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3 FORMATION OF THE PROFESSIONAL TERMINOLOGICAL COMPETENCE OF STUDENTS OF UKRAINIAN HIGHER EDUCATION INSTITUTIONS UNDER CONDITIONS OF EDUCATION DIGITAL TRANSFORMATION

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ABSTRACT

The paper outlines the theoretical foundations and practical aspects of the formation of the professional terminological competence of students of Ukrainian higher education institutions in the conditions of digital transformation of the educational space