institutions of professional pre-higher education. Modern normative educational documents indicate the need to significantly change the conceptual principles of organization of the educational process, where the personality of the student, his interests, needs, inclinations and preferences should be in the center. From a simple consumer of scientific and technical-technological information, a performer of exclusively reproductive tasks of mastering future professional activity, the applicant has the main advantage to give away independent educational work, purposeful development of creative abilities and inclinations. That is why, modern professional education, in particular professional pre-higher education, is dynamically moving to the models of competence-oriented learning, which allow to train versatile, highly qualified, competitive professionals, capable of professional self-improvement, self-realization. At the same time, the control of students' competence achievements and objective assessment of the quality of their professional training become especially important.

Instead, the system of monitoring the learning outcomes of vocational education applicants, established for years, is based on outdated principles and methods, can not provide an authentic, reliable assessment of the quality of their training. The reasons for this negative phenomenon are due to the complexity of methodological (understanding of the essence of the quality of training specialists by the pedagogical community), didactic (what principles, rules, conditions should be followed when assessing the quality of training technicians, technologists, managers, etc.), methodical (what methods, technologies, tools should be used to measure the level of quality of professional training of applicants for professional pre-higher education) problems.

It should be noted that pedagogical science has not yet developed detailed theories and valid methods that allow to reliably assess the level of students' mastery of professional skills, abilities, other complex competencies, defined by educational standards and learning outcomes. In view of this, there is a need to develop a reliable, systematic and accessible, in practice, methodology for assessing the quality of training specialists in colleges.

Sources. It is worth noting that there are a number of regulations that contain references to models, procedures, and order for ensuring the quality of training specialists in colleges. In particular, the Law of Ukraine "On Education" specifically states that the quality of education is the compliance of learning outcomes with the requirements established by law, the relevant standard of education and / or the contract for the provision of educational services. Along with this concept, the quality of educational activities is defined as "the level of organization, provision and implementation of the educational process that ensures the acquisition of quality education and meets the requirements established by law and / or the contract for educational services." It is assumed that the assessment of learning outcomes (external, independent) should be carried out on the principles of validity (validity and suitability of assessment methods and technologies for specific purposes), openness and transparency, objectivity, reliability, accessibility, responsibility.

In turn, the Law of Ukraine "On Professional Pre-Higher Education" declares that the main criterion for the effectiveness of this educational unit is its quality – compliance of the conditions of educational activity and learning outcomes with the requirements of the legislation and the standards of professional pre-higher education. Section IV emphasizes the need to ensure the relevance, reliability, transparency and objectivity of the evaluation of the quality of educational activities.

The Concept of Quality Assurance in Higher Education, prepared as a result of the Tempus project

"TRUST" "National system of quality assurance and mutual trust in the system of higher education of Ukraine", states that the development of quality concepts and national concept of quality assurance, value systems in accordance with the best European standards, increasing student motivation and the participation of all important stakeholders in quality assurance procedures are long-term goals that we must achieve in the future. At the same time, criticizing the "distorted and outdated system of values […] aimed at controlling, pressuring and punishing those who do not meet the established criteria", specific indicators and methods of assessing the quality of higher education are not mentioned here.

The scientific and theoretical principles of solving the problem of assessing the quality of training specialists in institutions of professional pre-higher education are the works of domestic scientists:

− methodological principles of ensuring and monitoring the quality of education were studied by V. Kremen (2014), V. Luhovyi (2010; 2016), N. Nychkalo (2002), J. Talanova (2010; 2016), O. Sliusarenko (2010; 2016), A. Stavytsky (2016), V. Stavytskyi (2016), E. Khrykov (2018); G. Tsekhmistrova (2005);

− O. Lokshyna (2004), O. Liashenko (2007; 2012), S. Babinets (2019), V. Bobrytska (2015), S. Kretovych (2012), I. Bulakh (2006; 2020) substantiated the theoretical bases of assessing the quality of vocational education;

− methodological bases of monitoring and evaluation of the quality of training specialists were covered by P. Luzan (2012), L. Iaroshchuk (2010), A. Kalenskyi (2012), N. Vanina (2012), I. Mosya (2012), T. Pashchenko (2012), V. Cheshuk (2010), L. Yurchenko (20120) and others.

The results of modern research of such Doctors of Sciences as (Yu. Dutchak (2021), G. Krasylnykova (2015; 2016), I. Hyrylovska (2021) are of particular importance for solving the problem of assessing the quality of professional training of specialists in colleges. It is also worth noting the monograph "Methods of test control of student achievement" (Ilin, Luzan and Rudyk, 2010), where the authors, using the theory of formation of mental actions and concepts, propose to assess students' skills by means of test methods.

Despite the number of scientific investigations of problems in monitoring the educational process and diagnosing student achievement, we must state that the development and substantiation of detailed methodology for assessing the quality of training specialists in institutions of professional pre-higher education, although has been intensified recently in connection with the National Qualifications Agency, National Agency for Quality Assurance in Higher Education, but has not yet received adequate coverage.

The article aims to substantiate the methodology (for assessing the quality of training specialists in colleges) on the basis of the analysis of essential characteristics of pedagogical estimation, features of the competence approach in professional pre-higher education.

Methods: *theoretical* (theoretical analysis of scientific sources, study of the requirements of professional and educational standards, educational programs, analysis of programs of academic disciplines – to clarify the state of the research problem and determine areas of scientific research; comparison – to study scientific approaches to solving the problem; analysis and synthesis – to develop a method for assessing competencies (educational outcomes), *empirical* (observation, testing – to determine the validity of tools, making adjustments to the assessment methodology; didactic experiment – to determine the importance of the topic and highlight the dominant learning elements).

Results and discussion. The problem of the quality of professional pre-higher education is decisive in the search for effective forms and technologies of teaching, methods of selection and structuring of competency-oriented educational content, conditions for creating information and educational environment of the college by both scientists and teachers-practitioners. Instead, scientists do not demonstrate a unity of opinion on the meaning of "quality of education", so today there are several hundred definitions of this phenomenon in widespread use. Most often, scientists understand the quality of education (Yaroshchuk, 2010, p. 12) as:

− compliance of learning outcomes with the requirements of the educational standard;

− efficiency of the educational institution;

− the result of the educational process;

− the effectiveness of the education system of a certain level or industry;

− priority of state educational policy

It is worth supporting the opinion of R. Kubanov (2014) that the concept of "quality of training" arose as a result of narrowing the concept of "quality of education (professional pre-higher, higher)". Without dwelling on a detailed analysis of this term, we point out that in our study, the quality of training specialists means the compliance of learning outcomes with the requirements of the standards of professional pre-higher education and educational and professional programs.

Naturally, the adequate functioning of any pedagogical system, including the system of training specialists in college, is impossible without feedback, establishing the effectiveness of the educational process, the results of competency-based learning. Therefore, it is extremely important to objectively, reliably and systematically assess the quality of training of future technicians, technologists, managers, foremen, etc. The question rightly arises: how, by what methods, tools, by what criteria and indicators should the quality of professional training of such specialists be assessed? First of all, let us turn to the essential characteristics of pedagogical assessment and related didactic categories.

We will note that in the works known to us there are no sustainable approaches yet to definition of concepts *"pedagogical control", "pedagogical (educational) monitoring", "pedagogical diagnostics", "pedagogical assessment", "assessment", "check", "accounting", "pedagogical measurement"* and the others that are closely related to the above. Very often they are mixed, used as synonyms, and, sometimes, in different meanings. This is one of the factors that in the training of specialists in colleges control does not fully perform its basic functions, weakly contributes to the productive independent work of students. In addition, not all pedagogical and scientific-pedagogical workers have sufficient psychological and pedagogical bases for the organization of systematic, comprehensive, developmental, objective and impartial control of students' competence achievements.

Most often, *pedagogical (educational) monitoring* (Latin *monitor* - one that reminds, supervises, stores) means a specially created system of collecting, processing, storing and disseminating information about the state of education, forecasting on the basis of objective data on the dynamics and main trends of its development and the development of scientifically sound recommendations for making management decisions to improve efficiency of functioning of a certain educational branch. E. Khrykov (2018) defines, rightly, pedagogical monitoring as a system of measures for collecting and analyzing information in order to study and assess the quality of training and decision-making on the development of the educational process based on the analysis of typical features and trends.

A component of educational monitoring is *pedagogical diagnostics* – division of pedagogy that studies the principles and methods of recognition and establishment of features that characterize the normal or deviant course of the educational process. The essence of pedagogical diagnostics should be understood as a holistic set of structural (purpose, pedagogical diagnosis, methods, objects, subjects of diagnostics) and functional (tasks, types, functions, principles) components that are closely interrelated. Thus, pedagogical diagnostics includes control, verification, accounting, evaluation, analysis of statistical data, detection of dynamics of changes, clarification, adjustment of curricula, forecasting.

Control of learning outcomes plays an extremely important role in the system of competence-oriented training of future specialists. This is primarily due to its objectives (Fitsula, 2006): determining the quality of students' assimilation of educational material, the degree of conformity of skills and abilities to the goals and objectives of the subject; identifying students' readiness to perceive, understand and assimilate new knowledge; obtaining information about the nature of independent work in the learning process; determining the effectiveness of organizational forms, methods and tools of teaching; finding out the degree of correctness, volume, depth of students' acquisition of knowledge, skills and abilities.

We are impressed by the definition of *pedagogical control*, which M. Fitsula (2006) substantiates. This is a didactic tool for learning management, aimed at ensuring the effectiveness of the formation of knowledge, skills, abilities, their use in practice, stimulating students' learning activities, the formation of their desire for self-education.

The result of the control should be an assessment that involves comparing what students have learned with what they had to learn in accordance with the requirements of the educational-professional program (educational standard). Thus, *pedagogical assessment* is the process of establishing the level of student achievement in mastering the content of the discipline (topic, module, etc.) in accordance with the requirements of current educational and professional programs. At the same time, *pedagogical measurement* is used as a specific procedure of quantitative comparison of the studied feature with a certain standard, taken as a unit of measurement. We add that the set of measurement methods for evaluating the obtained information is called *scaling*.

In our opinion, pedagogical assessment as a category of didactics is correlated with similar related concepts, as shown in Fig. 1.

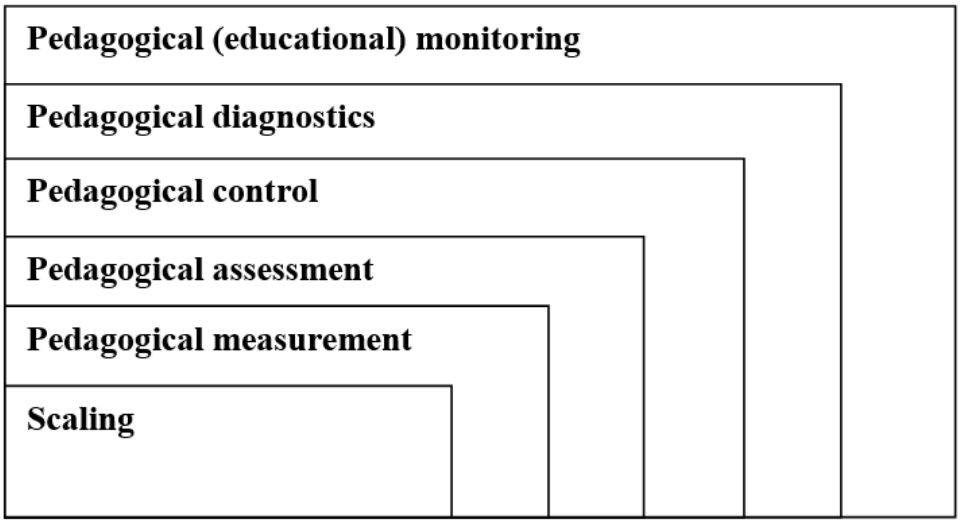

Fig. 1. The scheme of subordination of concepts related to the term "pedagogical assessment"

Thus, the main criterion for the effectiveness of professional training in colleges is *the quality of education* – compliance of educational conditions and learning outcomes to legal requirements and educational standards, professional and / or international standards (if any), and the needs of interested parties and society. Let us remind ourselves that in terms of the new competency methodology, educational outcomes are a set of knowledge, skills, abilities and other competencies declared in educational standards, which must be mastered by a person in the process of studying according to the particular educational program, and which can be identified, quantified and measured.

Thus, *the reference learning outcomes* are the program learning outcomes declared in a particular educational program. In turn, the set of knowledge, skills, abilities and other competencies acquired by a person in the process of learning, according to a certain educational program, are real, educational results. Thus, the basis of the assessment procedure is to compare the students' demonstrated knowledge, skills, abilities and other competencies (current state of the object) with the reference (expected, normalized) results and establish an objective level of quality of training specialists in college (Fig. 2).

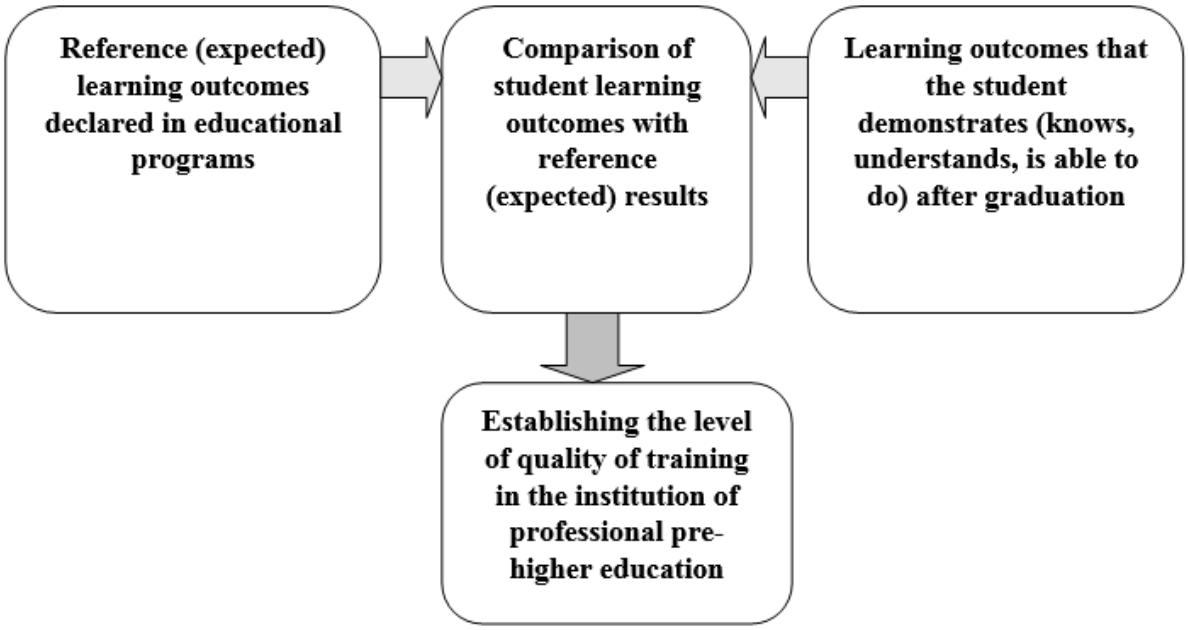

Fig.2. Model of the procedure for assessing the quality of training specialists in colleges

In the scientific literature, scientists associate the essence of the process of pedagogical evaluation mainly with the systematic collection and interpretation of data, producing judgments (based on them) to

organize certain actions to improve the system. At the same time, informational (collection of information about a student, student group, specialty, etc.), interpretive (establishing the degree of formation of knowledge, skills, individual personality traits, the level of student cohesion, the state of engineering education, etc.) and corrective (making certain changes in the educational process, optimization of methods, forms, technologies of teaching and education, providing methodological assistance to the subjects of pedagogical interaction, etc.) functions of assessing the learning outcomes of students (Liashenko et al., 2012).

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It is worth agreeing with the recommendations of scientists that pedagogical assessment can be used for various purposes: to determine the academic achievements of students; to establish the effectiveness of methods and forms of training; to determine the effectiveness of activities of the educational institution; to determine the effectiveness of a substantiated way of learning, didactic technology, etc. In our case, we will focus on evaluating "for the purpose of development, improvement and refinement (for improvement)" of the results of students' competency achievements – their professional training.

In view of the above, we believe that assessing the quality of professional training in colleges should be considered as a logical structure that hierarchically combines four stages with the appropriate stages (Fig. 3).

Stage 1. *Analysis of the State Classification of Professions DK 003: 2010, qualification characteristics of the specialist, professiogram, professional standard.* At this stage, the provisions of the classifier of professions, professional standard, qualification characteristics, etc. regarding the functions, labor actions, general and special competencies of the graduate, requirements for his professional qualities and the others are analyzed.

Stage 2. *Establishment of reference (program) learning outcomes as regulatory requirements for training specialists.* Using the content of professional, educational standards (if any), educational and professional training program, we write out the educational results that must be demonstrated by applicants for a particular specialty at the stage of state certification. For example, Table 1 shows the general program learning outcomes that graduates must demonstrate at the end of mastering the educational and professional training program for technicians in the operation and repair of equipment (specialty 133 "Industrial Engineering").

In particular, such learning outcomes in the profile of the educational-professional training program 19: from *«1. Ability to communicate in the state language on professional issues"* to "*19. Skills to work on drilling machines: to perform drilling, deployment, countersinking on single and multi-spindle machines".*

Stage 3. Determining the list of knowledge, skills that should be assessed at a certain stage of diagnosis of the quality of training specialists in college. At this stage, the reference learning outcomes are specified depending on the objectives of assessing the quality of training specialists. For example, after mastering the discipline "Fundamentals of Economic Theory", the future technician should be able to: evaluate indicators of efficiency of functioning of the technological equipment and systems and develop measures to optimize their work: to analyze technical and economic indicators of design solutions in the field of tool production; to analyze economic phenomena, processes and action of economic laws in society. We will remind: that learning outcomes are a kind of indicator of a student's gradually acquired competencies and are formulated by pedagogical staff at the level of the educational program and a separate discipline / module. In the mentioned educational-professional program the results which the student should show on completion of mastering of bases of the economic theory are formulated in such edition: *"Ability, working under the guidance of leading experts, to carry out tool cost calculations, the price and economic efficiency of its implementation, the complexity of the planned production volume and the amount of necessary equipment and salary".* This skill is reference in assessing the quality of student mastery of the basics of economic theory. We have to demonstrate a similar logic when assessing the quality of training of technicians for the operation and repair of equipment when mastering a particular module or topic of the course.

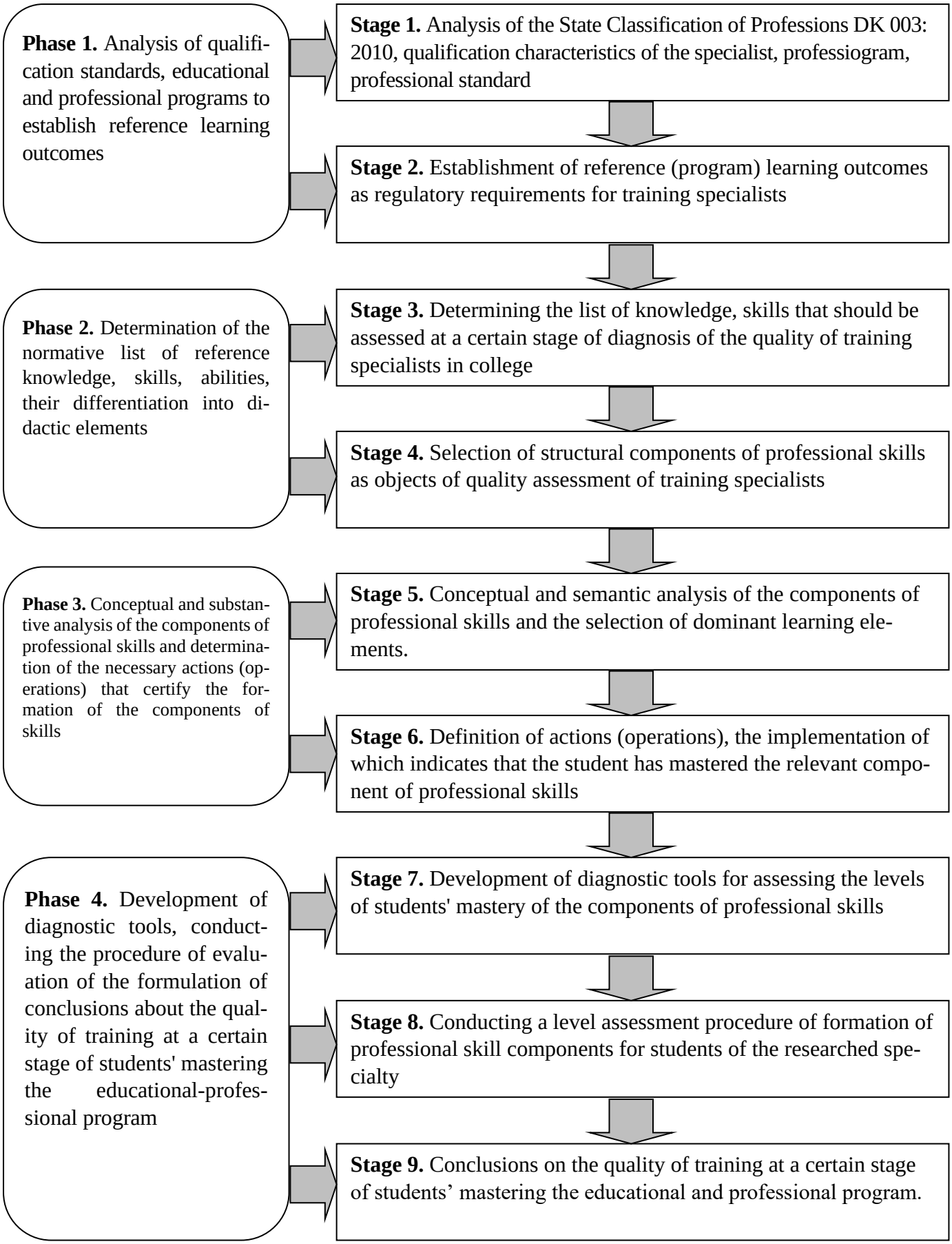

Fig. 3. The structure of the methodology for assessing the quality of training specialists in colleges

Table 1

General program learning results in the specialty 133 "Industrial Engineering"
(Qualification - 3117 technicians for operation and repair of equipment)

№	Learning outcomes
1	Ability to communicate in the state language on professional issues
2	Ability to perform technical drawings using a single system of technological (SSTD) and design documentation (SSDD) with the use of modern computer tools: detailing and assembly units
3	Ability, working under the guidance of leading specialists, to perform calculations of the cost of the tool, the price and cost-effectiveness of its implementation, the complexity of the planned production volume and the amount of necessary equipment and salary
…	……
16	Ability to work on lathes. Be able to perform: machining of workpieces on universal and specialized lathes, external and internal threads on lathes
17	Ability to work on milling machines: perform milling of workpieces of medium complexity for machine parts and tools on different types of milling machines
18	Ability to work on grinding and sharpening machines: grinding parts on different types of grinding machines, sharpening cutters and drills
19	Ability to work on drilling machines: perform drilling, deployment, countersinking on single and multi-spindle machines

Stage 4. Selection of structural components of professional skills as objects of quality assessment of training specialists. The reference educational results (skills, abilities) defined for estimation are directed on performance of certain professional actions. By means of didactic differentiation, we distinguish the structural components of professional action in the following order: *subject (object); process (procedure); means; conditions; result (product)* (Ilin, Luzan and Rudyk, 2010). The description of the structural components of each skill should be as detailed as possible so that there is no discrepancy in the definition of: the subject of action, its components and features; the content and sequence of operations that are part of the action; devices and tools that must be used during the action; the conditions under which the action must be performed; the results to be evaluated and achieved as a result of the action. We use the following rule: we can tell about the formation of a certain professional skill when the student can with regard to: *the subject (object of action)* – recognize (choose) the desired object from the available or name its specific features; *process (procedure)* – name the operations provided by the procedure and indicate their sequence or perform practical operations on the provided object; *means* – name necessary means, devices, tools, the equipment, select necessary means, show ability to use the necessary devices or tools; *conditions* – name the conditions necessary for performance of action, define sufficiency of available conditions for performance of operations; *result (product)* – on the basis of available signs, make a conclusion about the conformity of the result obtained as a result of professional action, established by the requirements.

For example, we give a method of selecting the structural components of the professional skills of future technicians for the operation and repair of equipment *"The ability to perform internal threading on lathes"*. We characterize the main structural components of the relevant professional action – to perform internal threading on lathes. Thus, we will carry out the analysis in the context of structure of professional action in the following order: *concepts* (categories; terms; definitions; designations); *phenomena* (properties; phenomena; facts; signs; description of objects, mechanisms; systematics); *relations* (ratio; theorems; laws; concepts; rules; hypotheses; physical and mathematical models; dependencies – analytical, graphical, logical; structures, etc.).

Thus, the subject (object) of the specified professional action is: threaded connection; carving; thread classification; threaded surface elements; ways to control the thread; thread systems; designation of a carving surface; internal thread cutting; tap; the device for fastening of a tap.

Process: the procedure of performing internal threading on a lathe consists of the following operations (Baz and Zakharenko, 2020):

1. Determination of the diameter of the hole by the formula:

PHD = TD – TP, mm,

where PHD – diameter of the hole for cutting, mm;

TD – thread diameter, mm;

TP – thread pitch, mm.

2. Drilling of the hole (socket) and chamfering;

3. Installation of workpiece in the lathe chuck

4. Preparation of the surface for threading;

5. Insertion of the tap into the hole of the intake part and fixing the tail part in the appropriate device;

6. Installation of a conic shaft of a mandrel in the hole of the quill of the rear headstock;

7. Cutting the thread with a tap to a certain length;

8. Thread control.

Means: formula for determining the diameter of the hole *(PHD = TD – TP, mm)*; lathe **1K62;** drill; through-turning lathe; tap; the device for fastening of a tap; threaded caliber plug.

Conditions: 1. Drilling a hole in a steel billet is carried out with cooling; 2. With increasing and decreasing hardness (strength) of the processed material, the tabular values of speed must be reduced or increased, but not more than 30%; 3. When the depth of the hole is more than three of its diameters, the feed is reduced by 10-30%, and the cutting speed – by 20-50%; 4. It is expedient to perform a single manufacture of chamfer parts with a combination of transverse and longitudinal feeds of the cutter; 5. The workpiece is installed and fixed in the chuck so that the axis of the hole of the part coincides with the axis of rotation of the spindle. 6. To cut the first turns of the thread, you need to gently and evenly press on the tap, rotating the handwheel of the rear headstock. When the tap crashes into the hole for 1-1.5 turns, its further movement will be self-tightening due to the rotation of the part. 7. Before you cut the thread in the blind holes, you must remove the chips. 8. To prevent thread breakage, it is necessary to choose the correct diameter of the hole, use taps with sharp cutting edges and clean them more often from chips.

Result: cut thread of a certain length with allowable parameters (thread pitch; average diameter, half of the profile angle, as well as inner and outer thread diameters) without defects (tap failure in the hole; torn thread; incomplete thread; thread failure).

Stage 5. Conceptual and semantic analysis of the components of professional skills and the selection of dominant learning elements. Naturally, it is extremely difficult to assess the student's formation of all educational elements of one or another component of professional action. To determine the basic, dominant learning elements, we must first analyze these elements from the following positions: with what probability can we say that, demonstrating knowledge of a particular element, the student knows other, slightly simpler components? It will be better if such conclusions are made by an expert group.

Obviously, the elements of knowledge are not always combined with each other: sometimes it is impossible to say that if a student has mastered some concepts, he has mastered others on this topic. However, very often, the training material is connected in the following order: in order to master a certain topic, a certain issue or term, it is necessary to know the previous material. In other cases, the above dependence is less severe: the student can thoroughly master a certain issue of the topic, and not to own the material at all on other issues of the same topic.

For example, mastering the topic "Machines for sowing" (discipline "Agricultural Machinery"), future agricultural specialists must master the material on the following issues: *1. Purpose and classification of seeders; 2. General structure and technological process of grain seeder operation; 3. Beet seeders, their structure, operation, regulation; 4. The structure and operation of the corn drill.* It is quite obvious that when a future agricultural engineer demonstrates excellent knowledge of the structure, technological process, operations of grain drill adjustment, the student must have knowledge of the purpose and classification of drills in general. But he may not have knowledge of the structure, operation and regulation of beet or corn drills. To control the system of such knowledge, scientists recommend using the probabilistic method (Polonskyi, 2018). Here we are talking about the fact that you can test a system of knowledge with the help of questions, the answers to which are most likely to indicate that students have mastered the entire system of this knowledge. Such questions are selected according to their diagnostic weight, which is experimentally defined as the fraction of the number of students who correctly answered all questions on a given topic (section, module, etc.), the number of students who correctly answered a question or group of questions. It is not difficult to notice that, in fact, the diagnostic weight of the question is actually always less than 1. To implement the probabilistic method of knowledge assessment, the following steps are proposed:

1. To define the purpose of control.

2. To make the list of tasks, questions, the answers to which testify about mastering the whole amount of knowledge, skills, abilities.

3 To determine empirically the frequency of correct answers to each question or a group of questions.

4. To calculate the diagnostic weight of a question or a group of questions.

5. To control the system of knowledge on issues with the greatest diagnostic weight.

We consider it necessary to present the data of the didactic experiment, which illustrates the application of the probabilistic method of knowledge control (Table 2). The experiment involved 100 students – future mechanical technicians of agricultural production (specialty 208 "Agricultural engineering"). Assimilation of educational material from the course "Agricultural Machinery" (topic "General purpose plows") was checked. According to the structure of the content of the study of agricultural machinery, respondents were asked 9 questions – from the purpose of this agricultural machine to technological adjustment and regulation. Evaluation was performed by means of testing.

Table 2

Determining the diagnostic importance of the topic "General purpose plows" (discipline "Agricultural Machinery", specialty 208 "Agricultural engineering")

№	Questions on the topic "Machines for the main tillage "	The number of students who answered the questions correctly	Diagnostic significance of the issue
1	The purpose of the plow	98	0,20
2	Agrotechnical requirements for plowing	96	0,21
3	Classification of plows	88	0,23
4	Technical characteristics of the general purpose plow	78	0,26
5	The general structure of a ploughshare	80	0,25
6	Structure and purpose of plow working bodies	47	0,42
7	Plow working process	50	0,40
8	Operations performed by the components of the plow	48	0,41
9	Technological adjustment and regulation of a ploughshare	30	0,66
10	All questions of the topic	***20***	**-**

Analysis of student test results shows that each of the 9 questions of the topic has a different weight. In particular, out of the total number of respondents, 20 people answered all 9 questions correctly. Almost all students answered the first and second questions of the topic correctly (Purpose of the plow – 98 people; Agrotechnical requirements for plowing – 96 people). In addition, 88 respondents performed control tasks on the classification of plows correctly, respectively 78 – the technical characteristics of the general purpose plow, 80 – the general structure of the ploughshare. On the other hand, this does not mean that with the help of these five questions it is possible to check the mastering of the material of the whole topic: the correct answers to the ninth, sixth, eighth, seventh questions of the topic were demonstrated by a much smaller share of students.

Obviously, if a student answers these "difficult" questions, then the highest probability of testing knowledge on the whole topic is achieved. We mean a hypothetical statement: if a student demonstrates the correct answers to the ninth, sixth, eighth, seventh question of the topic, then with a high probability (more than 90%) we can say that he has mastered the whole content of the topic. We support the reasoning with the following example: if a student solves the problem of determining the volume of a triangular pyramid correctly, he can determine the area of the triangle *(to calculate the volume of the pyramid you need to determine the area of the base – the triangle – and multiply it by a third of the height).*

Let's try to apply a similar logic of selection of dominant training elements for the professional action *"Performance of internal threads on lathes"*. Note that we have identified 10 didactic elements that define the subject (object) of the specified professional action. Among such educational elements as "threaded connection", "thread", "thread classification", "threaded surface elements", in our opinion,

the last one is the most important: if the student has mastered the parameters of the threaded surface

(P is the thread pitch; H is the V-form height; t is the thread height; d – the major diameter; d_{av} – is the pitch diameter d_1 is the minor diameter; $\mathcal{E}$ – the angle of the thread profile), then with high probability we can say that our imaginary student knows: the thread is "… a helical groove of a certain profile, which is cut on a cylindrical or conical surface"; the thread can be left-right (in the direction of the helix), single-start – multi-start (by the number of ridges), outer – inner (by location), triangular, trapezoidal, rectangular, stubborn, round (by profile shape), etc.

Among the other educational elements that determine the subject (object) of the studied professional action, the dominant ones are: devices for fixing the tap (Fig. 4); designation of a carving surface. Note that the training element *"device for fixing the tap"* contains the following information: *"The device for fixing the tap consists of a mandrel with a key and a sleeve with a groove, which includes the key. The tap is fixed with two bolts in the square hole of the sleeve. The mandrel has a conical shank that is inserted into the hole of the quill of the rear headstock".* It is not difficult to notice that during mastering of this didactic element, our imaginary student should know (understand, figuratively imagine) the tool of cutting of an internal carving – a tap. At the same time, imagining this way of threading, knowing its functions and design features, the learner may not know the design of the device for fixing the tap.

A similar analysis must be performed in determining the dominant didactic elements for the other components of professional action.

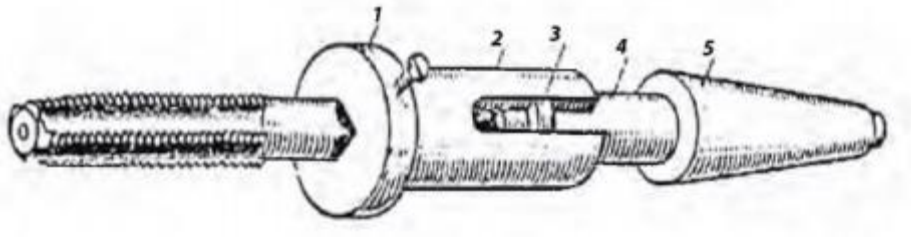

Fig. 4. Device for fixing the tap on the lathe:
1 – sleeve with a square hole; 2 – bushing; 3 – key; 4 – mandrel; 5 – adapter sleeve

Stage 6. Definition of actions (operations), the implementation of which indicates that the student has mastered the relevant component of professional skills. To assess the formation of certain professional skills, it is necessary to prescribe operations, the implementation of which should certify the student's mastery of all components of professional action. For example, to assess the formation of the ability to perform calculations, the student has to:

− characterize the object of calculation (the value that is determined during the calculation);

− name the conditions under which the calculation is made;

− give definitions of concepts used during the calculation;

− name the values (parameters) used in the calculation;

− determine the formulas used in the calculation;

− make a calculation.

The separation of operations to assess more complex professional skills is also carried out by means of analysis of structural components of action. For example, to assess the ability of students to set sowing machines for grain drills to the seeding rate (discipline "Agricultural Machinery") we should make sure that they are able to:

− determine the parameters, the change of which affects the seeding rate;

− determine the nomogram length of the coil and the speed of rotation of the coil drive shaft;

− name and show the structural components of the coil sowing machine;

− show the sequence of transmission from the axis of the wheels to the shaft of the actuator (drive) of the sowing machines on the gearbox;

− name the parameters that are regulated during the establishment of the seeding rate;

− characterize the changes that occur in the seeding machine during the regulation of the seeding rate;

− characterize the changes that occur in the gearbox during the adjustment of the seeding rate;

− name the content and procedure for performing operations to verify the established seeding rate;

− calculate the sowing rate set for the drills according to the values of the number of seeds sown during the test;

− control the performance of the drill in accordance with agrotechnical requirements.

Stage 7. Development of diagnostic tools for assessing the levels of students' mastery of the com-

ponents of professional skills. This stage aims to develop control tasks, tests, expert letters, other means of assessing student achievement according to established criteria *(1. Characteristics of student response; 2. Quality of knowledge; 3. Degree of skills; 4. Level of mastery of cognitive operations; 5. Experience of creative activity).* Methodological aspects of developing diagnostic tools for assessing the levels of students' acquisition of knowledge, skills, abilities and other competencies can be a problem of independent research.

Stage 8. Conducting a level assessment procedure of formation of professional skill components for students of the researched specialty.

When assessing student achievement, it is necessary to follow certain rules, which are based on the provisions of modern theory of control of learning outcomes. We are talking, in particular, about the observance of the following principles:

− *a positive approach in assessing student learning outcomes.* Valuation as a result of assessment should focus on the level of achievement and progress of the student, not to emphasize his failures: only such an approach provides a real, stimulating impact on the development of educational and cognitive activities of the student, his attitude to learning;

− *individual approach when assessing the results of students' academic achievements* − providing such didactic conditions under which psychological stress, students' anxiety for the objectivity of their knowledge assessment are removed, an atmosphere of friendliness is created, and fair assessment stimulates each student to systematic educational and cognitive activities, elimination of identified shortcomings.

Stage 9. Conclusions on the quality of training at a certain stage of students' mastering the educational and professional program.

Based on the results of the examination of students' competence achievements, a conclusion is made on the compliance of the preparedness of students (graduates) with the regulatory requirements. Naturally, the objectivity of the conclusions depends on the provision of certain didactic conditions for assessing the quality of professional training, which include:

− purposeful application of valid, reliable, accurate methods of objective assessment of student achievement;

− the use of several tools for assessing (scientists call from 2 to 4) the quality of training specialists (testing, observation, project, practical task, discussion, presentation, interviews, role-playing games, etc.), each of which is the most adequate to assess the relevant object being diagnosed (component of professional competence – professional knowledge, skills, attitudes, personal qualities, etc.);

– tools for assessing the quality of training should be relevant to the objects of assessment and the characteristics of students;

– production of conclusions about the quality of training is carried out on the basis of the triangulation method of improving reliability – taking into account information from various sources, including self-assessment of students and peer assessment of classmates;

– acquaintance of students, in advance, with the criteria for assessing the quality of their training in institutions of engineering and technical education.

It is important to emphasize that the effectiveness of assessment of knowledge, skills and abilities, the reliability and the validity of testing methods depend almost entirely on the individuality of the teacher, his experience, professional competence, psychological and pedagogical erudition, pedagogical techniques and tact. Therefore, research of possibilities of the scientific approach to pedagogical estimation, especially concerning its objectification is of great interest. Factors such as the choice of the most effective forms and methods of testing and assessing knowledge, skills, efficiency of tactics of knowledge diagnosis, the choice of formal evaluation criteria and statistical analysis of control results, conclusions and decision-making are important. Each of the factors is an independent problem that requires in-depth analysis and study.

The proposed methodology for assessing the quality of professional training of engineering and technical specialties was tested during 2010-2020 on the basis of the Tavriya State Agrotechnological University named after Dmytro Motorny and the National University of Life and Environmental Sciences of Ukraine. With the help of the methodology, tests and control tasks were developed to assess students' academic achievements both in the course of mastering the educational and professional program and for the final certification, which had a positive impact on the quality of professional training of future agricultural engineers.

Conclusions. The substantiated methodology for assessing the quality of professional training of specialists in colleges makes it possible to determine the real level of compliance of students' preparedness with the established regulatory requirements at all stages of mastering the educational program by applicants. The proposed method of assessing competencies (educational outcomes) on the basis of didactic differentiation

of professional activities provides an opportunity for the interested subjects of the educational process, not intuitively, but purposefully, on a scientific basis to develop diagnostic tools, conduct diagnostic procedures and obtain objective, reliable results of testing students' competencies. Prospects for further scientific research are associated with the development of a methodological system for evaluating the results of competency-based training of future specialists in agricultural specialties..

List of references

Базь, О.С. та Захаренко, Г.С., 2020. *Токарна справа. Частина 1: навчальний посібник*. Чернівці: Букрек.

Бобрицька, В.І., 2015. Моніторинг якості освіти як чинник формування ефективної державної кадрової політики України з підготовки працівників для системи вищої освіти. *Теорія і практика навчання і виховання*, 26, с. 41-47.

Булах, І.Є. та Мруга, М.Р., 2006. *Створюємо якісний тест: навч. посіб*. Київ: Майстер-клас.

Булах, І.Є., Чешук, В.Є. та Юрченко, Л.С., 2013. Методика співставлення процесних та результативних показників якості діяльності ВНЗ. В: *Перспективні напрями світової науки: збірник статей учасників першої міжнародної (двадцять першої всеукраїнської) науково-практичної конференції Інноваційний потенціал світової науки – XXI сторіччя. Том 1. Науки гуманітарного циклу. Запоріжжя: Видавництво ПГА. С. 33-35.*

Гириловська, І.В., 2021. *Теоретичні і методичні основи моніторингу якості професійної підготовки майбутніх кваліфікованих робітників.* Доктор наук. Національний авіаційний університет, МОН України, Київ.

Дутчак, Ю.В., 2021. *Система забезпечення якості професійної підготовки майбутніх магістрів середньої освіти з фізичної культури.* Доктор наук. Національний педагогічний університет імені М.П. Драгоманова, Київ.

Ільїн, В.В., Лузан, П.Г. та Рудик, Я.М., 2010. *Методика тестового контролю успішності навчання студентів: монографія*. Київ: Видавництво НУБіП України.

Каленський, А.А., Лузан, П.Г., Ваніна, Н.В. та Пащенко, Т.М., 2018. *Стандартизація професійної освіти: теорія і практика*: монографія. Житомир: Полісся.

Красильникова, Г.В., 2015. *Моніторинг якості професійної підготовки інженерів швейної галузі у вищому навчальному закладі: теоретичні та методичні засади: монографія*. Хмельницький: ХНУ.

Красильникова, Г.В., 2016. *Теоретичні та методичні засади моніторингу якості професійної підготовки інженерів швейної галузі.* Доктор наук.. Ін-т пед. освіти і освіти дорослих. Київ.

Кремень, В.Г., 2015. Проблеми якості української освіти в контексті сучасних цивілізаційних змін. *Український педагогічний журнал*, 1, с.8-15.

Кретович, С.С., 2012. *Наукові засади моніторингу розвитку ВНЗ І–ІІ рівнів акредитації*: Кандидат наук. Університет менеджменту освіти НАПН України.

Кубанов, Р., 2014. Якість вищої освіти: порівняльний аналіз поглядів зарубіжних і вітчизняних науковців. *Порівняльно-педагогічні студії,* 2-3(20-21), с. 27-32.

Локшина, О.І. ред., 2004. Моніторинг якості освіти: становлення та розвиток в Україні. Рекомендації з освітньої політики. Київ: К.І.С.

Луговий, В. та Таланова, Ж., ред., 2016. *Гуманізація вищої освіти як засіб забезпечення її якості в Україні: методичні рекомендації*. Київ: ІВО НАПН України.

Луговий, В.І., Слюсаренко, О.М. та Таланова, Ж.В., 2010. Рамка кваліфікацій та система гарантування якості національної вищої освіти: труднощі реалізації. *Вісник Київського національного університету ім. Т. Шевченка. Тематичний вип. «Вища освіта України у контексті інтеграції до європейського освітнього простору»*, дод. 4, Т. V (19), с. 257-266.

Ляшенко, О.І., 2007. Організаційно-методичні засади моніторингу якості освіти. *Педагогіка і психологія*, 2 (55), с. 38-40.

Ляшенко, О.І., Лукіна, Т.О., Булах, І.Є. та Мруга, М.Р., 2012. *Методика і технології оцінювання діяльності загальноосвітнього навчального закладу: посібник*. Київ: Педагогічна думка.

Освіта UA, 2019. Бабінець, С., 2019. *Моніторинг якості освіти: педагогічний аналіз*. [online] (Останнє оновлення 2 Серпень 2019) Доступно: <https://osvita.ua/school/method/353/> [Дата звернення 8 Липень 2021].

Полонский, В.М., 2018. Оценка достижений школьников: методическое пособие. Москва: Вентана-Граф.

Стандарти професійної освіти: сучасні підходи. В: Ничкало, Н.Г. ред., *Державні стандарти професійної освіти: Теорія і методика*. Хмельницький : ТУП, с. 14-33.

Фіцула, М.М., 2006. *Педагогіка вищої школи: навчальний посібник*. Київ: Академвидав.

Цехмістрова, Г., 2005. Моніторинг якості професійної туристської освіти. *Вища школа,* 1, с. 66-72.

Ярощук, Л. Г., 2010. Основи педагогічних вимірювань та моніторингу якості освіти : навчальний посібник. Київ: Видавничий Дім Слово.

Translated & Transliterated

Baz, O.S. ta Zakharenko, H.S., 2020. *Tokarna sprava. Chastyna 1: navchalnyi posibnyk [Turning business. Part 1: textbook]*. Chernivtsi: Bukrek, [in Ukrainian].

Bobrytska, V.I., 2015. Monitorynh yakosti osvity yak chynnyk formuvannia efektyvnoi derzhavnoi kadrovoi polityky Ukrainy z pidhotovky pratsivnykiv dlia systemy vyshchoi osvity [Monitoring the quality of education as a factor in the formation of an effective state personnel policy of Ukraine for training employees for the higher education system]. *Teoriia i praktyka navchannia i vykhovannia [Theory and practice of teaching and education]*., 26, s. 41-47, [in Ukrainian].

Bulakh, I.Ie. ta Mruha, M.R., 2006. *Stvoriuiemo yakisnyi test: navch. posib.* Kyiv: Maister-klas, [in Ukrainian].

Bulakh, I.Ie., Cheshuk, V.Ie. ta Yurchenko, L.S., 2013. Metodyka spivstavlennia protsesnykh ta rezultatyvnykh pokaznykiv yakosti diialnosti VNZ [Methods of comparing process and performance indicators of the quality of university activities.]. V: *Perspektyvni napriamy svitovoi nauky: zbirnyk statei uchasnykiv pershoi mizhnarodnoi (dvadtsiat pershoi vseukrainskoi) naukovo-praktychnoi konferentsii Innovatsiinyi potentsial svitovoi nauky – XXI storichchia. Tom 1. Nauky humanitarnoho tsyklu [*In: Promising directions of world science: a collection of articles by participants of the first international (twenty-first all-Ukrainian) scientific-practical conference Innovative potential of world science - XXI century*]*. Zaporizhzhia: Vydavnytstvo PHA. S. 33-35, [in Ukrainian].

Hyrylovska, I.V., 2021. *Teoretychni i metodychni osnovy monitorynhu yakosti profesiinoi pidhotovky maibutnikh kvalifikovanykh robitnykiv [Theoretical and methodological bases of monitoring the quality of professional training of future skilled workers]*. Doktor nauk. Natsionalnyi aviatsiinyi universytet [Doctor Dissertation. National Aviation University, Ministry of Education and Science of Ukraine], MON Ukrainy, Kyiv, [in Ukrainian].

Luhovyi, V. ta Talanova, Zh., red., 2016. *Humanizatsiia vyshchoi osvity yak zasib zabezpechennia yii yakosti v Ukraini: metodychni rekomendatsii Humanization of higher education as a means of ensuring its quality in Ukraine: guidelines]*. Kyiv: IVO NAPN Ukrainy, [in Ukrainian].

Dutchak, Yu.V., 2021. *Systema zabezpechennia yakosti profesiinoi pidhotovky maibutnikh mahistriv serednoi osvity z fizychnoi kultury [The system of quality assurance of professional training of future masters of secondary education in physical culture]*. Doktor nauk. Natsionalnyi pedahohichnyi universytet imeni M.P. Drahomanova [Doctor Dissertation. National Pedagogical University named after M.P. Drahomanov], Kyiv, [in Ukrainian].

Ilin, V.V., Luzan, P.H. ta Rudyk, Ya.M., 2010. *Metodyka testovoho kontroliu uspishnosti navchannia studentiv: monohrafiia [Methods of test control of student learning success: monograph]*. Kyiv: Vydavnytstvo NUBiP Ukrainy.

Kalenskyi, A.A., Luzan, P.H., Vanina, N.V. ta Pashchenko, T.M., 2018. *Standartyzatsiia profesiinoi osvity: teoriia i praktyka: monohrafiia [Standardization of vocational education: theory and practice: monograph]*. Zhytomyr: Polissia, [in Ukrainian].

Krasylnykova, H.V., 2015. *Monitorynh yakosti profesiinoi pidhotovky inzheneriv shveinoi haluzi u vyshchomu navchalnomu zakladi: teoretychni ta metodychni zasady: monohrafiia [Monitoring the quality of vocational training of engineers in the garment industry in higher education: theoretical and methodological principles: a monograph]*. Khmelnytskyi: KhNU, [in Ukrainian].

Krasylnykova, H.V., 2016. *Teoretychni ta metodychni zasady monitorynhu yakosti profesiinoi pidhotovky inzheneriv shveinoi haluzi [Theoretical and methodological principles of monitoring the quality of professional training of engineers in the garment industry]*. Doktor nauk. In-t ped. osvity i osvity doroslykh *[Doctor Dissertation. Institute of Pedagogical Education and Adult Education]*. Kyiv, [in Ukrainian].

Kremen, V.H., 2015. Problemy yakosti ukrainskoi osvity v konteksti suchasnykh tsyvilizatsiinykh zmin *[Problems of quality of Ukrainian education in the context of modern civilization changes]*. *Ukrainskyi pedahohichnyi zhurnal [Ukrainian Pedagogical Journal]*, 1, s.8-15, [in Ukrainian].

Kretovych, S.S., 2012. *Naukovi zasady monitorynhu rozvytku VNZ I–II rivniv akredytatsii [Scientific principles of monitoring the development of universities of I-II levels of accreditation]*. Kandydat nauk. Universytet menedzhmentu osvity NAPN Ukrainy *[PhD dissertation. University of Education Management of the National Academy of Pedagogical Sciences of Ukraine]*, [in Ukrainian].

Kubanov, R., 2014. Yakist vyshchoi osvity: porivnialnyi analiz pohliadiv zarubizhnykh i vitchyznianykh naukovtsiv *[The quality of higher education: a comparative analysis of the views of foreign and domestic scientists]*. *Porivnialno-pedahohichni studii [Comparative and pedagogical studies]*, 2-3(20-21), s. 27-32, [in Ukrainian].

Luhovyi, V.I., Sliusarenko, O.M. ta Talanova, Zh.V., 2010. Ramka kvalifikatsii ta systema harantuvannia yakosti natsionalnoi vyshchoi osvity: trudnoshchi realizatsii [Qualifications framework and quality assurance system of national higher education: implementation difficulties]. *Visnyk Kyivskoho natsionalnoho universytetu im. T. Shevchenka. Tematychnyi vyp. «Vyshcha osvita Ukrainy u konteksti intehratsii do yevropeiskoho osvitnoho prostoru» [Bulletin of Kyiv National University named after T. Shevchenko. Thematic issue. "Higher education in Ukraine in the context of integration into the European educational space"]*, dod. 4, T. V (19), s. 257-266, [in Ukrainian].

Liashenko, O.I., 2007. Orhanizatsiino-metodychni zasady monitorynhu yakosti osvity [Organizational and methodological principles of monitoring the quality of education]. *Pedahohika i psykholohiia [Pedagogy and Psychology]*, 2 (55), s. 38-40, [in Ukrainian].

Liashenko, O.I., Lukina, T.O., Bulakh, I.Ie. ta Mruha, M.R., 2012. *Metodyka i tekhnolohii otsiniuvannia diialnosti zahalnoosvitnoho navchalnoho zakladu: posibnyk [Methods and technologies for evaluating the activities of a secondary school: a guide]*. Kyiv: Pedahohichna dumka [Kyiv: Pedagogical thought], [in Ukrainian].

Lokshyna, O.I. red., 2004. *Monitorynh yakosti osvity: stanovlennia ta rozvytok v Ukraini. Rekomendatsii z osvitnoi polityky [Monitoring the quality of education: formation and development in Ukraine. Recommendations on educational policy]*. Kyiv: K.I.S, [in Ukrainian].

Standarty profesiinoi osvity: suchasni pidkhody. V: Nychkalo, N.H. red., *Derzhavni standarty profesiinoi osvity: teoriia i metodyka [State standards of vocational education: Theory and methods]*. Khmelnytskyi : TUP, s. 14-33, [in Ukrainian].

Osvita UA, 2019. Babinets, S., 2019. *Monitorynh yakosti osvity: pedahohichnyi analiz [Monitoring the quality of education: pedagogical analysis.]*. [online] (Ostannie onovlennia 2 Serpen 2019) Dostupno: <https://osvita.ua/school/method/353/> [Data zvernennia 8 Lypen 2021], [in Ukrainian].

Polonskiy, V.M., 2018. Otsenka dostizheniy shkolnikov: metodicheskoe posobie *[Assessment of schoolchildren's achievements: manual]*. Moskva: Ventana-Graf, [in Russian].

Fitsula, M.M., 2006. *Pedahohika vyshchoi shkoly: navchalnyi posibnyk [Higher school pedagogy: textbook]*. Kyiv: Akademvydav, [in Ukrainian].

Tsekhmistrova, H., 2005. Monitorynh yakosti profesiinoi turystskoi osvity [Monitoring the quality of professional tourism education]. *Vyshcha shkola [Higher school]*,1, s. 66-72, [in Ukrainian].

Yaroshchuk, L. H., 2010. *Osnovy pedahohichnykh vymiriuvan ta monitorynhu yakosti osvity: navchalnyi posibnyk [Fundamentals of pedagogical measurements and monitoring of education quality: textbook]*. Kyiv: Vydavnychyi Dim Slovo [Kyiv: Slovo Publishing House], [in Ukrainian].

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МЕТОДИКА ОЦІНЮВАННЯ ЯКОСТІ ПІДГОТОВКИ ФАХІВЦІВ У ЗАКЛАДАХ ФАХОВОЇ ПЕРЕДВИЩОЇ ОСВІТИ

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Реферат:

*Актуальність***.** Адекватне функціонування будь-якої педагогічної системи, зокрема і системи підготовки фахівців у коледжі, неможливе без зворотного зв'язку, без встановлення ефективності освітнього процесу, оцінювання результатів компетентнісно-орієнтованого навчання. Водночас педагогічною наукою ще не напрацьовано докладних теорій і валідних методик, які б давали змогу надійно оцінювати рівень опанування студентами професійними уміннями, навичками, іншими складними компетентностями, визначеними освітніми стандартами результатами навчання. З огляду на це, постала необхідність у розробленні надійної, системної і доступної у практичному застосуванні методики оцінювання якості підготовки фахівців у коледжах.

Мета – на основі аналізу сутнісних характеристик педагогічного оцінювання, особливостей компетентнісного підходу у фаховій передвищій освіті обґрунтувати методику оцінювання якості підготовки фахівців у коледжах.

Методи: теоретичні (теоретичний аналіз наукових джерел, вивчення вимог професійних і освітніх стандартів, освітніх програм, аналіз програм навчальних дисциплін – задля з'ясування стану проблеми дослідження та визначення напрямів наукового пошуку; порівняння – з метою вивчення наукових підходів щодо розв'язання проблеми; аналіз і синтез – для розроблення методу оцінювання компетентностей (освітніх результатів); емпіричні (спостереження, тестування – для визначення валідності інструментарію, внесення коректив у методику оцінювання; дидактичний експеримент – для визначення вагомості питань теми та виділення домінантних навчальних елементів).

Результати. Конкретизовано сутність педагогічного оцінювання як процесу встановлення рівня навчальних досягнень студента/студентів в оволодінні змістом навчальної дисципліни (теми, модуля та ін.) відповідно до унормованих вимог. Констатовано брак сталих підходів до визначення понять *«педагогічний контроль»*, «*педагогічний (освітній) моніторинг», «педагогічна діагностика», «педагогічне оцінювання», «оцінка», «перевірка», «облік», «педагогічне вимірювання»* та інших, що тісно пов'язані з названими. Доведено, що оцінювання якості професійної підготовки фахівців у коледжі має здійснюватися шляхом зіставлення демонстрованих студентами знань, умінь, навичок, інших компетентностей (актуальний стан об'єкта), з еталонними (очікуваними, унормованими) результатами, задекларованими в стандартах фахової перед вищої освіти (освітніх програмах). Обґрунтовано методику оцінювання якості професійної підготовки фахівців як алгоритм послідовної реалізації дев'яти етапів – від встановлення еталонних результатів навчання до продукування висновків про рівень якості компетентнісно-орієнтованого навчання студентів. Запропоновано метод оцінювання сформованості умінь (інших компетентностей) студентів на основі опису структурних компонентів професійної дії (предмет (об'єкт); процес (процедура); засоби; умови; результат (продукт).

*Висновки***:** Обґрунтована методика оцінювання якості професійної підготовки фахівців у коледжах дає можливість визначити реальний рівень відповідності підготовленості студентів встановленим нормативним вимогам на всіх етапах опанування здобувачами освітньою програмою. Запропонований метод оцінювання компетентностей (освітніх результатів) на основі дидактичного диференціювання професійних дій надає можливість зацікавленим суб'єктам освітнього процесу вже не інтуїтивно, а цілеспрямовано, на науковій основі розробити діагностичний інструментарій, провести діагностичні процедури й отримати об'єктивні, надійні результати перевірки компетентнісних досягнень студентів.

Ключові слова: *фахова передвища освіта, якість професійної підготовки, педагогічне оцінювання, метод оцінювання компетентностей, еталонні результати навчання.*

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PEDAGOGICAL CONDITIONS FOR THE DEVELOPMENT OF PROFESSIONAL COMPETENCE OF SKILLED SERVICE WORKERS

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Abstract.

Relevance is determined by the need to: develop the professional competence of skilled service workers throughout life as the main condition for the success of Beauty-masters in the dynamic innovative market of the beauty industry; create an appropriate educational and developmental environment in educational institutions for the formation of students' entrepreneurial and economic competence, improvement of creative and communicative abilities, development of motivation for professional development, self-education and self-study.

Purpose: definition and substantiation of pedagogical conditions of development of professional competence of skilled workers (beauticians, manicurists and hairdressers-designers) in the process of course preparation in the Training centers of service enterprises.

Methods: theoretical (induction, deduction, synthesis and generalization); empirical (research and analysis of pedagogical experience); questionnaire-diagnostic (questionnaire); expert evaluation method (Kendall concordance coefficient).

Results: the pedagogical conditions for the development of professional competence of skilled service workers are specified and substantiated.

Conclusions: it has been found that the development of professional competence of skilled service workers requires specially created pedagogical conditions to enable positive dynamics of professional development, gaining innovative experience and intensification of self-education and self-study, taking into account the level of professional readiness to the performance of official duties in the conditions of service enterprises and in accordance with own needs and requests of the individual; these pedagogical conditions are singled out and substantiated (increase of the level of motivation for continuous professional improvement; development of professional knowledge and skills in the School of Beauty-skills; application of innovative learning technologies; participation in professional activities).

Keywords: *pedagogical conditions, professional competence, skilled workers, School of Beauty-skills, innovative learn-ing technologies.*

Introduction. Modernization of the system of vocational (professional-technical) education (hereinafter – V (VET) E), creates new challenges and sets important tasks for V (VET) E institutions, the solution of which will provide training for professionally competent and socially mobile skilled service workers. Promising areas for the development of professional competence of skilled workers in the service sector are to increase their motivation for self-development, self-education and self-learning, expanding creative potential by gaining creative experience while studying at the School of Beauty-skills, intensification of the educational process through the use of innovative learning technologies,

improving creative abilities and reflections of listeners during participation in professional competitions, trainings, championships, conferences.

Sources. The problem of definition and concretization of pedagogical conditions of development of professional competence is considered in pedagogical researches of M. Artiushyna, O. Borodiienko, R. Hurevych, L. Korotkova, A. Lytvyn, V. Orlov, P. Luzan, V. Radkevych, O. Radkevych, N. Rudenko. Among the works that specify the pedagogical conditions for the formation and development of professional competence of service professionals, it is worth highlighting the work of S. Shevchuk (2018, p. 4), where the researcher offers the following pedagogical conditions: introduction of innovative pedagogical technologies for professional competence; raising the level of professional competence of future service professionals during internships; introduction of organizational and methodological support for the formation of professional competence; training of engineers-teachers for the formation of professional competence of service specialists. At the same time, L. Korotkova (2020, p. 205), researching the professional training of future service professionals, identifies four pedagogical conditions that positively affect the development of their professional competence, in particular: the formation of positive motivation to master modern production technologies; updating the content of professional training of future service specialists in the conditions of educational and production cluster on the basis of the competence approach; application of innovative pedagogical and production technologies; introduction of interactive educational and methodical support of professional training. At the same time, the concept of "pedagogical conditions for the development of professional competence of skilled workers in the field of services" needs to be specified and the pedagogical conditions for the development of professional competence of beauticians, manicurists and hairdressers-designers in the process of course preparation in the Training Centers of the service sector require to be substantiated.

The article aims to determine and substantiate the pedagogical conditions for the development of professional competence of skilled workers (beauticians, manicurists and hairdressers-designers) in the process of course training in the Training Centers of service enterprises.

Research methods: theoretical (induction, deduction, synthesis and generalization); empirical (research and analysis of pedagogical experience); questionnaire-diagnostic (questionnaire); expert evaluation method (Kendall concordance coefficient).

Results and discussion. The results of the analysis of scholars' views on the definition of "pedagogical conditions" show that there is no single interpretation of this pedagogical category. However, most scholars interpret this concept as: a set of objective possibilities of content, methods, organizational forms and material capabilities of the pedagogical process, which ensures the successful achievement of this goal (Gvozdetska & Filimonova, 2018); a set of content, methods, techniques, organizational forms of improving the efficiency of educational and production processes that ensure the achievement of the goal – the formation of professional competence of future employees (Korotkova, 2020, p. 205).

The approach to defining the concept of "pedagogical conditions", proposed by O. Borodiienko (2017, p. 2) is of scientific interest. The scientist highlighted its essential features (creating an environment for the functioning of the pedagogical system; a set of external circumstances and internal processes; factors influencing the learning process, etc.). Having identified the above features, the scientist concludes that the pedagogical conditions are a set of measures to ensure the integrity and orderliness of the designed pedagogical system in order to achieve the expected result. In view of this, pedagogical conditions should be understood as circumstances that affect all components of the structure of the pedagogical process in order to increase level of its efficiency to achieve the goal – a high level of competence of skilled workers in the service sector. In turn, professional competence is seen as an integrated personality trait that reflects the system of professional knowledge, skills, value orientations, professionally important qualities and determines the ability to effectively perform professional functions taking into account innovations in services, as well as readiness for self-development and professional development.

Among the current pedagogical conditions for the formation and development of professional competence of future professionals, researchers include:

– providing systematic positive motivation to master the future profession;

– use of innovative technologies in the process of formation of professional competence of future specialists;

– mastering the practical experience of future professional activity;

– taking into account the individual psychological characteristics of students in the process of their preparation;

– organization of training on the basis of activity approach (trainings, business games, debates, discussions, dialogues, etc.);

– use of various forms of course advanced training (full-time, part-time, individual, extended);

– organization of practical on-site training, internships and workshops, where students gain practical experience, realizing their own needs;

– organization of the educational process on the basis of personality-oriented and competence-based approaches to learning;

– improvement of scientific and methodological support;

– providing feedback (surveys, conversations, group forms of communication) in order to update the content of training in accordance with technological changes in the field of services, etc.

The defined pedagogical conditions apply to all components of the educational process: goals, content, forms, methods, teaching aids and control of learning outcomes, as well as the interaction of teachers and students of V (VET) E.

To determine the pedagogical conditions for the development of professional competence of skilled workers in the field of services the method of expert evaluation was used. The group of respondents who took part in the survey included 22 experts (teachers of professional and theoretical training, employers, scientists, students). The experts were asked to name four pedagogical conditions for the development of professional competence of skilled workers in the service sector. From the total number of answers, 11 options were selected, which were most often repeated (Table 1).

Table 1

The list of pedagogical conditions for the development of professional competence of skilled service workers

Pedagogical conditions	Sequence number
Update the content of training taking into account technological changes in the field of services	1
Application of innovative learning technologies	2
Providing educational centers with educational and methodical literature	3
Introduction of author's training courses	4
Participation in professional activities	5
Development of interaction with social partners	6
Increasing the level of motivation for continuous professional development	7
Modernization of the material and technical base of the training center	8
Involvement of masters from the enterprises of the beauty industry in teaching	9
Increasing the level of readiness of teachers and masters of industrial training for the use of distance learning	10
Development of professional knowledge and skills in the School of Beauty-skills	11

In order to specify the pedagogical conditions important for the development of professional competence of skilled workers in the field of services, a group of 15 experts was created, including 4 teachers of manicure, 4 teachers of hairdressing, 5 masters of industrial training, 2 employers. They were asked to rank the pedagogical conditions in order of importance (Table 2).

Table 2

Matrix of ranks of pedagogical conditions for the development of professional competence of skilled service workers

Pedagogical conditions												Total
Experts (m)	1	2	3	4	5	6	7	8	9	10	11	$\sum_{i=1}^{n}\sum_{j=1}^{n}$
1	2	8	1	7	10	3	9	4	6	5	11	66
2	4	11	5	1	9	2	10	6	3	7	8	66
3	1	9	3	2	8	6	11	4	7	5	10	66
4	4	11	2	3	7	1	10	6	5	8	9	66
5	5	10	6	7	8	2	9	3	1	4	11	66
6	3	7	1	9	8	2	11	4	6	5	10	66
7	1	10	2	8	11	5	9	6	3	4	7	66
8	4	8	5	2	7	9	11	1	6	3	10	66
9	3	10	2	4	11	6	9	5	7	1	8	66
10	5	7	1	6	8	10	9	4	2	3	11	66
11	2	8	1	7	10	3	9	4	6	5	11	66
12	1	7	3	2	8	6	11	4	9	5	10	66
13	4	11	7	1	9	2	10	6	3	5	8	66
14	5	10	6	7	8	2	9	3	1	4	11	66
15	4	11	2	3	8	1	10	6	5	7	9	66
Сума, $\sum_{j=1}^{m} R_{ij}$	48	138	47	69	130	60	147	66	70	71	144	990
$\left(\sum_{j=1}^{m} R_{ij}\right)$	2304	19044	2209	4761	16900	3600	21609	4356	4900	5041	20736	105460

It has been found that the first place in importance for the development of professional competence of skilled workers in the service sector is occupied by the pedagogical condition "Increasing the level of motivation for continuous professional development" (sum of ranks 147). The following conditions for the sum of ranks are: "Development of professional knowledge and skills in the School of Beauty-skills", "Application of innovative learning technologies", "Participation in professional activities", which are arranged in ascending order.

The consistency of the experts' opinions was determined using the Kendall concordance coefficient according to the formula 1, 2:

$$w = \frac{12 \cdot s}{m^2 \cdot (n^3 - n)} \quad (1)$$

where W – concordance coefficient;

m –number of experts in the group;

n – number of pedagogical conditions;

s – sum of the squares of the differences (deviation from the average).

m (number of experts in the group) = 15,

n (number of indicators) = 11.

$$S = \sum_{i=1}^{n} \left(\sum_{j=1}^{m} R_{ij} \right)^2 - \frac{\left(\sum_{i=1}^{n} \sum_{j=1}^{n} R_{ij} \right)^2}{n} \qquad (2)$$

$$S = 105460 - \frac{990^2}{11} = 16360$$

$$w = \frac{12 \cdot 16360}{15^2 \cdot (11^3 - 11)} = \frac{196320}{297000} = 0{,}66$$

According to the results of the calculation, it amounted to 0.66, which indicates a high consistency of experts' opinions. Thus, based on the results of expert evaluation, taking into account the consistency of experts' opinions, four pedagogical conditions were selected that positively affect the development of professional competence of skilled workers in the service sector, in particular: increasing motivation for continuous professional development; development of professional knowledge and skills in the School of Beauty-skills; application of innovative learning technologies; participation in professional activities.

The first pedagogical condition is to increase motivation for continuous professional development. The importance of the motivational component in the educational process is also noted by N. Cherniak (2013, p.2), noting that this component of the structure of the pedagogical process covers the cognitive needs, motives and meanings of learning. According to the scientist, there should be a need for self-improvement, self-realization and self-expression during training.

It should be noted that to ensure positive motivation for continuous professional development, it is necessary to apply various methods, tools, and methods of stimulation, which were thoroughly studied by Yu. Babanskyi (1988). Thus, the scientist identifies (on the basis of a holistic approach to the pedagogical process) three groups of teaching methods for the effectiveness of educational and cognitive activities: methods of organization and implementation of educational and cognitive activities; methods of stimulation and motivation of educational and cognitive activity; methods of control and self-control. Yu. Babanskyi refers methods of stimulating interest in learning (positive attitude to activity; the presence of motivational and cognitive components; cognitive games, including business, organizational and activity, computer and didactic; educational discussions; creation of situations of emotional and moral experiences; the creation of situations of employment, relevance, novelty, used to enhance the stimulating effect of learning content) to the methods of stimulating and motivating to study. It should be emphasized that these methods relate to the content of education and the holistic pedagogical process, as well as related to the internal motives of students, which is important when teaching the adult population in the Training Centers of the service sector.

The second subgroup of methods of motivation of educational and cognitive activities related to external motives, Yu. Babanskyi (1988, p.479) includes: methods of stimulating a sense of duty and responsibility; belief in the importance of learning and a positive example; encouragement (gratitude, reward, etc.). Taking into account this classification and based on the results of the analysis of literary sources and pedagogical practice, we have identified methods of motivation that can be used in the holistic pedagogical process of developing the professional competence of service professionals:

– method of explaining the importance of continuous professional development, its social significance and personal value (this method is implemented through the explanation of the needs for the development of professional knowledge and skills with subsequent joint planning of educational services, the choice of content, forms and methods);

– method of appealing to the professional and life experience of students, which demonstrates the relevance of training for further practical use of the acquired knowledge, i.e. is of an applied nature (implemented through the involvement of students in solving real problem professional situations, reproduction of successful professional and life experience);

– method of encouraging activity and independence in learning (carried out by helping students in setting educational and career goals, implementation of educational activities and reflection);

– method of motivation by success, creating a sense of success in students – experiencing the joys of the achieved result, which strengthens self-confidence and strengthens the desire to learn (it can be implemented in practice during the creation of the "Portfolio of skills of a specialist in the field of services", which encourages students to participate in competitions of professional skills and various ac-

tivities to improve professional competence – training in innovative technologies, workshops of industry experts, scientific conferences);

– method of self-promotion, which is to develop the ability to identify the strengths, supported by appropriate professional competence and qualifications, and identify key competencies that enable successful professional self-realization (can be realized through writing own resume and self-presentation during training sessions);

– method of consolidating a positive result, which allows to identify, characterize and consolidate learning achievements, reinforcing them with positive emotions, and direct students to further independent work, thus stimulating self-development and self-learning (this method may involve the use of techniques – scaling the level of achievement goals and objectives at the beginning of the lesson, highlighting the acquisition of new or modernized knowledge and skills during the lesson, providing an emotional description of the atmosphere of the lesson, the use of an accurate quote or metaphor, expression of gratitude).

Thus, the motivation for continuous professional development is the driving force on the path of professional development of a service specialist from a novice to an expert in the field with a successfully formed personal brand, which is provided by skillful implementation of appropriate methods and techniques.

The next pedagogical condition for the development of professional competence of skilled workers in the field of services is the development of professional knowledge and skills in the School of Beauty-skills, within which: the business course "Organizational and economic foundations of the beauty industry"; optional course "Psychology of interaction with clients"; master classes on mastering innovative production technologies by means of distance and blended learning are realized. The mentioned School is established and operates on the basis of an educational institution in accordance with the regulations. Students of the School of Beauty-Skills can be both students who are undergoing course training and graduates who want to improve their professional knowledge and skills, as well as increase the level of key competence.

The proposed business course consists of six modules and is implemented in full-time and part-time form of study. Its modular structure allows the students to combine theoretical classes in the form of interactive lectures, lectures-consultations, business games, and practical work, which students perform independently in the inter-module period. At the same time, students have the opportunity to keep in touch with teachers in order to receive online consultations. The business course program includes the following modules: professional development of master experts who have formed their own brand);

– module 1. Situational analysis of the beauty industry market and consideration of business ideas (situation in the beauty industry market; competitive environment; consumer, customer portrait, segmentation of service consumers; business idea, in particular, the creation of a popular offer in the beauty industry market – concept and strategy of the enterprise, positioning and differentiation, registration of the enterprise and obtaining permits for operation, the project of a beauty salon: the choice of premises, equipment, cosmetics).

– module 2. Economic aspects of functioning of the enterprise of the beauty industry (feasibility study of business – pricing, capacity, costs, investments and budgeting; basics of accounting and document management).

– module 3. Marketing and sales of services (marketing mix 4P (product, price, distribution, promotion), in particular: pricing; marketing communications; basics of merchandising; brand formation of the master).

– module 4. Business planning. Development of a business plan of a beauty industry enterprise (basics of business planning and business modeling, creation of marketing and financial plans for beauty industry enterprises).

– module 5. Training course: formation of key competencies of a successful entrepreneur (formation and development of internal motivation; development of leadership qualities and skills of using coaching tools for the organization and implementation of a business project).

In parallel with the business course, trainees in training centers and skilled service workers have the opportunity to master innovative production technologies by distance and blended learning. The advantages of distance learning during professional development of service professionals are: continuity of education, parallelism (learning without separation from the main place of work), individual learning trajectory, development of self-motivation and improvement of self-learning and self-education skills.

Various forms of classes can be used in the system of distance education of skilled service workers. The workshop on the development of innovative technologies includes: presentation of technology; role play; independent work of the student on reproduction of innovative technology (distance learning)

or training of skills on the basis of an educational institution (mixed form of education); reflection; lecture session, which provides independent mastering of educational material with the help of video lessons (video files); independent work – classes when students perform tasks that complement the knowledge of students from the course, which is mastered without the direct participation of the teacher; educational consultation conducted by distance learning teachers –offline or online; current and final control of success (conducting control and independent works via the Internet). Thus, remotely and with the help of a mixed form of training, specialists in the field of services (cosmetics) can master such innovative technologies as: "Laser technology", "Gouache facial massage", "Facial peeling", "Kinesiological taping of facial muscles".

Manicurists may be offered to master innovative technologies of production work in the form of blended learning, namely: distance learning of theoretical material and the formation of professional skills in innovative technologies of manicure work on the basis of the training center. In particular, the following topics are proposed: "Correction and restoration of the nail plate: 6 effective techniques", "Complex correction of gel modeling of the nail plate", "Eyelash decoration. Updated technologies ".

Hairdressers can be trained in a mixed form on the topics: "Men's haircut" Fade"(Fade). Technology", " Hairstyle technology"," French waterfall "," Botox hair. Technology". In addition, students of the School of Beauty-skills have the opportunity to improve their communication skills during the optional course "Psychology of interaction with clients", the curriculum of which includes topics: the formation of the image of a master-professional, self-presentation; basics of communication with the client and ethics of communication; customer orientation; complaint management and conflict resolution.

Thus, training at the School of Beauty-skills promotes the readiness of skilled service workers to perform professional activities, increases the level of professional mobility and rapid adaptation to dynamic changes in the high-tech market of the beauty industry, as well as economic and entrepreneurial literacy, stimulates self-motivation for continuous professional development.

The next pedagogical condition that is proposed for implementation is the use of innovative learning technologies while students master the author's programs at the School of Beauty-skills.

It should be noted that today in pedagogy there are two directions of modernization of the pedagogical process: modernization of traditional education and an innovative approach to the pedagogical process. Among a number of pedagogical approaches, we consider the personality-oriented approach related to such concepts as humanistic pedagogy, pedagogy of cooperation, developmental learning to be important for the education of the adult population. The main features of personality-oriented technologies are: facilitating (supporting) position of the teacher, the student – the subject of educational and cognitive activities; constructing goals for the development of needs and abilities of students by means of the subject; high level of independence of listeners; creation of "new" (subjectively new knowledge or personal innovations – needs, aspirations, abilities); reflection, analysis and consideration of the personality of the listener.

The tool for implementing an innovative approach in the educational process, which aims to develop the professional competence of skilled workers in the field of services – is the technology of interactive learning, characterized by teacher-student interaction at the level of "subject – subject" and reproduced through collaboration and cooperation enabling the creation of conditions for the formation and development of internal motivation. Therefore, it is the interactive method that underlies the organization of educational and cognitive activities. Naturally, in the process of implementing interactive technologies, the transformed traditional forms of learning are used, which have acquired new features, the main of which is the organization of effective communication. It encourages listeners to increase activity, flexibility and openness.

In particular, for the development of professional competence of skilled workers in the field of services, we propose to use such interactive forms of organization of the educational process as lecture, seminar, training, workshops.

The interactive lecture encourages students to analyze, synthesize, find cause-and-effect relationships, inferences, systematization, etc. during mastering theoretical educational material. Techniques that can be used during such a lecture are:

– highlighting a contradictory statement with further discussion (for example, the statement: there is an opinion that the creation and implementation of a project to open a beauty industry does not require writing a business plan);

– a description of the problem situation and its relevant discussion (for example, a problem situation: you have a limited budget for the initial advertising campaign, namely UAH 12,000. Identify appropriate marketing communications based on the real budget);

– encouraging students to take part in the discussion (for example, a discussion with the following question: where, in your opinion, should you start creating your own master brand?);

The interactive seminar performs the following functions: motivating (stimulates independence in learning); educational and cognitive (consolidation of knowledge); communicative (development of public speaking skills, discussion, etc.); reflexive (independent assessment of the level of knowledge, mutual assessment, etc.). Thus, studying in a business course, students independently (in the intermodule period) prepare final works for each module of the program, which is presented during an interactive seminar, namely:

– to the first module – "Situational analysis of the market of the city, area: the situation on the market, the competitive environment, a portrait of the consumer"; "Business idea – creating a popular offer";

– to the second module – "Creating a price list of services"; "Formation of the budget for opening the enterprise of the beauty industry";

– to the third module – "Development of site structure"; "Development of an advertising booklet of the enterprise";

– to the fourth module – "Creating a marketing plan".

During the seminar it will be appropriate to use such interactive methods as:

– "Brainstorming" (for example, with the topics: "Creating a portfolio of hairdressing services, manicure studio, Beauty-salon"; "Effective start of the advertising campaign Beauty-salon"),

– blitz interview (for example: "Presentation "for the elevator": presentation of the concept of the enterprise in 3 minutes", "Characteristics of the way of forming a personal brand of the master"),

– role play (for example: "Open day in the barbershop", "Self-presentation of the master of the salon"),

– business game (for example: “Preparation for inspections (checks and comments)” (fiscal and controlling bodies));

Training session has the following components in its structure:

– introductory part (feedback, identification of expectations, creating an atmosphere of trust, openness, goal setting);

– the main part (theoretical block: acquaintance with theoretical material through interactive presentations, mini-lectures with elements of conversation, discussions);

– practical part (role-playing games, group work, situation analysis, discussions, etc.);

– the final part (reflection, summarizing, etc.).

The training program at the School of Beauty-Skills includes a training course: "Formation of key competencies of a successful entrepreneur", which aims to form and develop internal motivation to do business, develop leadership skills and skills to use coaching tools to organize and implement a business project. This training session has the following stages: introductory meta-educational stage, theoretical, formative, reflective.

A workshop on professional skills is also an effective method of teaching, as it promotes the formation and development of professional knowledge, skills and abilities in innovative production technologies. Workshops are aimed at translating knowledge in innovation from a master expert to a novice or specialist who wants to upgrade knowledge to skills. The workshop has the technology of implementation, namely:

– presentation of innovative production technology (essence, innovation, advantages, implementation technology, etc.);

– imitation of role play (master-expert models the process of providing household services, where innovative production technology is used in conditions close to the work of enterprises of the beauty industry);

– independent work of the participants of the workshop on the reproduction of the technology of innovative production works, demonstrated by the master-expert;

– control and reflection – current control of production work by a master-expert; own and expert assessment of the quality of service provision.

Development workshops for service professionals can be as follows:

– for beauticians – "Carboxytherapy. "Technology of the procedure", "Combination of hardware techniques in care procedures", etc.;

– for manicurists – "Hardware manicure. From the technology of removing gel polish with a cutter to Nail design", "Hot manicure: an effective procedure for hand care in the winter";

– for hairdressers – "Five options for styling technology based on a bob haircut", "Trendy coloring technology Air-touch".

Another pedagogical condition that promotes the development of professional competence of skilled service workers and which was chosen by experts is the participation of masters in mass professional events, namely: competitions of professional skills, professional championships, industry exhibitions,

professional conferences, seminars on cosmetic brands. etc.. The purpose and objectives of the listed measures are: motivating skilled workers to self-improvement; stimulation to continuous self-education; development of creative potential; promoting the formation of a personal brand of the master, etc.. It should be noted that among the professional activities a special place is occupied by trade and professional competitions, which most significantly contribute to the development of professional competence of skilled workers in the service sector. As T. Dmytrenko (2015, p.4) notes in his work: the competition of professional skills is a form of labor competition, the most effective form of demonstration of the abilities, introduction of advanced techniques and methods of work, new technology and advanced technology, increasing the level of progressive training, identifying the best individual indicators, increasing interest in the profession and its promotion. Today, every educational institution, regardless of ownership, offers (its students and graduates) participation in professional competitions, which fills the pedagogical process with creativity, effective interaction between teacher and student, increasing the level of professional training by transferring best practices from expert to novice. In addition, industry exhibitions and cosmetic brands operating in the beauty industry market are also the founders and organizers of professional competitions in the form of championships, competitions, workshops, which is a platform for demonstration of innovative technologies and world experience by domestic and foreign experts. Taking into account the advantages of competitive activities, we consider it appropriate to supplement the training at the School of Beauty-skills with a list of professional competitive events, which can be attended by both course participants and skilled service workers.

Conclusions. The development of professional competence of skilled workers in the service sector requires specially created pedagogical conditions that allow positive dynamics of professional development, gaining innovative experience, as well as intensify self-education and self-study, taking into account the level of professional readiness to perform job responsibilities in the conditions of the service enterprise and according to own needs and inquiries. We have singled out and substantiated the following pedagogical conditions: increasing the level of motivation for continuous professional development; development of professional knowledge and skills in the School of Beauty-skills; application of innovative learning technologies; participation in professional activities. The introduction of the specified pedagogical conditions applies to all components of the structure of the pedagogical process: goals, content, methods, tools, control and interaction of participants in the learning process, and requires teachers' and industrial training masters' high level of pedagogical and professional skills, continuous self-improvement, creativity and economic, entrepreneurial and information and communication literacy.

List of references

Артюшина, М. В., 2013. Методи і прийоми мотивування і стимулювання навчальної діяльності студентів. *Вісник Житомирського державного університету імені Івана Франка,* 3, с.25-32.

Бабанский, Ю. К., 1988. *Педагогика: Учебное пособие дя студентов педагогических институтов*: 2-е изд., доп. и перераб. М: Просвещение.

Бородієнко, О. В., 2017. Педагогічні умови розвитку професійної компетентності керівників структурних підрозділів підприємств сфери зв'язку. *Збірник наукових праць Херсонського державного університету,* 76(2), с. 55-60.

Гуревич, Р. С., 2012. *Інформаційні технології навчання, інноваційний підхід: навчальний посібник.* Вінниця: ТОВ фірма «Планер».

Дмитренко, Т. В., 2015. *Ефективна організація та проведення конкурсів фахової та професійної майстерності: методичні рекомендації.* Полтава: Навчально-методичний центр професійно-технічної освіти у Полтавській області.

Короткова, Л. І., 2020. *Професійна підготовка майбутніх фахівців сфери послуг в умовах освітньо-виробничого кластера.* Теоретичні і методичні основи: монографія. Запоріжжя: Просвіта.

Литвин, А., 2013. Методологічні засади поняття «педагогічні умови». *Педагогіка і психологія професійної освіти,* 4, с.43-63.

Лузан, П. Г., 2000. Концептуальні положення та перспективи впровадження педагогічних технологій. *Науковий вісник Національного аграрного університету: збірник наукових праць*, 33, с. 207-213.

Орлов, В. Ф., 2017. Інтеграційний підхід до формування й розвитку професійної компетентності та кар'єрних орієнтацій майбутніх дизайнерів. В: *Професійна освіта в умовах інтеграційних процесів: теорія і практика. Збірник наукових праць у 2 ч.* Житомир: ФОП «Н. М. Левковець», ч. І, с. 277-282.

Радкевич, В. О., 2012. Компетентнісний підхід до забезпечення якості професійної освіти і навчання. В: *Науково-методичне забезпечення професійної освіти і навчання: матеріали звітної науково-практичної конференції*. Київ: Інститут професійно-технічної освіти НАПН України, Т. 1, с. 5-12.

Радкевич, О. П., 2020. *Педагогічні умови розвитку правової культури педагогічних працівників закладів професійної освіти*, [online] 8(60). Доступно: https://cyberleninka.ru/article/n/pedagogichni-umovi-rozvitku-pravovoyi-kulturi-pedagogichnih-pratsivnikiv-zakladiv-profesiynoyi-osviti/viewer [Дата звернення 20 Березень 2021].

Руденко, Н. В., 2015. Педагогічні умови формування професійного ставлення іноземних студентів до освітньої діяльності у ВНЗ. *Педагогіка формування творчої особистості у вишах і загальноосвітніх школах, 41*, с. 538-543.

Черняк, Н. О., 2013. Формування мотивації студентів до навчання у ВНЗ. *Проблеми інженерно-педагогічної освіти,* 38-39, с. 388-389.

Шевчук, С. С., 2018. Професійна підготовка фахівців сфери обслуговування на засадах компетентнісного підходу. *Імідж сучасного педагога, 5 (182),* с. 41-45.

Gvozdetska, Yu. V. ta Filimonova, I. A., 2018. Pedagogical conditions for formation of professional competence of future factors in the field of food technologies in professional preparation. *The scientific method*, 15 (1), pp.57-60.

Translated & Transliterated

Artiushyna, M. V., 2013. Metody i pryiomy motyvuvannia i stymuliuvannia navchalnoi diialnosti studentiv [Methods and techniques of motivating and stimulating students' learning activities]. *Visnyk Zhytomyrskoho derzhavnoho universytetu imeni Ivana Franka [Bulletin of the Zhytomyr State University named after Ivan Franko]* 3, s. 25-32, [in Ukrainian].

Babanskyi, Yu. K., 1988. *Pedahohyka: Uchebnoe posobye dia studentov pedahohycheskykh ynstytutov [Pedagogy: Textbook for the students of pedagogical institutes]:* 2-e yzd., dop. y pererab. M: Prosveshchenye, [in Ukrainian].

Borodiienko, O. V., 2017. Pedahohichni umovy rozvytku profesiinoi kompetentnosti kerivnykiv strukturnykh pidrozdiliv pidpryiemstv sfery zviazku [Pedagogical conditions for the development of professional competence of the heads of the structural units of enterprises in the field of the communications]. V: *Zbirnyk naukovykh prats Khersonskoho derzhavnoho universytetu* [*Collection of the scientific works of the Kherson State University*], 76(2), s. 55-60, [in Ukrainian].

Hurevych, R. S., 2012. *Informatsiini tekhnolohii navchannia, innovatsiinyi pidkhid: navchalnyi posibnyk [Information technologies of training, the innovative approach: the textbook]*. Vinnytsia: TOV firma «Planer», [in Ukrainian].

Dmytrenko, T. V., 2015. *Efektyvna orhanizatsiia ta provedennia konkursiv fakhovoi ta profesiinoi maisternosti: metodychni rekomendatsii [Effective organization and holding of competitions of the professional and professional skills: methodical recommendations]*. Poltava: Navchalno-metodychnyi tsentr profesiino-tekhnichnoi osvity u Poltavskii oblasti [Educational and methodical center of vocational education in the Poltava region], [in Ukrainian].

Korotkova, L. I., 2020. Profesiina pidhotovka maibutnikh fakhivtsiv sfery posluh v umovakh osvitno-vyrobnychoho klastera [Professional training of the future specialists in the field of the services in the educational and production cluster conditions]. V: *Teoretychni i metodychni osnovy: monohrafiia [Theoretical and methodical bases: monograph]*. Zaporizhzhia: Prosvita, [in Ukrainian].

Lytvyn, A., 2013. Metodolohichni zasady poniattia «pedahohichni umovy» [Methodological principles of the concept of the "pedagogical conditions"]. *Pedahohika i psykholohiia profesiinoi osvity [Pedagogy and psychology of vocational education],* 4, c.43-63, [in Ukrainian].

Luzan, P. H., 2000. Kontseptualni polozhennia ta perspektyvy vprovadzhennia pedahohichnykh tekhnolohii [Conceptual provisions and prospects for the introduction of the pedagogical technologies]. *Naukovyi visnyk Natsionalnoho ahrarnoho universytetu [Scientific Bulletin of the National Agrarian University]*, 33, s. 207-213, [in Ukrainian].

Orlov, V. F., 2017. Intehratsiinyi pidkhid do formuvannia y rozvytku profesiinoi kompetentnosti ta karierynykh oriientatsii maibutnikh dyzaineriv [Integration approach to the formation and development of professional competence and career orientations of the future designers]. *Profesiina osvita v umovakh intehratsiinykh protsesiv: teoriia i praktyka [Vocational education in the context of integration processes: theory and practice]*. Zbirnyk naukovykh prats u 2 ch. Zhytomyr: FOP «N. M. Levkovets», ch. I, s. 277-282, [in Ukrainian].

Radkevych, V. O., 2012. Kompetentnisnyi pidkhid do zabezpechennia yakosti profesiinoi osvity i navchannia. *Naukovo-metodychne zabezpechennia profesiinoi osvity i navchannia: materialy zvitnoi naukovo-praktychnoi konferentsii* [Competence approach to quality assurance in vocational education and training. *Scientific and methodological support of professional education and training: materials of the reporting scientific-practical conference*]. Kyiv: Instytut profesiino-tekhnichnoi osvity NAPN Ukrainy [Institute of Vocational Education of the National Academy of the Pedagogical Sciences of Ukraine], T. 1, s. 5-12, [in Ukrainian].

Radkevych, O. P., 2020. Pedahohichni umovy rozvytku pravovoi kultury pedahohichnykh pratsivnykiv zakladiv profesiinoi osvity [Pedagogical conditions of development of legal culture of the pedagogical workers of the institutions of professional education]. *Colloquium-Journal*, [online] 8(60). Dostupno: https://cyberleninka.ru/article/n/pedagogichni-umovi-rozvitku-pravovoyi-kulturi-pedagogichnih-pratsivnikiv-zakladiv-profesiynoyi-osviti/viewer [Data zvernennia 20 Berezen 2021], [in Ukrainian].

Rudenko, N. V., 2015. Pedahohichni umovy formuvannia profesiinoho stavlennia inozemnykh studentiv do osvitnoi diialnosti u VNZ [Pedagogical conditions of formation of professional attitude of the foreign students to educational activity in high school]. *Pedahohika formuvannia tvorchoi osobystosti u vyshakh i zahalnoosvitnikh shkolakh [Pedagogy of creative personality formation in the universities and secondary schools]*, 41, s. 538-543, [in Ukrainian].

Cherniak, N. O., 2013. Formuvannia motyvatsii studentiv do navchannia u VNZ [Formation of students' motivation to study at the university]. *Problemy inzhenerno-pedahohichnoi osvity [Problems of engineering and pedagogical education]*, [online] 38-39, s. 388-389, [in Ukrainian].

Shevchuk, S. S., 2018. Profesiina pidhotovka fakhivtsiv sfery obsluhovuvannia na zasadakh kompetentnisnoho pidkhodu [Professional training of the service specialists on the basis of the competence approach]. *Imidzh suchasnoho pedahoha [Image of a modern teacher], 5 (182)*, s. 41-45, [in Ukrainian].

Gvozdetska, Yu. V. ta Filimonova, I. A., 2018. Pedagogical conditions for formation of professional competence of future factors in the field of food technologies in professional preparation. *The scientific method*, 15 (1), pp.57-60, [in English].

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ПЕДАГОГІЧНІ УМОВИ РОЗВИТКУ ПРОФЕСІЙНОЇ КОМПЕТЕНТНОСТІ КВАЛІФІКОВАНИХ РОБІТНИКІВ СФЕРИ ПОСЛУГ

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Реферат:

Актуальність визначається необхідністю: розвитку професійної компетентності кваліфікованих робітників сфери послуг протягом всього життя як головної умови успішності Beauty-майстрів на динамічному інноваційному ринку індустрії краси; створення в закладах освіти відповідного освітньо-розвивального середовища для формування у слухачів підприємницької й

економічної компетентності, вдосконалення творчих і комунікативних здібностей, розвитку мотивації до професійного вдосконалення, самоосвіти та самонавчання.

Мета: визначення та обґрунтування педагогічних умов розвитку професійної компетентності кваліфікованих робітників (косметиків, манікюрників та перукарів-модельєрів) у процесі курсової підготовки в Навчальних центрах підприємств сфери послуг.

Методи: теоретичні (індукція, дедукція, синтез та узагальнення); емпіричні (дослідження та аналіз педагогічного досвіду); опитувально-діагностичні (анкетування); метод експертного оцінювання (коефіцієнт конкордації Кендалла).

Результати: конкретизовано та обґрунтовано педагогічні умови розвитку професійної компетентності кваліфікованих робітників сфери послуг.

Висновки: з'ясовано, що розвиток професійної компетентності кваліфікованих робітників сфери послуг потребує спеціально створених педагогічних умов для уможливлення позитивної динаміки професійного вдосконалення, набуття інноваційного досвіду та активізації самоосвіти й самонавчання з урахуванням рівня фахової підготовленості до виконання посадових обов'язків в умовах підприємства сфери послуг та відповідно до власних потреб і запитів особистості; виокремлено й обґрунтовано ці педагогічні умови (підвищення рівня мотивації до безперервного професійного вдосконалення; розвиток фахових знань і вмінь у Школі Beauty-майстерності; застосування інноваційних технологій навчання; участь у заходах фахового спрямування).

Ключові слова: *педагогічні умови, професійна компетентність, кваліфіковані робітники, Школа Beauty-майстерності, інноваційні технології навчання.*

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DIAGRAMS, CHARTS AND GRAPHS AS A TOOL FOR PRESENTING PROJECT INFORMATION

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Abstract.

Relevance: In project activities, a large amount of numerical data from different project tasks needs to be handled, which complicates communication between implementers. Adding to the complexity is the significant amount of project information that can be misrepresented and therefore incomprehensible to project implementers. This creates communication barriers until the presenter explains the essence of the process by depicting a diagram, schematic or graph. With this in mind, a graphical presentation of project information, while not replacing textual presentation, is appropriate and greatly accelerates the understanding of the principles of project execution.

Objective: Explore the role of charts, graphs and diagrams as a tool for presenting project information.

Methods: theoretical analysis of scientific sources - to clarify the state of research on this issue in Ukraine and abroad; comparison - to study scientific approaches to solving the problem; synthesis of progressive experience - to present project information in the form of charts, graphs and diagrams.

Results: Gantt chart as a histogram for sequential representation of information is investigated. A flow chart illustrating the progress of any process from general information to project tasks is disclosed. The specifics of the S-curve, both for representing the base or actual cumulative value and for comparing the two over time, are highlighted. The chart columns used to compare and summarize groups of data are analyzed. The characteristics of the resource histogram - for workforce management planning are disclosed. Attention is paid to the trigger diagram used for quality management and reflecting the performance of the profile representation over time.

Particular attention is paid to the Pareto diagram, according to which the analysis of existing problems in project activities and decision-making on quality control are provided. The section of the diagram used to show the contribution of individual elements to the overall project is analyzed. Control chart - to check the stability of any project process both with and without control limits. The main components of the organizational chart are highlighted, which allows to understand the organizational hierarchy, escalation levels and communication path in the project.

Conclusions: the analysis of charts, graphs and schemes as elements of project communication has shown the positive influence of the graphic component on the communication process.

Keywords: *project communication, Gantt chart, block diagram, S curve, bar chart, resource histogram, trigger dia-gram, Pareto diagram, sector diagram, control diagram, organization chart.*

Introduction. The rapid development of society causes the complexity of perception of project information. This is explained by the fact that the individuality of each person is unique, and therefore there are different communication barriers that make it impossible to adequately perceive large amounts of project information.

Therefore, it is relevant to interpret project information through charts, graphs, diagrams and compare it with other important elements of project communication. Thus, baseline data are fed through a variety of tools to provide perspective and facilitate analysis and decision-making under different circumstances. Some of these tools are used in the process of: planning; execution; monitoring and controlling project tasks. This allows a better perception of the large amount of information through a graphical representation, which in turn is widely used in project activities.

Sources. Scientific and theoretical basis for solving the problem of presenting project information are the works of domestic scientists: V. Radkevich, A. Borodienko, L. Puhovska, A. Samoilenko, A. Radkevich, N. Bazelyuk. The works of foreign researchers deserve special attention: B. Adedeji, C. Baca, P. Jansen, L. Benjamin, B. Dan, J. Shankar.

The article aims. Explore the role of charts, graphs and diagrams as a tool for presenting project information.

Methods: theoretical analysis of scientific sources - to clarify the state of research of the problem in Ukraine and abroad; comparison - to study scientific approaches to solving the problem; synthesis of progressive experience - to interpret the project information in charts, graphs and diagrams.

Results and discussion. Project interaction is impossible without proper communication of pedagogical staff of professional education institutions (hereinafter referred to as project implementers), especially in terms of coordination of their activities (Radkevych, 2021, pp. 132). Thus, communication is an important basis for obtaining information on the implementation of project tasks. It is known that information is transmitted through effective communication, so access to information about project activities reflects the contribution of each participant in its implementation. Communication increases the chances of obtaining reliable information quickly and has a positive impact on the effectiveness of project management and implementation (Borodienko et al., 2020, pp. 166).

In the process of such interaction an innumerable amount of information is generated, which is divided into primary (empirical) and secondary (derivative). Primary (empirical) information is understood as data obtained for the first time to solve a specific problem, not contradicting the methodology of information collection and similar data from other sources. Such information is usually confidential until its public disclosure. Secondary (derived) information is data that can be derived from several sources within a different objective than the purpose for which the data are used. Primary information can arise from secondary information. Often, project activities use both primary and secondary information for consistent analysis and presentation in charts, graphs and diagrams.

With this in mind, we investigated the most impactful types of project information presentation, namely Gantt Chart, Flowchart, S-curve, Resource Histogram, Progress Chart, Pareto Chart, Pie Chart, Control Chart and Organizational Chart. For example, the Gantt Chart is the most popular tool used to consistently highlight information (especially for human resources). It is a bar chart that illustrates the sequence of project activities and is presented as a graph. There are many tools used for planning and the graph itself can be created in different ways. The key feature of the Gantt chart is that it is easy to perceive, understand and hence create. Note that due to the simple and logical construction of the diagram it is possible to quickly understand the sequence of project activities and to analyse the planning problems of project tasks, which is an important element of internal communication.

The Gantt Chart provides quick answers to the following common questions: when did the project start?; what project activities are envisaged?; what is the order of activities and tasks?; how many project implementers are involved for each type of project task and their names?; how many activities have been completed and their duration, and how many project activities are yet to start? How many project activities have been completed early, late, and which have been postponed?; when is project completion expected? etc.

According to the project needs, the diagram display can be customized to provide only the necessary information. The most popular software application for working with Gantt chart is Microsoft Project (Radkevych, 2019, pp. 129-130). Using Microsoft Project, project managers can analyze the impact of various parameters on the schedule of project activities. The diagram allows to change the allocation of resources among project implementers and view the "floating" information to find out its impact on the overall schedule of project activities. Such analysis helps in decision making by finding alternatives for solving resource conflicts and other project problems. These changes are easily entered into the Gantt Chart to determine their overall effect.

In a Gantt Chart, each task or activity occupies one line. Dates are placed from the top and divided into days, weeks, months or quarters, depending on the overall project duration. The expected time for each task is represented by a horizontal bar, where the left end represents the task start date and the right end represents the expected completion date (Figure 1). These elements of a task constitute the structure of work distribution in the prospectus. Tasks can be performed sequentially, concurrently, or overlapping. So, the Gantt chart can be used to display dependencies (i.e., preference network) between activities. Dependencies provide an indication of the order in which project tasks are performed.

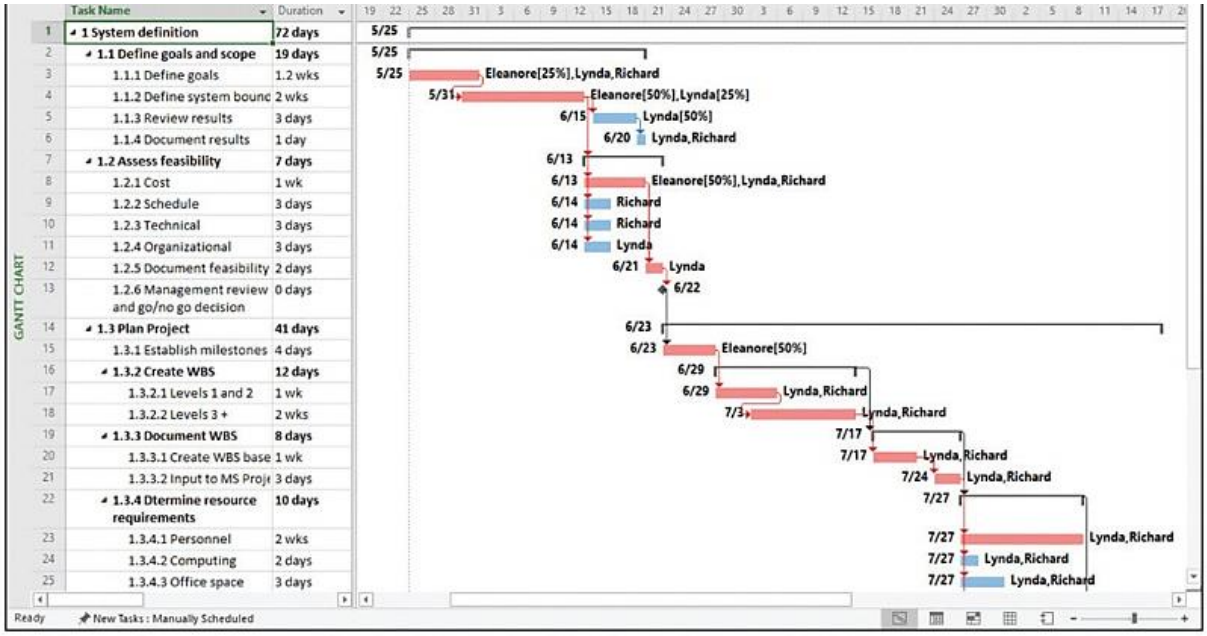

Figure.1 Project Management Hourly Scale

The Gantt Chart can be used in various ways to provide information about various project tasks and their details. First of all, it is project planning (Figure 1), reflecting the timing of the main tasks required to complete the project, as well as the order in which they are completed. Equally important is the project progress measure, it is updated during the execution, monitoring and control, which is further filled in by columns in proportion to the proportion of the work that has been completed (Dan, 2006, pp. 149).

In this context, the differentiation on the construction of project schedules between sequential and parallel planning (execution) is relevant. Parallel project scheduling involves the simultaneous execution of many project tasks, which saves a large amount of project time, but reduces the quality component of project tasks, which affects the quality of the project. Sequential project planning involves the execution of a single project task by all project implementers, which speeds up its completion and increases the quality component of the project. If you need to model project situations and present the status of project execution as a whole, you should consider the percentage of completed project tasks (Figure 2), which are shaded, and the vertical line "today" to show the status of the current project execution.

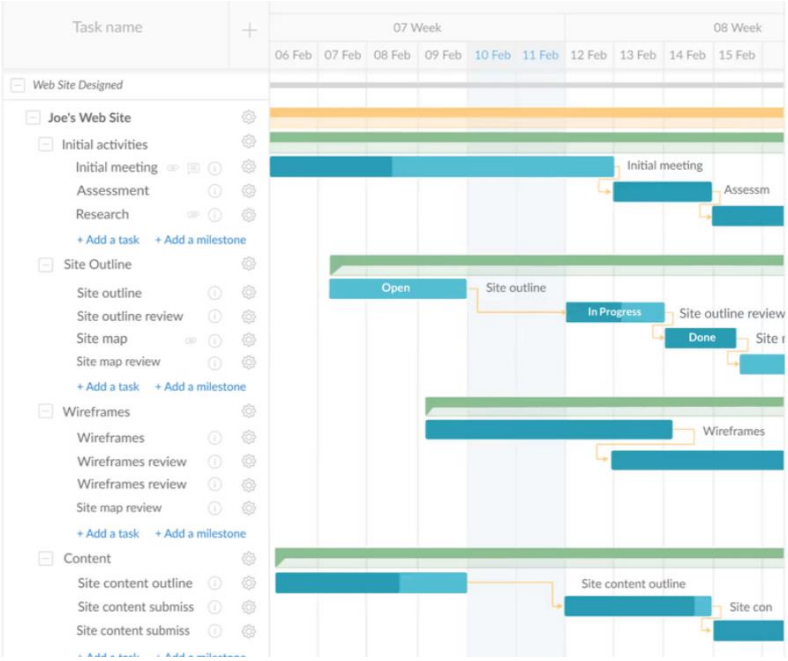

Figure 2. Timing and progress of project tasks

Completed tasks are placed to the left of the "today" line, which shows the status of project tasks: behind schedule if the portion to the left of the "today" line is not completed; ahead of schedule if the completed portion is to the right of the line. Future tasks will be placed to the right of the line. This provides information on what should have been accomplished compared to completed project tasks. This modelling is effective for representing the project schedule and its status to stakeholders. Note that the diagram should reflect the major project milestones, with a particular focus on key and problem tasks.

While the project is underway, the Gantt Chart allows: first, to track the project on schedule; second, to search for and correct ineffective activities in order to get the project schedule back on track.

Note that 15 to 20 project tasks can fit on one page in a Gantt Chart (Figure 3). For more complex projects, additional charts detailing the timing of all sub-tasks that make up one of the main project tasks may be needed.

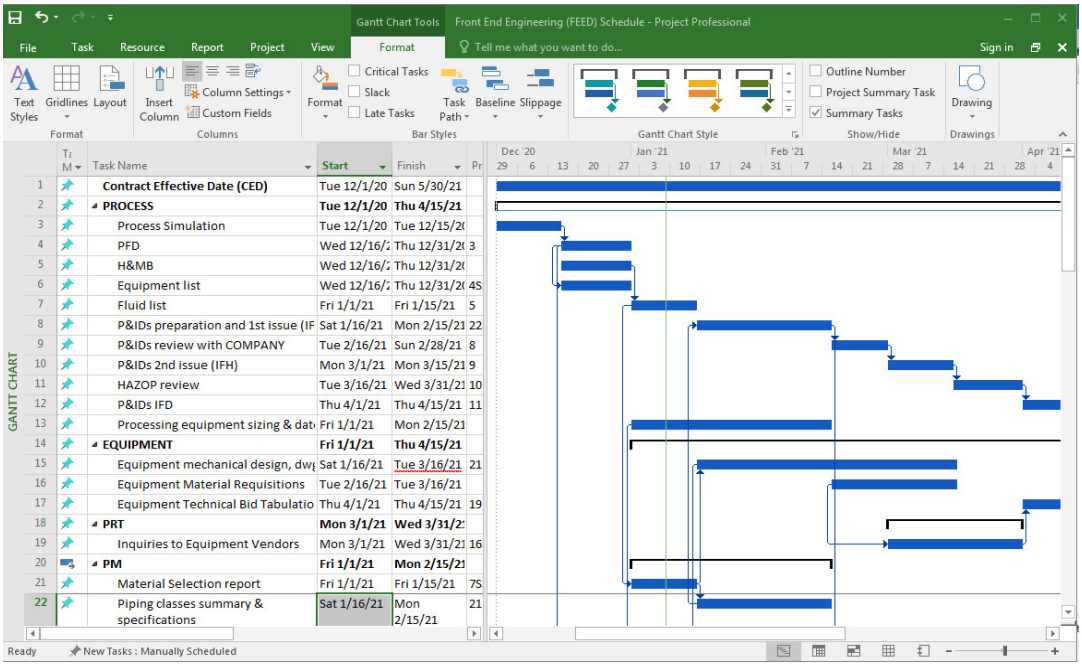

Figure 3. Example of a Gantt Chart

An important type of diagram for presenting project information is a flow chart that illustrates the flow of any process: from general information to project tasks (Figure 4). The tool graphically depicts the steps that need to be taken to complete a particular task. As part of project communication there is a need to present project information using flowcharts, which is an effective tool for visual presentation.

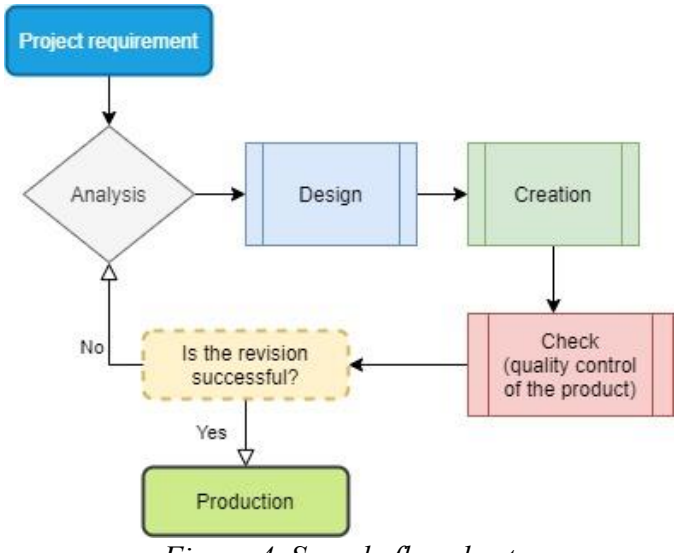

Figure 4. Sample flowchart

The use of flowcharts in a project occurs: first, when it is necessary to explain the steps for performing the task to the project executors; second, when it is necessary to implement the project-architectural approach; third, to present the organizational chart; fourth, to form planning diagrams; fifth, to create logical schemes of situation analysis for solving internal-project problems.

Flowcharts are indispensable at the start of every project when there is a need for a holistic presentation of the project and its objectives - from inception to successful completion. An important element of presenting a project through a flowchart is to discuss it coherently, which will ensure a common understanding among stakeholders from the beginning and help avoid misunderstandings at the end of the project. Note that the flowchart should demonstrate the current state and what the end result will look like after the project is implemented, so it should contain the main inputs, processes, outputs and present a clear sequence of activities. It can be easily created using Microsoft Visio (Figure 5). Simpler diagrams can be created using Microsoft Word functions. A flowchart can also be created using Smart-Art in Microsoft Word to show the sequence of activities, which is very effective when comparing two or more processes.

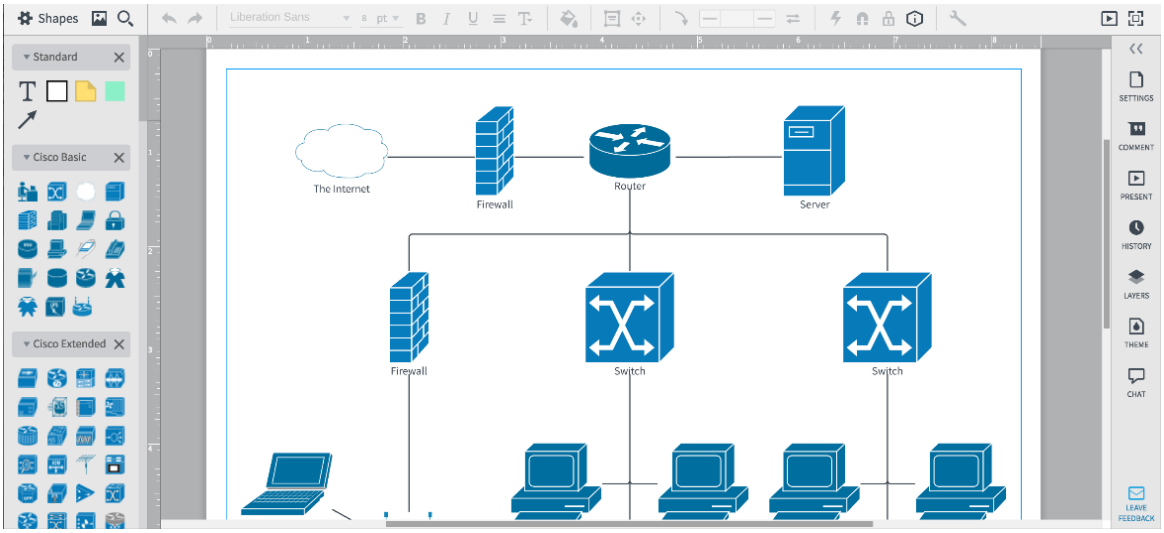

Figure 5. Microsoft Visio

For a holistic understanding of the flowchart, it is important to represent it as a "Swimlane" (Figure 6). The "swimlane" concept refers to the distribution of tasks into tracks belonging to specific project implementers. The tracks can be arranged both horizontally and vertically, only the starting point of the diagram, which is the upper left corner, is unchanged. Note that this type of flowchart will not be effective when executing many projects at the same time, because it creates tangled schedules.

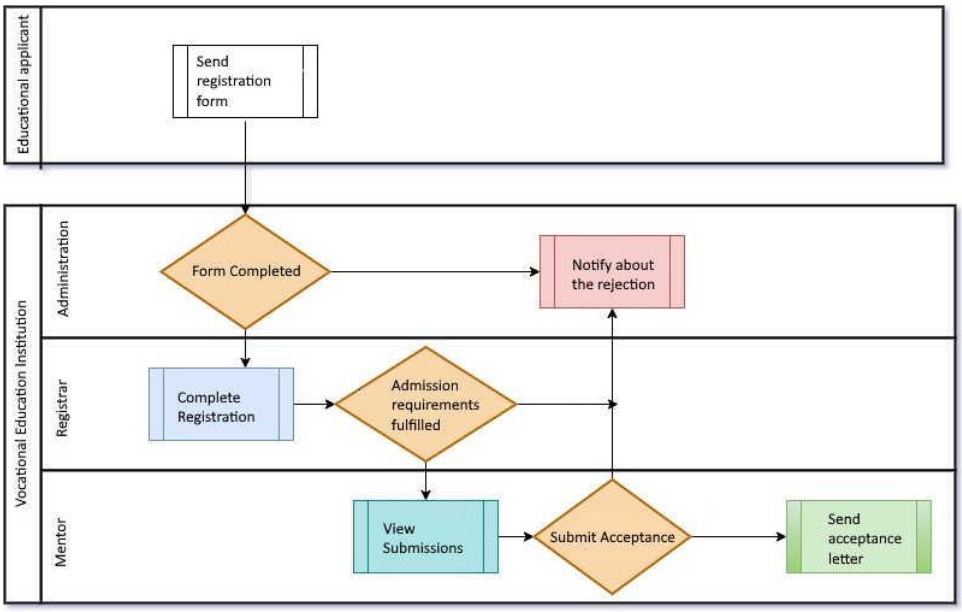

Figure 6. Representation of the block diagram as a Swimlane

Another important element of using flowcharts of "swimming lanes" type is to specify the head of the project task, who can act as an individual or a legal entity. In this case, the flowchart will be cross-functional, i.e., provide for communication between performers of different organizations that perform a common task, which has a positive effect on the analysis and highlights losses, if any. It is the lack of coordination that can cause problems in communication between external and internal project implementers. It also shows who is in control of each part of the process. Sometimes the different phases of the process can be demonstrated through 'swim lanes' and the owner can be identified through a colour code that highlights the compliance lane. In the context outlined, no special knowledge is needed to create flowcharts and then everyone can create and understand it if they wish.

A widely used tool for representing the baseline, actual cumulative project cost, and for comparing the two over time is the S-curve graph. The cumulative values of actual cost, planned cost, funds received, and budget for completing the profile can be demonstrated by plotting a graph over time, where all of its boundaries form an "S" shape. It is equal at the beginning and at the end, and rounded in the middle (Dan, 2006, pp. 153). When these parameters are plotted on a graph with a time component, they represent critical information about project performance, such as: volume, cost (or resources), and schedule. Note that this can also be used for cost variance, funding requirements, and forecasting purposes.

In this context, it is relevant to have software that automatically generates Curve S graphs. Among the software products that support this capability are Microsoft Word, Excel, and Project. These applications can be used to plot cumulative values relative to the time/project phase using a smooth line curve, as shown in Figure 7.

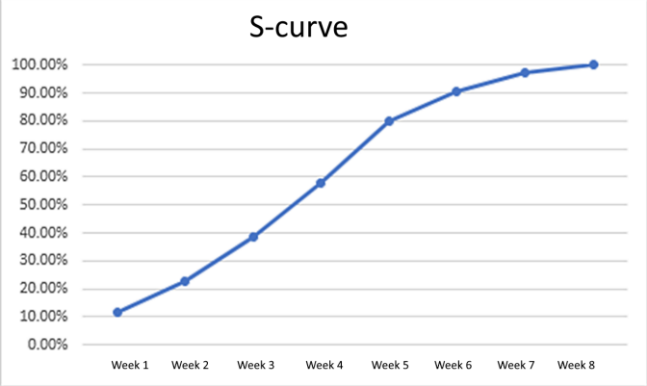

Figure 7. S curve

What deserves attention is the cost baseline, which is the project budget that is determined over time; hence, when the total cost is added up over time, this gives the cost baseline. It is possible to determine the budgeted cost of a project at different points and easily predict the budget (Baca and Jansen, 2003). The diagram in Figure 8 is a simple one that shows the actual cumulative cost compared to the cost baseline.

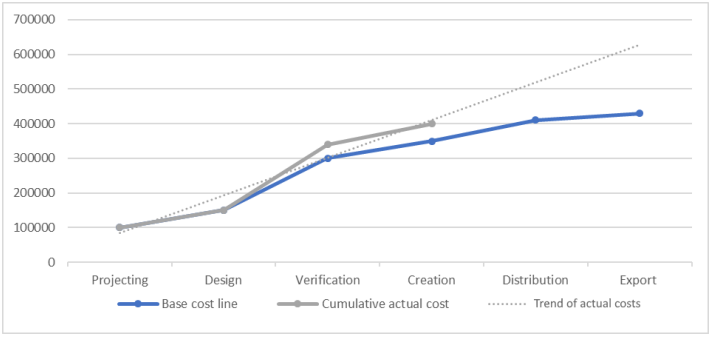

Figure 8. Demonstration of actual costs compared to the baseline

This diagram illustrates the status of the project in terms of cost. The cost baseline represents the total budget for the design, design, quality assurance, build, and other phases. The total cost at the end of the build phase is the combined actual cost of initializing design requirements and the build phase. The chart clearly shows the trend of actual costs, and if the trend continues, the actual cost at the end of the project can be predicted. Note that a simple chart like this can be plotted on a time basis (monthly, quarterly, etc.).

The S curve reflects the rate of cost growth, which is slow in the beginning because the project starts with only a few participants. The design phase usually has very few resources. Over time, the project is staffed with all key team members. The project peaks during the build phase, when the maximum amount of work takes place. Suddenly, the number of human resources and the amount of other important resources needed to complete the project grows. This is where the growth rate peaks and finally levels off as very little change in human resources and capital occurs in the last phase of the project.

A bar chart is used to identify trends and comparisons. When making a chart for comparison, you can use different colours for different subjects. It is also called a bar chart, a special type of bar chart used to summarize groups of data. Project managers monitor the actual cost of the project and need to compare them with the project budget. The budget can be allocated according to the timing of the project, so it

can be compared very effectively on a monthly or quarterly basis. The bar chart is an effective tool for tracking, monitoring and reporting resource data. It is also a useful tool for reporting as it captures a lot of information. Relevant software for creating bar charts and bar graphs is Microsoft Excel, Word. One variety is an accumulation bar chart, which can be used to represent the contributions of different components at different locations or times (Figure 9). Another example would be a combined chart, where a bar chart can be shown in combination with a line chart, which is actively used in the Pareto diagram.

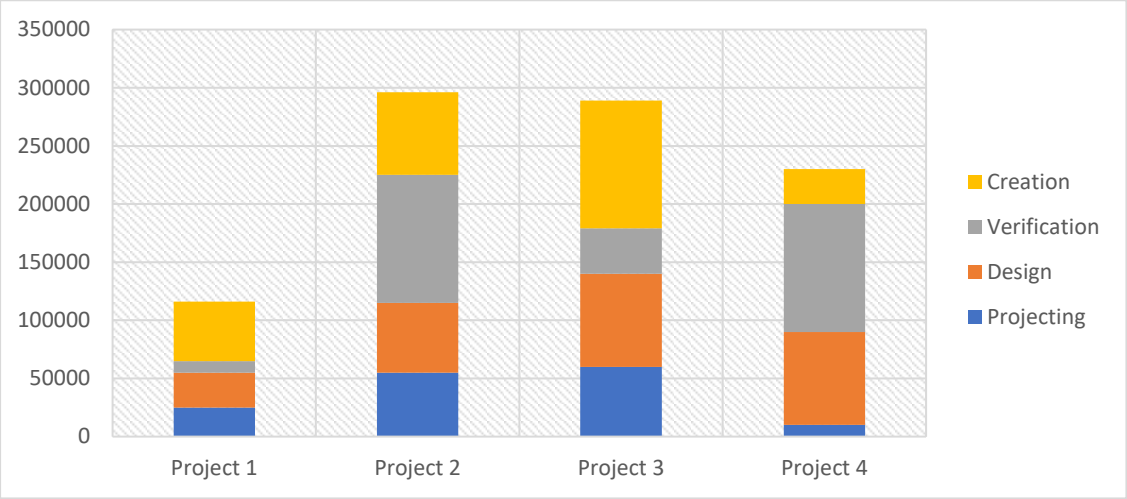

Figure 9. Example of a bar chart with accumulation

The use of coloured accompaniment makes the visual presentation better for perception, as it is easy to understand the differences at a glance. Note that identical data can be presented in different ways, which makes it easier to perceive (Figure 10).

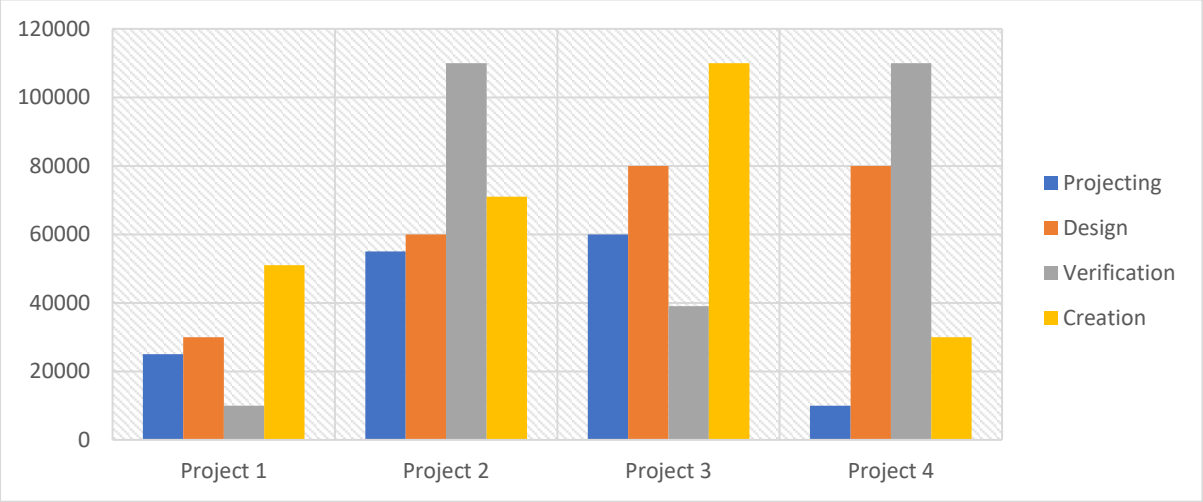

Figure 10. Example of a split indicator chart column

For human resource management planning, where human resources are represented in the form of a bar chart, it is advisable to use a resource bar chart. It illustrates the number of hours that an individual, department, or the entire project team needs to work continuously. This histogram can contain a horizontal line of 100% (Figure 11) that includes the maximum number of hours available for a certain resource. Columns that extend beyond the line indicate the need to level up resources. For example, adding more resources or extending the project schedule or a specific task.

According to the graph, you can find out the surplus of the remaining resources, its percentage distribution, redistribution, etc. Thus, it is possible to set a different color for redistribution (Fig. 11), which shows the presence of excess resources. Accordingly, Fig. 12 shows the number of over-allocated man-hours for a similar task with the same duration. Note that you can change the parameters in Microsoft Project to get a bar chart with different resource parameters.

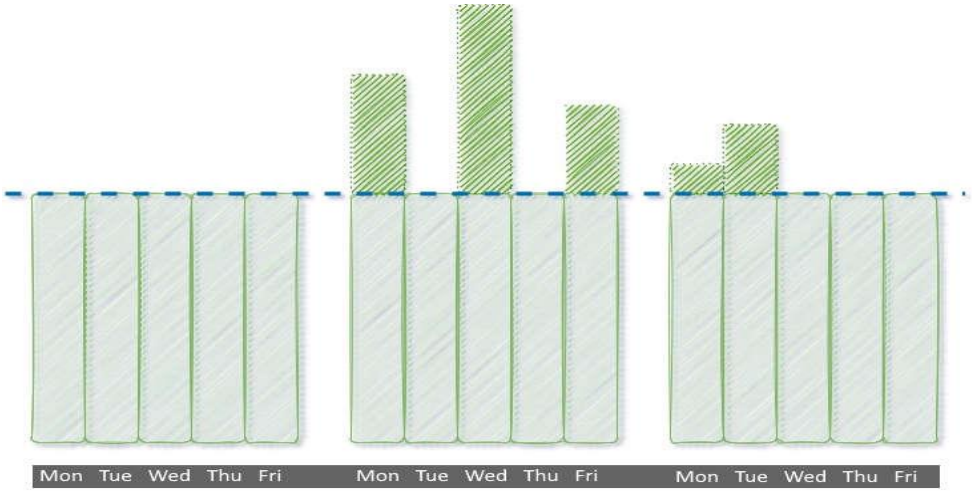

Figure 11. Resource histogram

The use of this tool is actively used in reporting for analysis and decision making. Note that multi-tiered profile managers can use this tool to optimize resource levels, allocate them efficiently and use them optimally. In fact, the powerful visual presentation of the tool facilitates its use and analysis. It is possible to create graphs by weeks or months, allowing you to compare the allocated work time for different resources. Any allocation that exceeds the line of 160 hours must be corrected with resource alignment. Similarly, an allocation versus utilization can be created for resources and can be analyzed before making adjustments.

A resource bar chart is useful when managers perform resource planning or allocate resources among multiple projects in a program. Resource allocations should be reviewed once a week or every two weeks to ensure that no resource is over- or under-allocated.

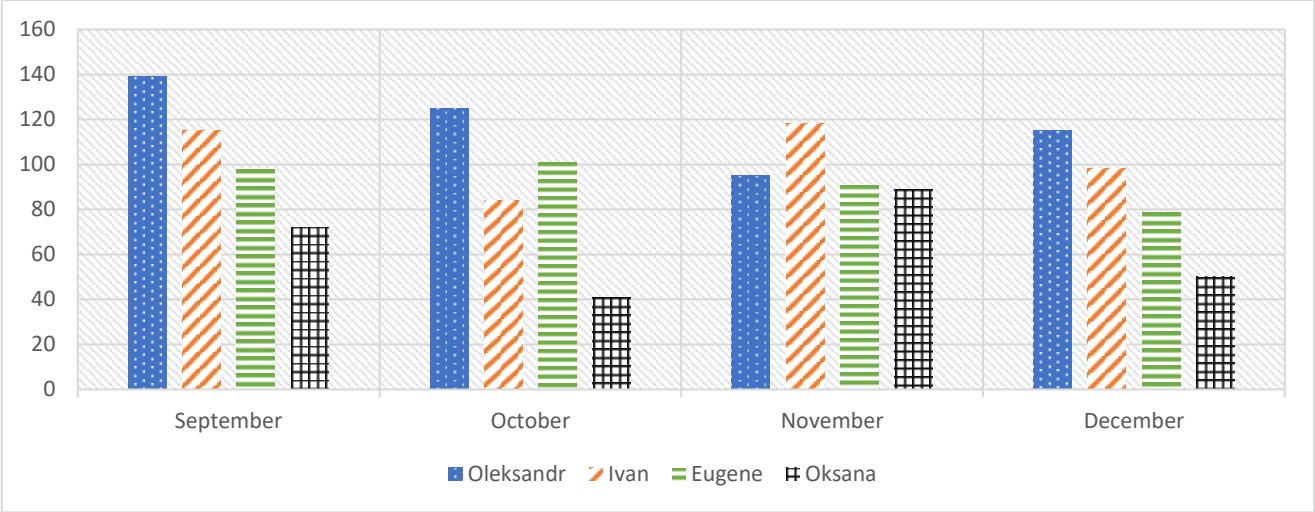

Figure 12. Sample Resource Histogram for Unequal Distribution of Man-Hours

A start-up diagram can be used to manage project quality. It is also called a line or cycle sequence diagram and is used to show process performance over time (Figure 13). Process results or deliverables are plotted in chronological order over time. The data points are plotted over time (days) and connected by a line; they indicate a trend. Increasing or decreasing trends, cycles and large outliers can be detected and investigated further by project managers. When multiple variables are tracked on the same chart across multiple lines, each variable has its own line; the chart is then called a multiple run chart (Shankar, 2010, sap).

Before interpreting the trigger diagram, it is necessary: firstly, to analyse the actual data over a considerable period of time so that the "normal" range of variation is evident. This demonstrates whether the improvement in the outcome is temporary or systematic; second, whether the recent data are within the normal range of variation; and third, correspondences in daily, weekly, monthly and annual charts should be found.

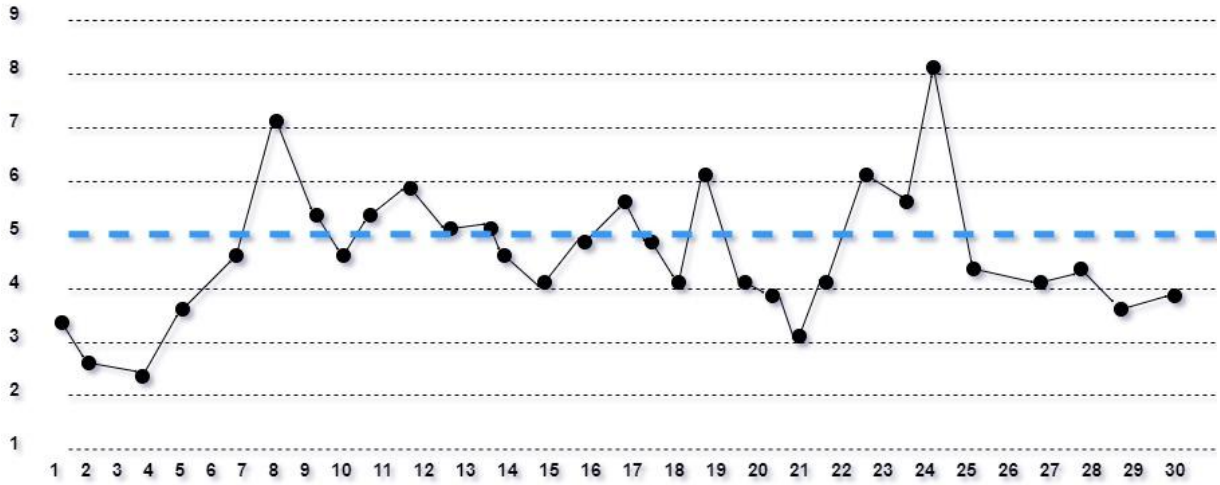

Figure 13. Start-up diagram (line diagram or cycle sequence diagram)

An effective tool for analysing different kinds of problems as well as costs and making decisions is the Pareto diagram. This tool is widely used and easy to understand, and is very common for quality control. A Pareto diagram is used to separate several vital tasks (resources) from trivial ones. It works on the principle that when several factors influence a situation, they account for most of the influence. So, the tool is useful when there are many problems or causes and one wants to focus on the most significant and most dominant ones.

A Pareto diagram arranges data in a way that makes the relative importance of data categories apparent to the user. Only objective data should be used when applying this tool. It is created as a histogram, where the length of the bars represents frequency, cost, time, or money, and are arranged with the longest bars on the left and the shortest on the right. Generally, the left vertical axis represents frequency, cost, or other important indicator, and the right vertical axis represents cumulative frequency, total cost (Baca and Jansen, 2003, pp. 121). The horizontal axis represents categories or groups. Follow the steps below to create the diagram:

– first list all the problems and group them together. After that, specify the categories to be used for grouping.

– identify the relevant dimensions. Common measurements are frequency (how often a problem occurs), quantity (how many performers are needed to complete the job), cost (how many resources are needed) and time (how long it takes);

– define the time period to be covered by the Pareto diagram (e.g.: work cycle, one whole day, week, etc.)

– determine the frequency data for each category or group. Make a subtotal for each group;

– to plot the histogram, determine the appropriate scale. The maximum value will be the largest subtotal. Mark the scale on the left side of the chart;

– draw the columns for each group, then place the group with the highest frequency (the highest bar) at the edge on the left, and then the next highest on the right, and so on. If there are many groups with small dimensions, they can be grouped as "different" or "other" (Shankar, 2010, pp. 103).

By the way, note that the following steps are optional:

– calculate the percentage for each group as the subtotal for that group divided by the total for all categories. Mark the correct vertical axis and label it with the percentages. Ensure that the two scales are congruent; for example, the figure on the left corresponding to half should be the exact opposite (50%) on the scale on the right;

– calculate cumulative sums. Add intermediate totals for the first and second groups and dot above the second bar that indicates this sum. Add the subtotals for the third group to this total and dot the third column of this new total. Continue the process for all columns. Connect the points starting at the top of the first bar. The last point should reach 100% on the desired scale.

Note that after outlining a horizontal line at the 80 percent mark and dropping a vertical line from the point where the horizontal line 80 percent touches the curve, then the categories to the left of the vertical line represent vital factors and those to the right are trivial (Figure 14). This is called the "80/20 rule," meaning that 80 percent of defects or problems are caused by 20 percent of the contributing factors. Consequently, one should focus on the vital 20 percent of the causes.

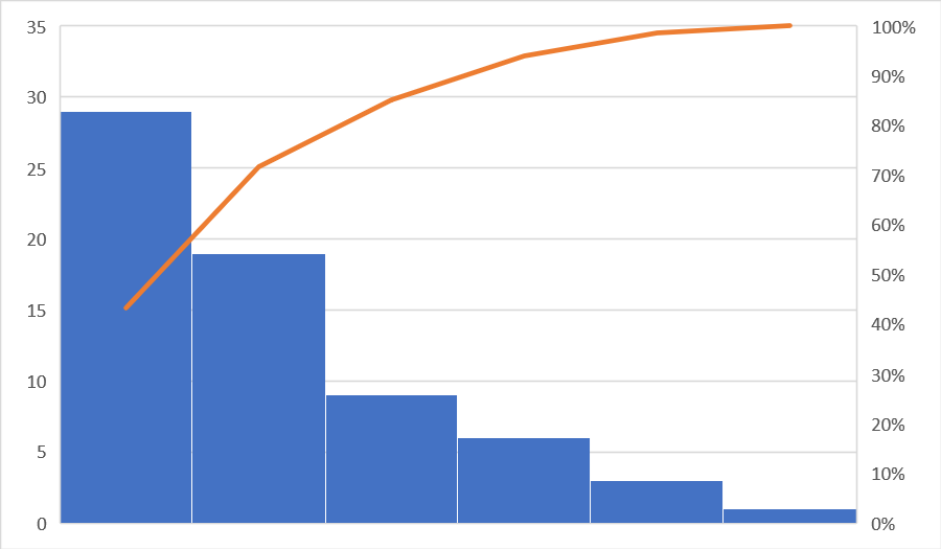

Figure 14. Pareto diagram

There may be many different reasons why defects occur in a project. These should be carefully, appropriately grouped: those that cause few defects are grouped into the 'other' category. The diagram can place the following condition on management or the project team: most defects (80 percent) will be eliminated if the root causes of "unskilled resource" and "oversight" are eliminated. Therefore, rather than developing methods to prevent accidental defects, it is worth focusing on eliminating the more significant causes. There is always a mismatch in the number of issues, resources and budget available for a project. Consequently, to achieve maximum benefit by using time, resources and budget more efficiently, you need to perform this exercise and then properly leverage resources. In doing so, be clear about which group should be targeted first, as sometimes there may be other considerations that are not so obvious to the project manager. Use brainstorming and a cause-and-effect diagram to find the root cause. When the root cause is known, do the Schuchart-Deming cycle, or PDCA (plan-do-check-act), to fix the problem. Note that the Schuchart-Deming cycle is a continuous process improvement model. It is universal and aims to effectively manage all activities on a project basis (Shankar, 2010, pp. 103).

A pie chart is used to represent the contribution of project implementers. It is circular and looks like a circle divided into many parts from the centre. The circle represents all data, while each slice or sector represents a different class or group as a whole. The length of each arc (in a two-dimensional diagram) or the area of each sector (in a three-dimensional diagram) is equal to the proportion it represents compared to the entire data set (Shankar, 2010, pp. 103). The use of colours provides an improved visual presentation. There is a lot of software for creating pie charts, the most popular being Microsoft Excel, Word (Figure 15).

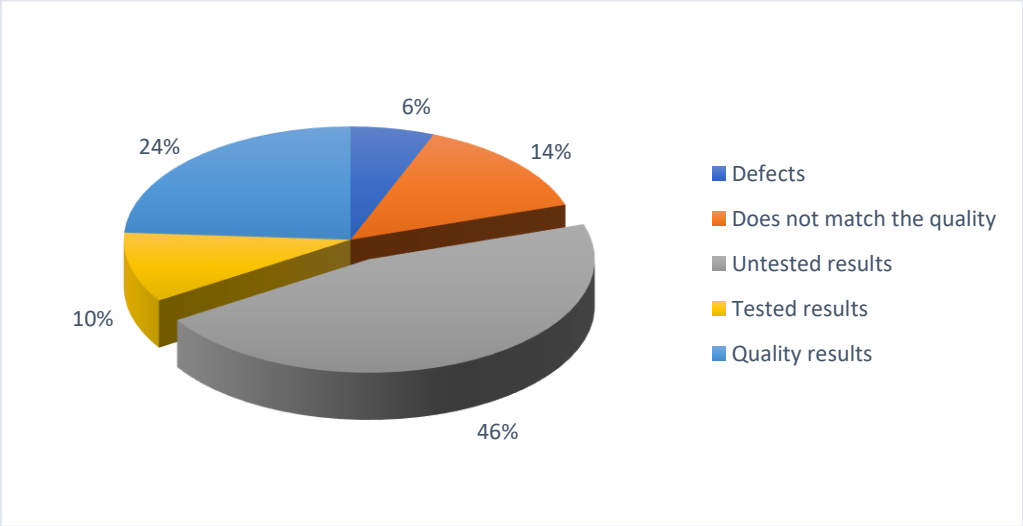

Figure 15. Sector diagram

A diagram in a sector is used when comparing the size of one sector to the size of the whole diagram. It demonstrates the information particularly well if the sectors represent 25-50 percent of the total data. Smaller sectors can be aggregated with each other according to certain criteria. Note that in other cases graphs, bar charts, point charts or a non-graphical method such as tables can be used to present information.

A disadvantage of the pie chart is that it is difficult to read. For example, comparing different sections of a pie chart to each other, or comparing data in different pie charts, can be very difficult. Given this, it is not recommended to use a pie chart in such situations, and a bar chart is more appropriate. However, it is worth using this chart to demonstrate identified defects or quarterly cost allocation. It can be easily customised by presenting the information through a three-dimensional or two-dimensional chart, and, if necessary, presenting the data as percentages or absolute values. Depending on the need and situation, charts can be modified to make them more suitable and better for visual presentation of information.

A powerful tool for managing statistical processes is the control chart. It is used to check the stability of the process in any activity and to improve it. The project uses many resources for predictability and consistency in the delivery of outputs and outcomes (Figure 16).

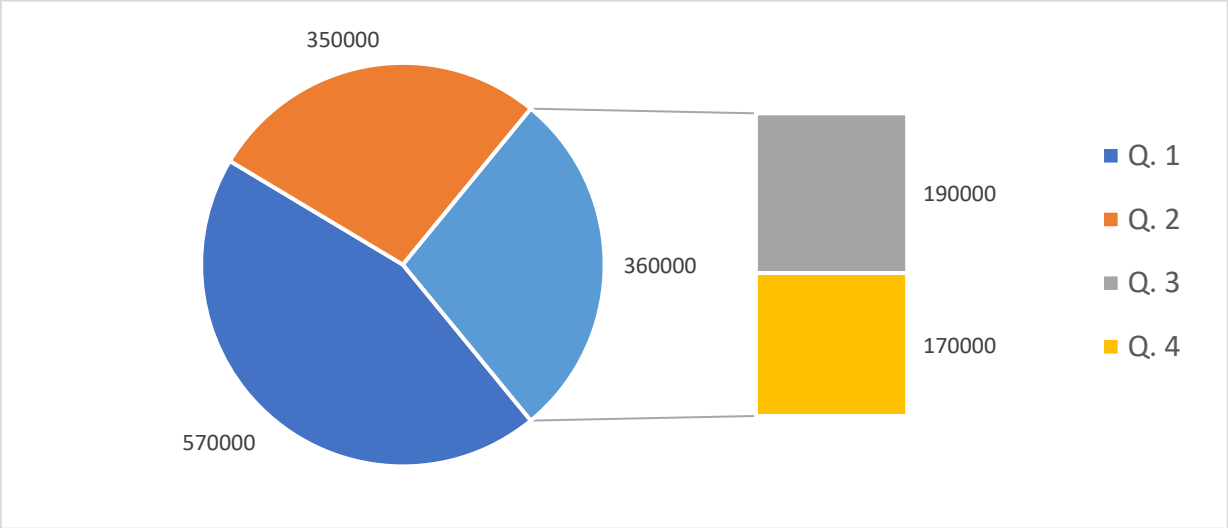

Figure 16. Section diagram

Using an appropriate control chart, results should be continuously monitored to distinguish the specific causes of variation from the general ones and, by examining them, to establish how the process changes over time. Note that several varieties of this tool are used in different situations. Here are the characteristics of a stable task (process): first, all causes that induce variations are known; second, variations are available; third, the process is governed by common causes of variation; fourth, the outcome of the process is largely predictable.

Let us disclose situations in which a control chart should be used: first, controlling ongoing processes by finding and correcting problems as they occur; second, predicting the expected range of process outcomes; third, determining the stability of a process (in statistical control); fifth, analyzing patterns of process change from special causes (irregular events), or common causes (embedded in the process); fifth, establishing the inherent quality improvement (Shankar, 2010, pp. 105).

Therefore, it is important to understand the concept of common and special causes of variation. The common cause, is the variation occurring in the process itself; it cannot be easily eliminated without significant investment. These are variations in output caused by unknown factors and result in a stable but random distribution around the midline in the trigger diagram.

Common cause provides a measure of the potential of a process, in other words, it indicates how well the process would perform in the absence of specific causes of change. It is also known as random variation, noise, uncontrolled variation, intra-group variation and intrinsic variation. Here are some examples of common causes:

- the unsatisfactory condition of the workplace;
- bad design;
- poor quality raw materials;
- inappropriate quality control procedure;
- incompetent workforce;
- variability in the final product settings;

- unqualified maintenance of machinery.

A special cause is a circumstance caused by a particular problem that is unpredictable, new, or previously neglected in the project system. This type of variation is unpredictable and always unexpected. Variations caused by these causes can be easily detected and eliminated. Examples of a special cause are:

- lack of technical skills;
- lack of knowledge;
- lack of appropriate type of infrastructure;
- bad design;
- change in the job (process);
- insufficient resource base;
- computer glitch;
- unplanned vacations of a large number of employees (Shankar, 2010, pp. 105-106).

In the context of the control chart, note that data can be classified into two types:

- variable data. Anything that can be measured is called variable data. They are also called quantitative data. Variable data are measured in quantitative units and answer the question "how much?" Examples of variable data are variance, percentage of change in a graph, weight, etc;
- attribute data. These are unmeasured data representing their lowest level and are purely binary in nature, which unilaterally answers the question: good or bad; yes or no. Attribute data is qualitative data that needs to be taken into account for accounting and its analysis. This will answer the question "how much". For example, attribute data can include the number of defects, the presence or absence of necessary product information, error correction, acceptance or rejection of decisions, etc.

Here is another type of control chart. Note that it always has a center line for the mean (CEN), an upper line for the upper control limit (UCL) and a lower line for the lower control limit (LCL) (Adedeji, 2008, pp. 98) (Figure 17). By comparing the current data with these lines, it is possible to conclude whether the process variation is consistent (controllable) and or unpredictable (uncontrollable, which occurs under the influence of special causes, changes).

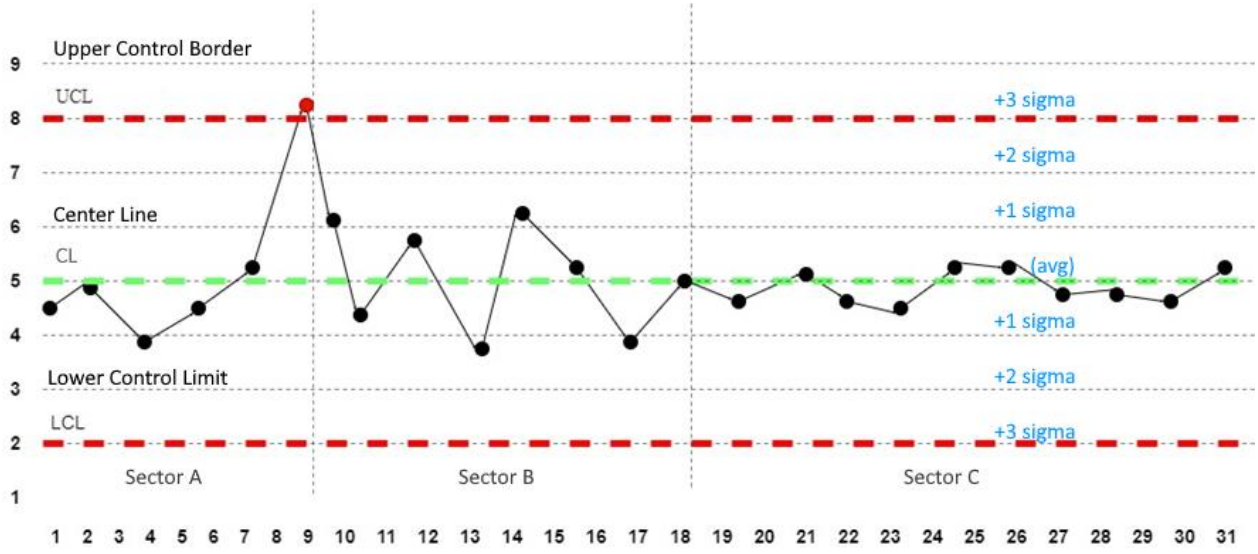

Figure 17. Control chart with center and upper and lower control lines

Variable data control charts are used in pairs. The upper chart tracks the average or centralization of the distribution of data from the process. The lower chart tracks the range or width of the distribution. Attribute data control charts are used as one chart. Different types of control charts are available for both of these data types (Baca and Jansen, 2003, pp. 120).

The control chart in Figure 17 has three sections. "Section A" shows one point outside the UCL. This indicates that there is a source of particular variation and it needs to be analyzed and the cause of the variance determined. The data points outside the control are noticeable, which asks the search for inconsistencies. Let's pay attention to "section B" of the diagram, all its points lie within the control, hence have only common causes of variance.

In "section B" the trend of the results of project activities is more predictable and runs smoothly. This proves that the process improvement has worked, the process has become stable, and the future performance of the process is predictable. Consequently, eliminating the specific causes of variation will make sustainable control action possible, and process improvement will reduce variation and shift the control boundary towards the process centerline.

Note that the UCL and LCL are not specification boundaries. The control limits are calculated based on process performance, and the specification limits are based on customer or organizational requirements.

Let's pay attention to the dotted lines (Fig. 17) that cross the whole table, these are the control limits that distinguish the control chart from a simple line chart or execution chart. Their main purpose is to help determine the stability of the design problem (process)

Control lines are calculated based on the design data for a particular task.

In a stable process, 68.3% of the data points should be within ± 1 sigma, 95.5% of the data points should be within ± 2 sigma, and 99.7% of the data points should be between UCL and LCL.

To determine the control limits, a center line (CL) equal to the mean or median of the available data must be calculated. The sigma is then calculated using a formula that depends on the type of data and the sigma lines (± 1 sigma, ± 2 sigma, and ± 3 sigma from the center line). Thus, the extreme lines are +3 and -3 sigma's, which are at the upper, lower reference limits (Charts, C. and KnowWare International).

The data for sigma can be: continuous or discrete; sampling volume static or dynamic. There is a different sigma formula for each type of data, and therefore a different type of control chart. There are seven basic types of control charts (c, p, u, np, individual variable range graph, XmR, X bar R and X bar S), and many other variations for special cases. Among them, the following formulas for:

p diagram (1)	an individual variable range graph (2)	X bar R diagrams (3)
$UCL = \bar{p} + 3\sqrt{\left(\frac{\bar{p}(1-\bar{p})}{n_i}\right)}$	$UCL = \bar{X} + E_2\bar{R}$	$UCL = \bar{\bar{X}} + A_2\bar{R}$
$CL = \bar{p} = \sum p_i \Big/ \sum n_i$	$CL = \bar{X} = \sum_{i=1,k} X_i \Big/ k$	$CL = \bar{\bar{X}} = \sum_{i=1,k} \bar{X}_i \Big/ k$
$LCL = \bar{p} - 3\sqrt{\left(\frac{\bar{p}(1-\bar{p})}{n_i}\right)}$	$LCL = \bar{X} - E_2\bar{R}$	$LCL = \bar{\bar{X}} - A_2\bar{R}$

A project communication tool that allows stakeholders to understand its organizational hierarchy, escalation levels and communication pathways is an organizational chart (Figure 18). It allows team members, clients, and management to understand who is working on the project and what their roles are in it. A project organization chart is different from a company organization chart (Benjamin, 2018, pp. 22). The nature of project organization is temporary and dynamic. A complete diagram should reflect not only the organization of the project team, but also its management team and committee, the organization of the key customer and supplier, and the organization of any other team with which the project interacts. If the diagram becomes too complex and large, it can be broken down into smaller diagrams.

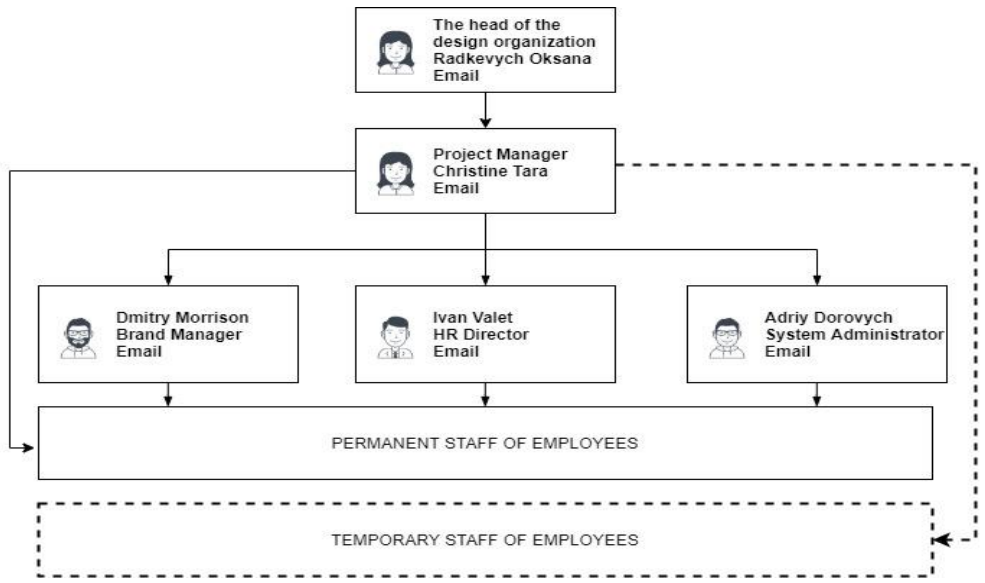

Figure 18. Organizational chart

It is worth using Microsoft Visio to create organization charts. With the help of dotted rectangular frames, the program provides a function for showing the operation of commands separately. Note that color coding is used to identify and display different commands. The diagram is hierarchical in structure, starting at the highest or highest level and branching down to the lowest level. A solid line shows a direct relationship between a supervisor and a subordinate. An indirect communication or relationship is usually shown with a dotted line (arrow). An organizational chart of a project avoids confusion and saves time, and because team members understand the roles and structure of the organization, they are referred to the appropriate person when needed. This helps significantly on large projects where multiple organizations are involved and the team composition is very large and dynamic. The scheme also makes it quicker to identify insufficient numbers of project performers and how the team could use additional staff. By looking at the organization chart, you can assess the complexity of the project and its communication challenges. Such a tool is particularly useful for new entrants as they can better understand the communication paths and hierarchy of the project by looking at the project organization chart.

Conclusions. In project activities, it is important to communicate complex information in a concise format, succinctly to save time and resources. This is possible by using diagrams, charts and graphs that present information in a graphical form. This avoids the use of complex tables and vast amounts of text. Taking into account the fact that a significant number of teachers in vocational education institutions are practically visual learners, this allows demonstrating what should be worked on, what resources should be used in the process and at what pace of accomplishing certain project tasks. The use of diagrams, schedules, schemes greatly simplifies project management and makes it possible to control the workload of teaching staff. Differentiation of primary and secondary information contributes to the construction of a hierarchy of project data and makes it impossible to distribute important information prematurely.

Within the scope of the research objective analyzed: Gantt chart, which is presented as a bar chart for consistently highlighting information, particularly human resources in the project; a flow chart illustrating the progress of any process from general information to project tasks, graphically depicting the steps that need to be taken to complete a particular project task; "S" curve, in terms of representing the base or actual cumulative cost; bar chart - to identify trends, making comparisons and summarizing the load Pie chart is analyzed, it is used to show the contribution of individual elements to the total project; control chart to check the stability of any project process with and without control limits; organization chart to help understand the organizational hierarchy, escalation levels and communication paths in the project. Based on the above, we can conclude the importance of meaningful and concise presentation of graphic information, which positively affects the quality of the final product.

The problem of communication management in project management of vocational education and training institutions should be considered as a prospect for further scientific research.

List of references

Радкевич, В., Бородієнко, О., Пуховська, Л., Самойленко, О., Радкевич, О., Базелюк, Н. 2020. *Проєктна діяльність у системі професійної (професійно-технічної) освіти*, м. Житомир, "Полісся"

Радкевич, О., 2020. Комунікація в проєктній діяльності педагогічних працівників закладів професійної освіти, *Professional Pedagogics*. [online] 2(21), с. 129–136. doi: 10.32835/2707-3092.2020.21.129-136.

Радкевич, О., 2011. До розуміння персональної інформації та персональних даних, *Інформаційні технології в глобальному управлінні: Матеріали наук.-практ. конф.* Київ, Україна, 29 жовтня 2011. Київ.

Adedeji, B. 2008. *Triple C Model of Project Management: Communication, Cooperation, and Coordination*. United States of America. CRC Press

Baca, C. and Jansen, P. 2003. *PMP: Project Management Professional Workbook*. Sybex. Toronto

Benjamin, L. 2018. *Communicating project management: A Participatory Rhetoric for Development Teams.* United States of America. Taylor & Francis

Charts, C. and KnowWare International, I. 2021. *Control Limits are the Key to Control Charts*. Available at: <https://www.qimacros.com/free-excel-tips/control-chart-limits/> [Accessed: 4 October 2021] [in English].

Dan, B. 2006. *Project Management for Modern Information Systems*. United States of America. IRM Press

Radkevych, O., 2019. Project management software in the field of professional (vocational) education, *Professional Pedagogics*. [online] (2(19), pp. 124–132. doi: 10.32835/2223-5752.2019.19.124-132.

Shankar, J. 2010. *The project manager's communication toolkit.* United States of America. CRC Press

Translated & Transliterated

Radkevych, V., Borodiienko, O., Pukhovska, L., Samoilenko, O., Radkevych, O., Bazeliuk, N. 2020. *Proektna diialnist u systemi profesiinoi (profesiino-tekhnichnoi) osvity [Project activities in the system of professional (vocational) education]*, m. Zhytomyr, "Polissia"

Radkevych, O., 2021. Komunikatsiia v proektnii diialnosti pedahohichnykh pratsivnykiv zakladiv profesiinoi osvity [Communication in project activities of the teaching staff in vocational education institutions], *Professional Pedagogics*. [online] 2(21), s. 129–136. doi: 10.32835/2707-3092.2020.21.129-136.

Radkevych, O., 2011. Do rozuminnia personalnoi informatsii ta personalnykh danykh [To understand personal information and personal data], *Informatsiini tekhnolohii v hlobalnomu upravlinni: Materialy nauk.-prakt. konf.* Kyiv, Ukraine, 29 zhovtnia. Kyiv.

Adedeji, B. 2008. Triple C Model of Project Management: Communication, Cooperation, and Coordination. United States of America. CRC Press, [in English]

Baca, C. and Jansen, P. 2003. PMP: Project Management Professional Workbook. Toronto, Sybex, [in English]

Benjamin, L. 2018. Communicating project management: A Participatory Rhetoric for Development Teams. United States of America. Taylor & Francis, [in English]

Charts, C. and KnowWare International, I. 2021. *Control Limits are the Key to Control Charts*. Available at: <https://www.qimacros.com/free-excel-tips/control-chart-limits/> [Accessed: 4 October 2021] [in English].

Dan, B. 2006. Project Management for Modern Information Systems. United States of America. IRM Press, [in English]

Radkevych, O., 2019. Project management software in the field of professional (vocational) education, Professional Pedagogics. [online] (2(19), pp. 124–132. doi: 10.32835/2223-5752.2019.19.124-132. [in English]

Shankar, J. 2010. The project managers communication toolkit. United States of America. CRC Press, [in English]

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ДІАГРАМИ, ГРАФІКИ ТА СХЕМИ ЯК ІНСТРУМЕНТАРІЙ ПРЕДСТАВЛЕННЯ ПРОЄКТНОЇ ІНФОРМАЦІЇ

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Реферат:

Актуальність: У проєктній діяльності необхідно оперувати великим масивом числових даних із різних проєктних завдань, що обтяжує комунікацію між виконавцями. Додає складності значна кількість проєктної інформації, що може бути неправильно поданою, а тому й незрозумілою для проєктних виконавців. Це створює комунікативні бар'єри, допоки доповідач не пояснить суть процесу, зобразивши діаграму, схему чи графік. З огляду на це, графічна подача інформації про проєкт, не замінюючи текстового представлення, є доцільною і значно пришвидшує розуміння принципів його виконання.

Мета: дослідити роль діаграм, графіків та схем як інструментарію представлення проєктної інформації.

Методи: теоретичний аналіз наукових джерел – для з'ясування стану дослідженості цієї проблематики в України та за її межами; порівняння – з метою вивчення наукових підходів до розв'язання проблеми; синтез прогресивного досвіду – для представлення проєктної інформації у вигляді діаграм, графіків та схем.

Результати: досліджено діаграму Ганта як гістограму для послідовного представлення інформації. Розкрито блок-схему, що ілюструє перебіг будь-якого процесу від загальної інформації до проєктних завдань. Висвітлено специфіку Кривої S, як для представлення базової чи фактичної кумулятивної вартості, так і порівняння цих двох показників у часі. Проаналізовано *стовпчасту діаграму*, що використовується для порівнянь та узагальнення груп даних. Розкрито характеристики *ресурсної гістограми* – для планування управління персоналом. Приділена увага *діаграмі запуску*, що використовується для управління якістю та відображає продуктивність представлення проєкту в часі.

Особлива увага приділена *діаграмі Парето*, згідно з якою забезпечується аналіз існуючих проблем у проєктній діяльності та прийняття рішень щодо контролю її якості. Проаналізовано *секторну діаграму*, яка використовується для показу вкладу окремих елементів у загальну суму проєкту. *Контрольна діаграма* – для перевірки стабільності будь-якого проєктного процесу як з контрольними межами, так і без них. Висвітлено основні складові *організаційної схеми*, що дає змогу зрозуміти організаційну ієрархію, рівні ескалації та шлях спілкування в проєкті.

Висновки: здійснений аналіз діаграм, графіків та схем як елементів проєктної комунікації засвідчив позитивний вплив графічної складової на комунікаційний процес.

Ключові слова: *проєктна комунікація, діаграма Ганта, блок-схема, крива S, стовпчаста діаграма, ресурсна гістог-рама, діаграма запуску, діаграма Парето, секторна діаграма, контрольна діаграма, організаційна схема.*

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CONTENT AND STRUCTURE OF WEB-PLATFORM "PARTNER SPACE "015"

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Abstract.

Relevance: the need to develop a web platform for communication of participants in the educational process is determined by the objectives of balanced development and improvement of the system of vocational (technical) education on the basis of partnership and interaction.

Purpose: substantiation of the content and structure of the web platform "PARTNER SPACE "015".

Methods: theoretical (analysis, synthesis, generalization); empirical (methods of self-assessment; expert evaluation).

Results: the content was selected and the structure of the web platform was developed, which will contribute to the establishment of stable links of all participants of the educational process, building effective communication of teachers who implement educational programs to train teachers of vocational education, management and teaching staff of vocational institutions, applicants for education, improving the quality of education.

Conclusions: the developed structure of the web platform "Partner space "015" allows to implement a systematic approach to development of pedagogical interaction, meet the needs of participants in the educational

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process and other stakeholders. It will help to ensure multi-vector communication between students, teachers and stakeholders; implementation of mechanisms of interaction of stakeholders in the training of teachers of vocational education institutions; creating conditions for professional development of teachers and exchange of their experience. The presented platform provides the possibility for the interaction between students of higher education institutions in the specialty 015 "Vocational Education", teachers of higher education institutions, vocational and professional pre-higher education and employers - representatives of personnel services of enterprises, institutions, organizations, specialists who want to become teachers of vocational education and professional pre-higher education, representatives of state and local authorities, public organizations, heads of institutions of higher, professional (vocational and technical) and professional pre-higher education institutions.

Keywords: *educational web platforms, vocational education, institutions of vocational education, educational environ-ment.*

Introduction. The success of training of future professionals in the institutions of vocational insstitutions necessitates continuous improvement of professional competence of teachers. To do this, it is important to reconcile the requests and expectations of vocational institutions, the motives of future teachers and competencies that are formed in the process of education, as well as the motives of professional development of teachers of vocational and professional pre-higher education (Radkevych, 2021). As a tool to solve this problem, governance is considered on the basis of partnership and interaction by involving vocational institutions in the development of modern educational programs or implementation of innovative teaching methods, which in turn can help create a governance model that goes beyond these two stakeholders (Radkevych and others, 2018; Androschuk, 2017). As decentralization is a key aspect of modern vocational policy and governance based on partnership in vocational teacher training is in line with the political factors. To do this, it is necessary to establish communication between all stakeholders, in particular, through the use of the web platform "Partner Space "015". The development of this platform is envisaged by the Project "PAGOSTE "New mechanisms of partnership-based governance and standardization of vocational teacher education in Ukraine" № 609536-EPP-1-2019-1-DE-EPPKA2-CBHE-SP), which aims to improve governance in the field of teacher training in Ukraine.

Sources. Theoretical analysis of this problem was carried out on the basis of scientific works on network interaction in the development of vocational education (Radkevych V., Borodiyenko O., Pukhovska L., Radkevych O., Bazelyuk N., Leu S.), as well as pedagogical interaction (Androschuk I.). The results of the authors' scientific research testify to the necessity and expediency of developing a web platform for communication between teachers of vocational education. During the development of the structure of the web platform, research on the development of digital culture of teachers, information and digital competence of future teachers of vocational training (Bazelyuk O., Artyushina M., Radkevych O.) was taken into account.

The purpose of the article is to substantiate the content and structure of the web platform "Partner Space "015", created for communication between teachers and students of educational institutions, and the prospects for its operation.

Research methods: theoretical (induction, deduction, synthesis and generalization; modeling); empirical (praximetric (study and analysis of the experience of interaction of vocational education institutions, institutions of professional pre-higher and higher education, which provide training for teachers), questionnaire and diagnostic (questionnaires, interviews, testing, interviews), self-assessment methods, expert evaluation).

Results and discussion. The purpose of the web platform is to improve the quality and relevance of training, retraining, professional development of teachers for vocational education in Ukraine. Web platform Partner space "015" is aimed at providing communication between students, teachers and stakeholders; creating conditions for professional development of teachers and exchange of experience; ensuring the implementation of mechanisms for the interaction of stakeholders in the training of teachers of vocational education.

The web platform target audience is students of higher education institutions in the specialty 015; teachers of institutions of higher, vocational and professional pre-higher education; employers (representatives of personnel services of enterprises, institutions, organizations); specialists who want to become teachers of vocational education, professional pre-higher education institutions; representatives of

state and local authorities, public organizations; heads of institutions of higher, vocational and professional pre-higher education. To improve the quality of training of teachers for vocational and professional pre-higher education institutions, providing communication between students, teachers, employers on the web platform it is necessary to place information about: educational and professional programs of universities that train teachers for institutions of vocational and professional pre-higher education; educational programs for advanced training and internships of teachers of higher, vocational, professional pre-higher education; places of practice for students of higher, vocational and professional pre-higher education; institutions and organizations that provide training and internships for teachers; job search for students/teachers, cooperation with job search platforms; forum for exchange of experience and communications; publication of grant and project opportunities for teacher training, academic exchanges, internships; planning and coordination of communication activities related to education or professional development of pedagogical staff of educational institutions; providing feedback and suggestions for improving the training of teaching and non-teaching staff of educational institutions.

Given the above, the structure of the platform contains eight sections.

Fig.1. Example of header

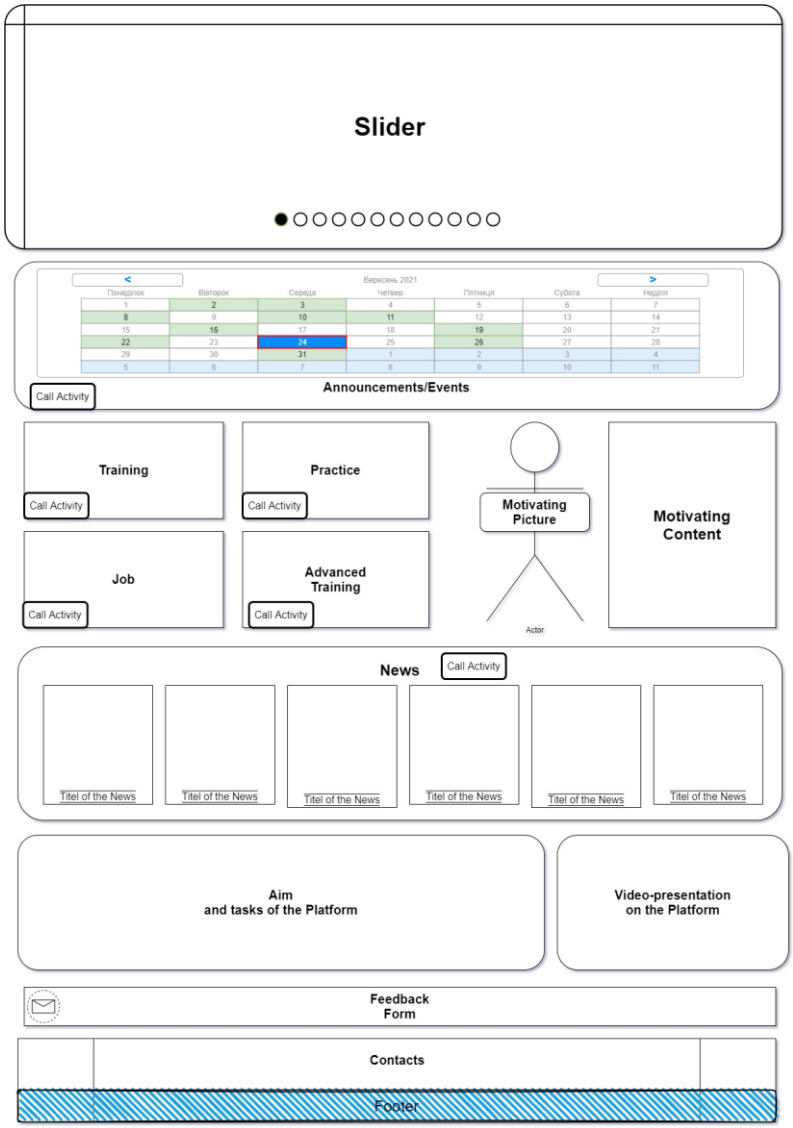

Fig.2. Example of the main page

Section 1. "**Home**" (consists of elements in particular: slider (has a flexible setting of the event as a start and end date, transitions, hyperlinks, etc.), associated with a hyperlink to news or other important material for the administrator, four tiles with a graphic image and related to the relevant categories, calendar (can be both Google calendar and static with the ability to fill it by relevant user groups, news from certain categories, feedback forms and contact information) (see figures 1, 2).

Section 2. "**For Students**" contains:

–**Educational, educational-professional programs** (page with information about educational, educational-professional programs of educational institutions; (see fig.3);

–**Trainings** (the page where information about trainings is presented, has a calendar form) (see fig.4);

–**Projects** (the page on which the information about projects are presented (see Fig. 4, 5);

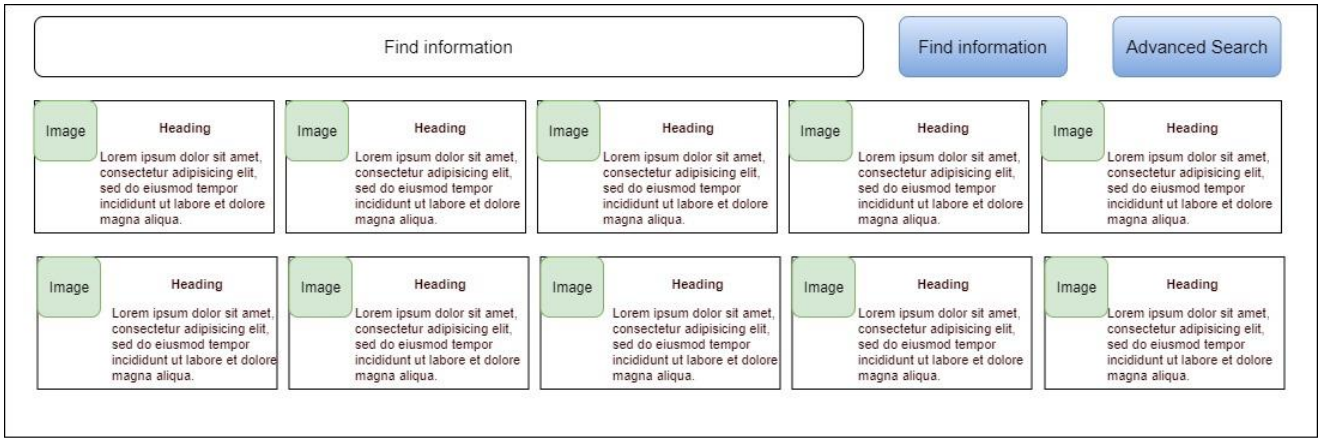

Fig.3. Example of the web-page «Educational, educational-professional programs»

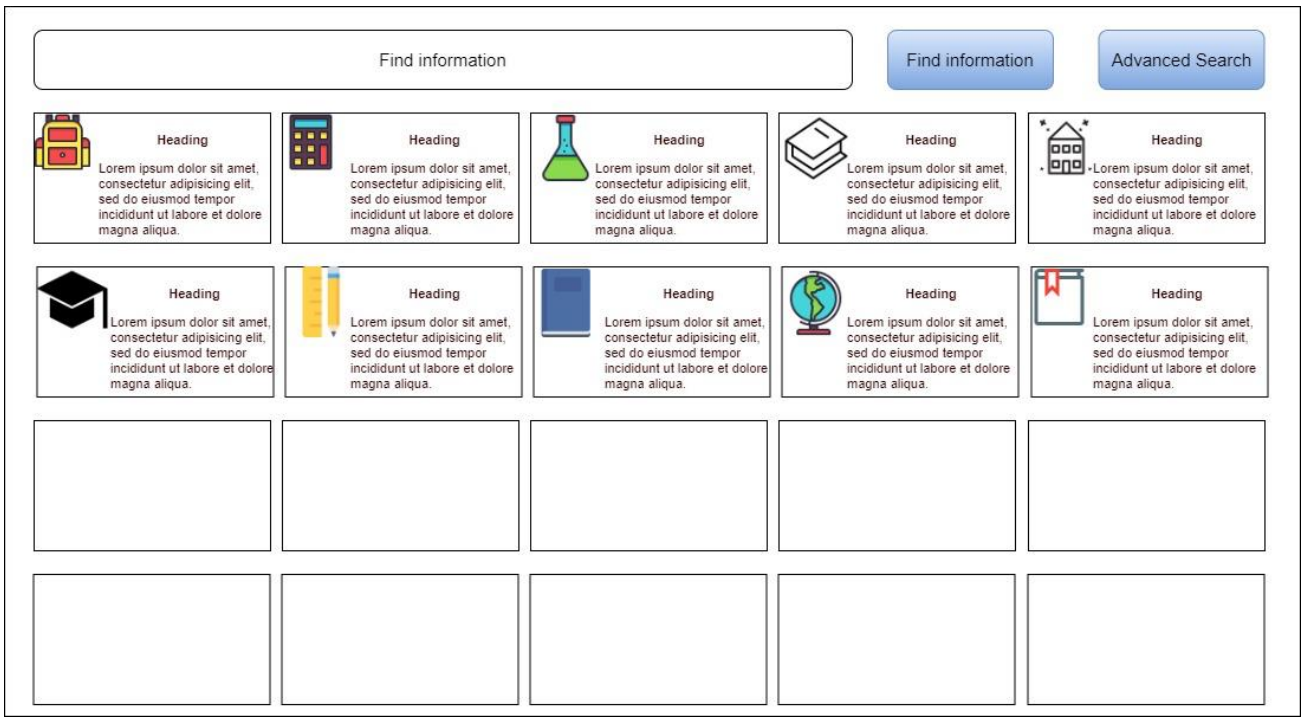

Fig.4. Example of the web-page «Trainings»

–**Grants** (the page on which grants are submitted, has the form of a blog; the number of pages increases according to the amount of content; information about current grants is downloaded by administrators or editors. Information includes: images, text, hyperlinks and the ability to distribute content through social networks (social media distribution buttons) (see Fig.4, 5);

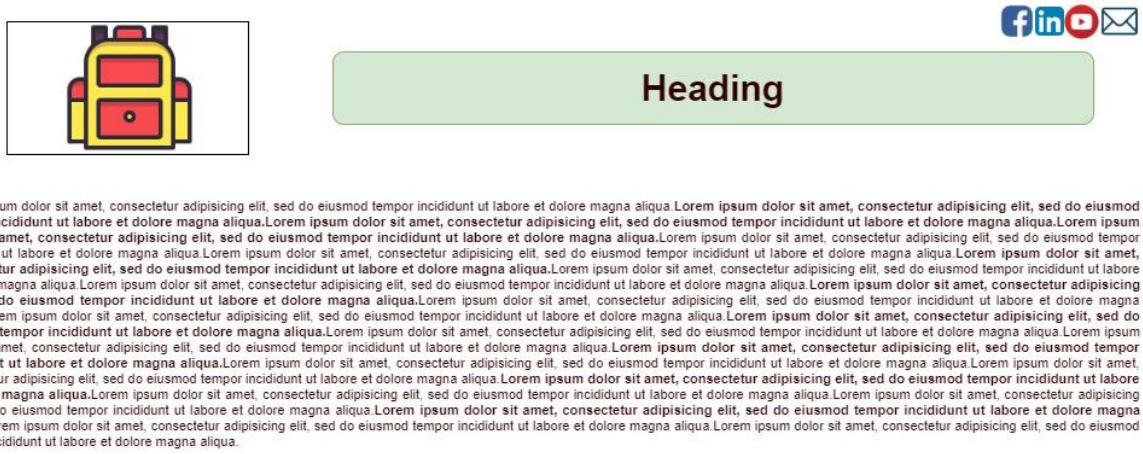

Fig.5. Example of the web-page «Projects»

– **Internship** (a page with information about places of practice. Authorized users (students) can send a request for an internship in the chosen place. Information includes: images, text, hyperlinks and the ability to distribute content through social networks (social media distribution buttons) (see Fig. 6);

– Job page will shows the current job search sites with quick links to them) (see Fig.7).

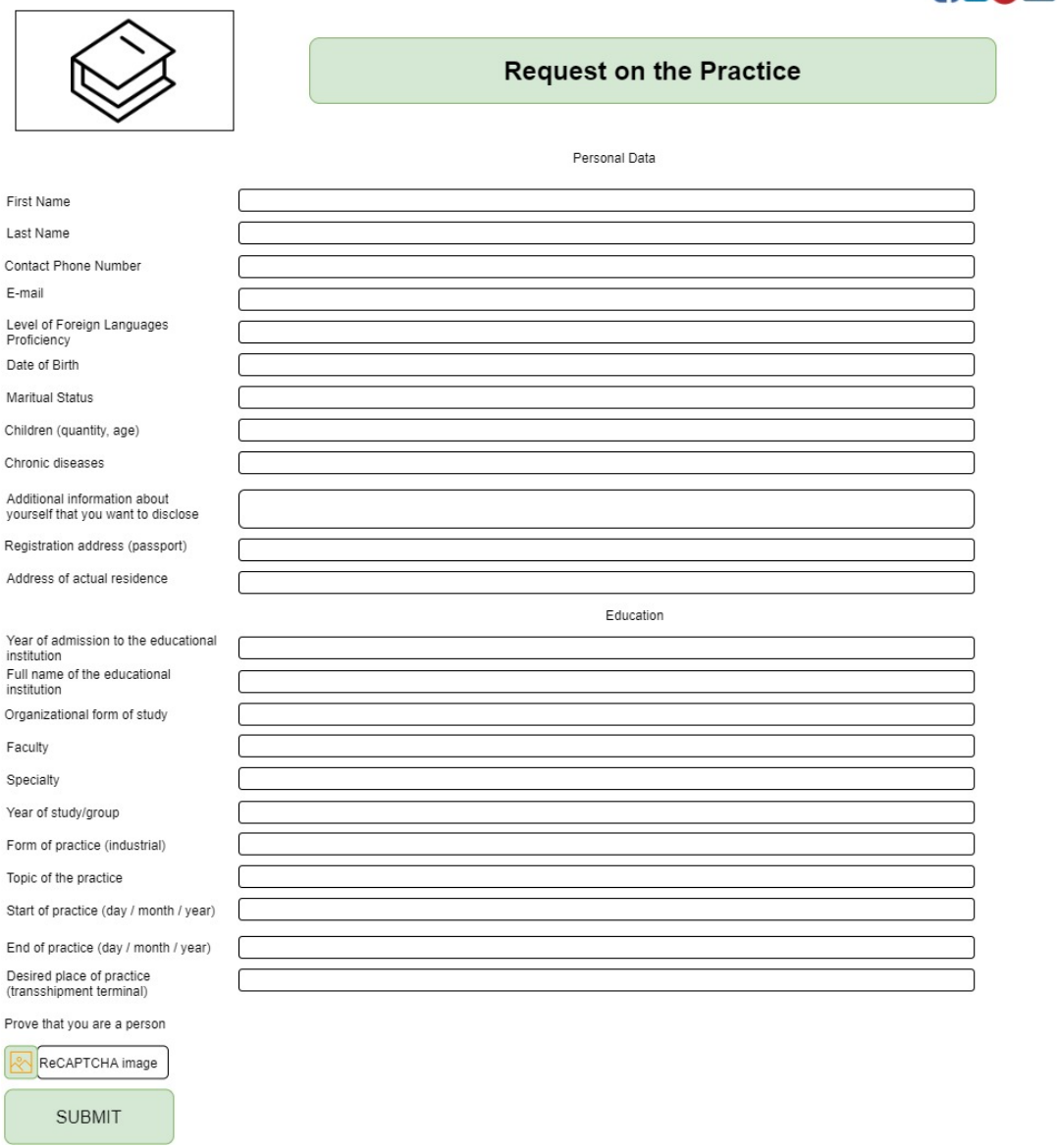

Fig. 6. Example of request on practice

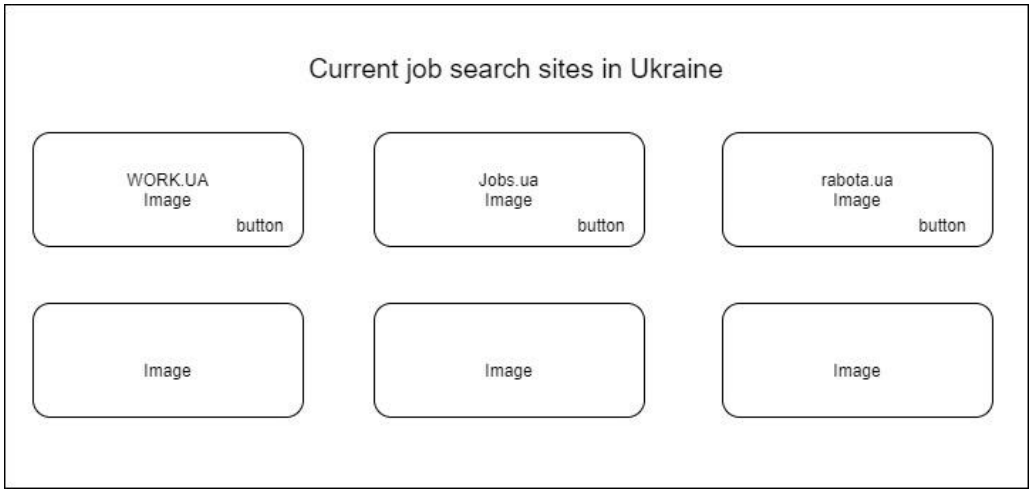

Fig.7. Example of the web page «Job»

Section 3 "**For Teachers**" contains information about:

– Advanced courses (the page where the information about the advanced courses is presented, has the form of a blog (see Fig.4);

– Trainings (the page where information about active trainings is presented has the form of a calendar (see Fig.4);

– Workshops (a page with information about active workshops has the form of a calendar (see Fig.4);

– Internship (the page with information about internship applications has the form of a blog divided into 5 columns and 4 lines (see Fig.4);

– Projects (the page on which the current projects are presented has the form of a blog (see Fig.4);

– Grants (the page on which information about grants are submitted has the form of a blog divided into 5 columns and 4 lines (see Fig.4);

– Work (at the top of the page the user can search by category, according to the specified search parameters; the information from current job search sites are highlighted (work.ua, robota.ua, jobs.ua) (see Fig.4).

Section 4 "**Activities**" contains information on the most important local and international educational events authorized for publication on the web platform (filter of events by tag, category, time; archive of events):

– **Calendar** (calendar with the ability to fill only by administrators or editors, with the ability to subscribe to events and share them on social networks via social buttons; at the top of the page the user can search by category; according to the search parameters the results are highlighted; it is also possible to show all events, which can be sorted by date, to show events up to a certain date) (see Fig.8);

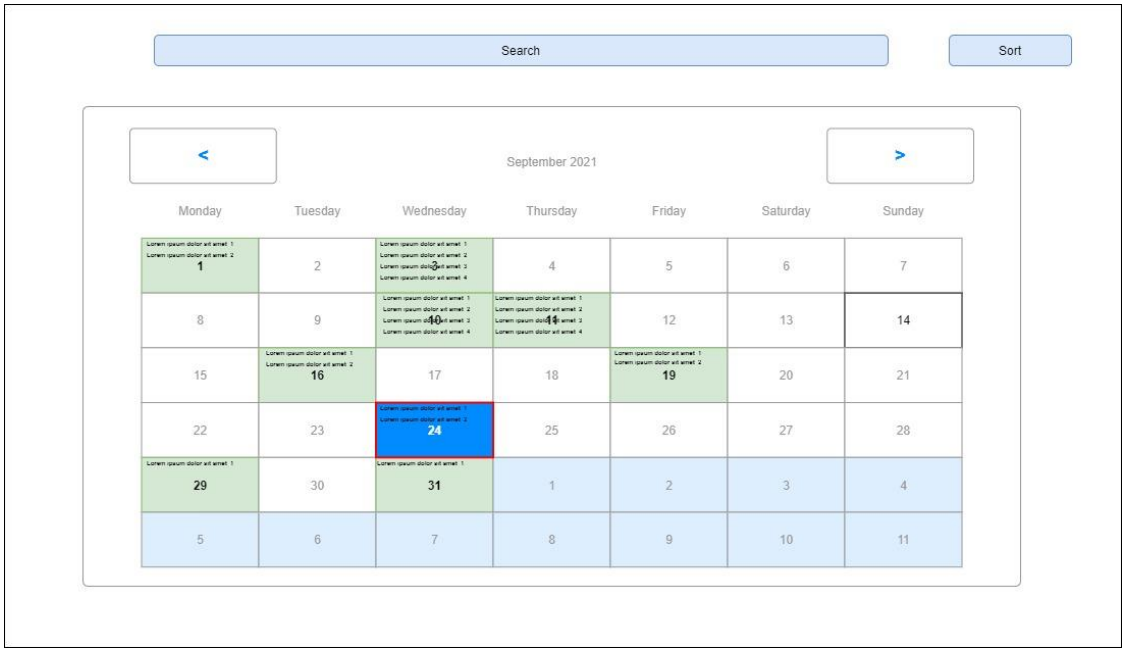

Fig.8. Example of the web page «Calendar»

–**News**. Dynamic content by topic (at the top of the page the user can search by category; according to the search parameters the results are highlighted). It is possible to filter by tag, time. Information includes: images, text, hyperlinks. The content is downloaded by administrators or editors (see Fig.9);

For any news should be able to be attached to static pages (categories). News provides several types of content, depending on which the appearance of their display in abbreviated and complete lists (video, photo or text information) should change.

Section 5 "**Partners**" contains general information about institutions of higher education, professional pre-higher, vocational education, institutions that have signed a memorandum of partnership (see Fig.10).

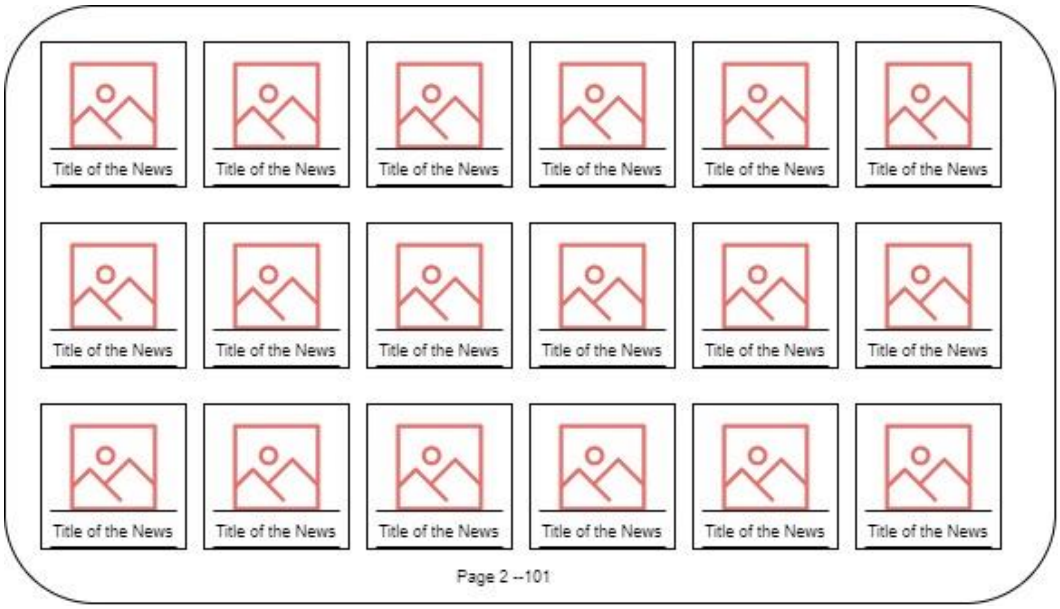

Fig.9. Example of the web page «News»

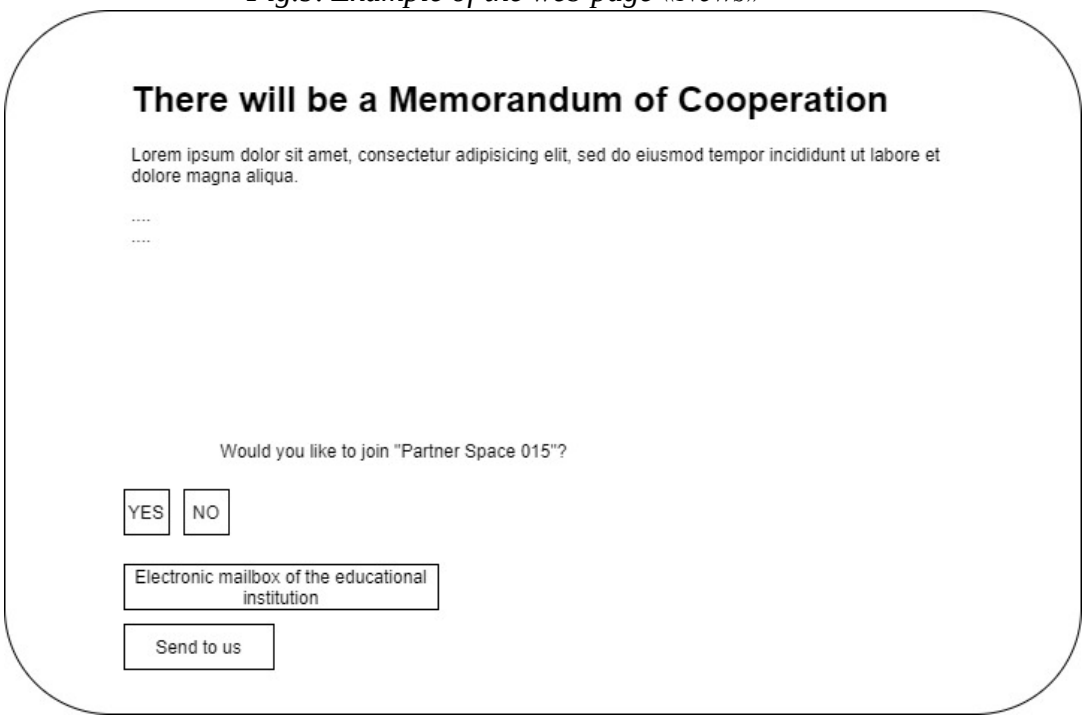

Fig.10. Example of the web page «Memorandum on cooperation»

Educational institutions can (by prior registration and verification) prepare for publication and publish their profiles. Users (guests) can view the profiles and information of educational institutions and add them to favorites (and receive by e-mail all the information generated by the educational institution). An educational institution may create, publish, close, edit, view and delete information created by it.

– **Higher education institutions** (the page with information about higher education institutions looks like a blog divided into 5 columns and 4 lines (see Fig.11).

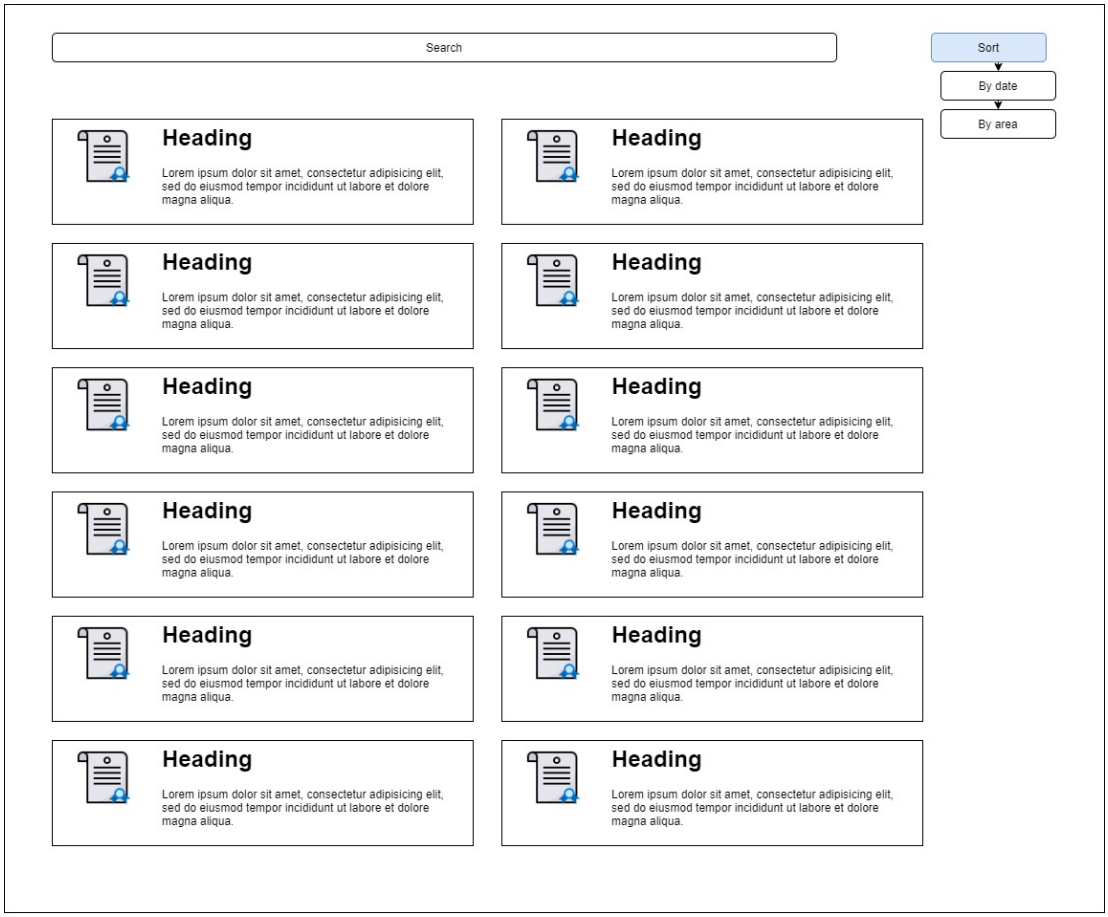

Fig.11. Example of the web page «Institutions of higher education, institutions of professional pre-higher education, institutions of vocational education»

– **Institutions of professional pre-higher education** (the page with information about institutions of professional pre-higher education has the form of a blog divided into 5 columns and 4 lines (see Fig.11);

– **Institutions of vocational education** (the page, which presents information about institutions of vocational education, has the form of a blog divided into 5 columns and 4 lines (see Fig.11);

– **Institutions** (the page where the information about the institution is presented, has the form of a blog divided into 5 columns and 4 lines (see Fig.11).

Section 6 "**Association**" is a section in which there will be an opportunity to create), edit, delete content by the super administrator (Association). It is possible to leave messages, comments, after registration and without registration (required fields: message, name, e-mail). Super administrators, administrators or editors can moderate a forum (create, edit, delete posts, sections) according to the category he/she can moderate.

Section 7 "**Forum**" with categories for students, teachers, events provides the possibility to leave messages, comments, after registration and without registration (required fields: message, name, e-mail). Super administrators, administrators or editors can moderate a forum (create, modify, delete posts, sections) according to the category he/she can moderate.

Section 8 "**Personal account**" appears after user registration and contains:

– Notification Center (notifications) (the ability to communicate with selected authorized users, super administrators, administrators or editors) (internal chat) (here come messages from the category Practice); Super administrators, administrators or editors are notified of the completion of the memorandum of cooperation. The notification center receives information about filling in the evaluation form of the educational, educational-professional program.

– List of requests (from interested persons: authorized users, administrators or editors).

The personal account of the user of the web platform provides the following opportunities:

– register (both in the classic way and through social networks) or sign in if you have already been registered;

– subscribe to selected categories of news, features and other types of dynamic publications and receive notifications about their updates;

– comment on all available information on the site;

– receive other services on the web platform;

– register for an event or course.

The hierarchy of system users presupposes the presence of: external users - visitors of the web platform; internal users (authorized in the administrative panel) of the web platform:

– super-administrators (Ministry of Education and Science of Ukraine; Institute of Vocational Education of the National Academy of Pedagogical Sciences of Ukraine; Association);

– web platform administrators (registered users to whom the super administrator assigns the appropriate role);

– editors (registered users to whom the administrator assigns the appropriate role);

– authorized users.

The main responsibilities of the super-administrator are:

– Full management of accounts and user roles;

– Adding new administrators;

– Removal of administrators;

– Filling and adding new information (content) to the categories: Educational, educational and professional programs; Trainings; Projects; Grants; Practice; Training courses; Workshops; Internship; Calendar; News, etc.;

– Editing the information (content) created by other users;

– Deletion/transfer of the content to the archive;

– All types of settings that are provided by the functionality of the action system in any sections;

– View the log of actions of authorized users (administrators, editors).

The main responsibilities of the administrator are:

– Full management of accounts and roles of editors and authorized users;

– Adding editors with access to the categories: Educational, educational and professional programs; Trainings; Projects; Grants; Practice; Training courses; Workshops; Internship; Calendar; News.

– Filling and adding new information (content) to the categories: Educational, educational and professional programs; Trainings; Projects; Grants; Practice; Training courses; Workshops; Internship; Calendar; News, etc.;

– Editing the information (content) created by editors;

– Deletion/transfer to the archive of the information (content) created by editors;

– All types of settings that are provided by the functionality of the web platform within a certain category;

– View the action log of editors and authorized users of a certain section of the web platform.

The main responsibilities of editors are:

– Filling and adding new information (content) to the categories: Educational, educational and professional programs; Trainings; Projects; Grants; Practice; Training courses; Workshops; Internship; Calendar; News, etc.;

– Creation of new thematic tags, categories of publications, etc.;

– Editing the information (content) created by them;

– Deletion/transfer to the archive of the information (content) created by them.

The main possibilities for authorized users are:

– View all open content of the web platform;

– Send requests for practice;

– Comment on news and other information;

– Creating, editing and deleting their messages on the forum;

– Communication with selected authorized users, administrators, editors via internal chat (Message/Notification Center);

– View requests (from stakeholders: authorized users, administrators, editors).

In order to protect the information circulating on the web platform, it is planned to create a system of information protection. Information is protected by counteracting the threats that can be expected as a result of the violator's actions at all technological stages of its processing and in all modes of operation of the web platform, in accordance with the developed information protection plan.

The set of means of information protection should provide software and hardware implementation of security policy in terms of:

– Prevention of attempts to affect the integrity, confidentiality and availability of information;

– Creation of a mechanism and conditions for prompt response to external and internal threats and prompt notification of web platform administrators about the facts of unauthorized access to information;

– Implementation of control over user actions by web platform administrators;

– Registration and processing of detailed data on events in the system related to information security;

– Ensuring the availability of web platform resources for authorized and unauthorized users.

To ensure security requirements, the structure of the information security system should include: user identification; means of protection of information from unauthorized access; access control and identification tools; means of control, management and identification for remote access to the System; system shielding means; antivirus protection tools in the System; means of anti-virus protection of the System's servers; means of protection against attacks; means of protection against DDOS; patch management process; password policy control; data encryption; detailed logging.

The web platform must comply with the security and other requirements for the websites of government agencies (see http://zakon3.rada.gov.ua/laws/show/z1022-02) and the audit requirements for compliance with the provisions on the protection of information of the State special communication and information protection services of Ukraine. The web platform must comply with the General Data Protection Regulation (EU) 2016/679 ("GDPR") - this is EU legislation on data protection and confidentiality for all persons in the European Union (EU) and the European Economic Area (EEA). This also applies to the export of personal data outside the EU and the EEA.

Conclusions. The developed structure of the web platform "Partner space "015" allows to implement a systematic approach to development of pedagogical interaction, meet the needs of participants in the educational process and other stakeholders. It will help to ensure multi-vector communication between students, teachers and stakeholders; implementation of mechanisms of interaction of stakeholders in the training of teachers of vocational education institutions; creating conditions for professional development of teachers and exchange of their experience. The presented platform provides the possibility for the interaction between students of higher education institutions in the specialty 015 "Vocational Education", teachers of higher education institutions, vocational and professional pre-higher education and employers - representatives of personnel services of enterprises, institutions, organizations, specialists who want to become teachers of vocational education and professional pre-higher education, representatives of state and local authorities, public organizations, heads of institutions of higher, professional (vocational and technical) and professional pre-higher education institutions.

List of references

Radkevych, V., 2021. A scientific platform for assuring quality of professional (vocational) education. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка,* 1(22), с. 104-113.

Radkevych, V., Borodiyenko, O., Kruchek, V., Radkevych, O., 2020. Results of analysis of national survey on current governance in vocational teachers' education in Ukraine. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка,* 2(21), с. 69-82.

Андрощук, І. В., 2017. Педагогічна взаємодія у професійній діяльності: навчальний посібник. Хмельницький: ХНУ, 190 с.

Артюшина, М., 2018. Розвиток інформаційно-цифрової компетентності майбутніх педагогів професійного навчання в галузі економіки. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка,* 17, с. 77-84.

Базелюк, О., 2018. Зміст і структура цифрової культури педагогічних працівників закладів професійної освіти. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка,* 16, с. 81-87.

Радкевич, В., Бородієнко, О., Пуховська, Л., Радкевич, О., Базелюк, Н., Леу, С., 2018. Модель мережевої взаємодії в розвитку системи професійної освіти і навчання в країнах Європейського Союзу. *Науковий вісник Інституту професійно-технічної освіти НАПН України. Професійна педагогіка,* 17, с. 123-135.

Radkevych O. (2017) "VET teachers' and trainers' professional development in the European Union", *Professional Pedagogics,* (14), pp. 133-139. DOI: https://doi.org/10.32835/2223-5752.2017.14.133-139.

Translated & Transliterated

Radkevych, V., 2021. A scientific platform for assuring quality of professional (vocational) education. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific*

Herald of the Institute of Vocational Education and Training of NAES of Ukraine. Vocational pedagogy], 1(22), s. 104-113. DOI: https://doi.org/10.32835/2707-3092.2021.22.104-113, [in English].

Radkevych, V., Borodiyenko, O., Kruchek, V., Radkevych, O., 2020. Results of analysis of national survey on current governance in vocational teachers' education in Ukraine. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine. Vocational pedagogy]*, 2(21), s. 69-82. DOI: https://doi.org/10.32835/2707-3092.2020.21.69-82, [in English].

Androshchuk, I. V., 2017. Pedahohichna vzaiemodiia u profesiinii diialnosti: navchalnyi posibnyk. Khmelnytskyi: KhNU, 190 s., [in Ukrainian].

Artiushyna, M., 2018. Rozvytok informatsiino-tsyfrovoi kompetentnosti maibutnikh pedahohiv profesiinoho navchannia v haluzi ekonomiky [Information-digital competence development for future VET teachers in ecomonic sector]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine. Vocational pedagogy]*, 17, s. 77-84. DOI: https://doi.org/10.32835/2223-5752.2018.17.77-84, [in Ukrainian].

Bazeliuk, O., 2018. Zmist i struktura tsyfrovoi kultury pedahohichnykh pratsivnykiv zakladiv profesiinoi osvity [Content and structure of digital culture of VET institutions' teachers]. Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika, 16, s. 81-87. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine. Vocational pedagogy]*, 16, s. 81-87. DOI: https://doi.org/10.32835/2223-5752.2018.16.81-87, [in Ukrainian].

Radkevych, V., Borodiienko, O., Pukhovska, L., Radkevych, O., Bazeliuk, N. and Leu, S., 2018. Model merezhevoi vzaiemodii v rozvytku systemy profesiinoi osvity i navchannia v krainakh Yevropeiskoho Soiuzu [The networking interaction model in the development of VET in the European Union countries]. *Naukovyi visnyk Instytutu profesiino-tekhnichnoi osvity NAPN Ukrainy. Profesiina pedahohika [Scientific Herald of the Institute of Vocational Education and Training of NAES of Ukraine. Vocational pedagogy]*, 17, s. 123-135. DOI: https://doi.org/10.32835/2223-5752.2018.17.123-134, [in Ukrainian].

Radkevych, O., 2017. VET teachers' and trainers' professional development in the European Union. *Professional Pedagogics*, (14), pp. 133-139. DOI: https://doi.org/10.32835/2223-5752.2017.14.133-139.

УДК [377/378.018.43:004]:372.32:004.9

ЗМІСТ І СТРУКТУРА ВЕБ-ПЛАТФОРМИ «ПАРТНЕРСЬКИЙ ПРОСТІР «015»

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Реферат:

Актуальність: необхідність розроблення веб-платформи для комунікації учасників освітнього процесу визначається завданнями збалансованого розвитку й удосконалення системи професійної (професійно-техічної) освіти далі (П(ПТ)О) на основі партнерства та взаємодії.

Мета: обґрунтування змісту та структури веб-платформи «ПАРТНЕРСЬКИЙ ПРОСТІР «015».

Методи: теоретичні (аналіз, синтез, узагальнення); емпіричні (методи самооцінювання; експертного оцінювання).

Результати: виконано відбір змісту та розроблено структуру веб-платформи, що сприятиме наладженню стійких зв'язків усіх суб'єктів освітнього процесу, побудові ефективної комунікації педагогів, які реалізують освітні програми з підготовки викладачів професійної освіти, керівних кадрів та педагогічних працівників закладів П(ПТ)О і здобувачів освіти, підвищенню якості освіти.

Висновки: Розроблена структура веб-платформи «Партнерський простір «015»» дає змогу реалізувати системний підхід до побудови педагогічної взаємодії, задовольнити запити учасників освітнього процесу та інших заінтересованих сторін. Вона сприятиме забезпеченню різновекторної комунікації між студентами, педагогами та стейкхолдерами; реалізації механізмів взаємодії стейкхолдерів у підготовці педагогів закладів П(ПТ)О; створенню умов для професійного розвитку педагогічних працівників та обміну досвідом. Представлена платформа передбачає участь в ній студентів закладів вищої освіти за спеціальністю 015 «Професійна освіта», викладачів закладів вищої, П(ПТ)О та фахової передвищої освіти і роботодавців, представників кадрових служб підприємств, установ, організацій; спеціалістів, які хочуть стати викладачами закладів П(ПТ)О, фахової передвищої освіти; представників органів державної та місцевої влади, громадських організацій; керівників закладів вищої, П(ПТ)О та фахової передвищої освіти.

Ключові слова: *Ключові слова: освітні веб-платформи, професійна (професійно-технічна) освіта, заклади про-фесійної (професійно-технічної) освіти, освітнє середовище.*

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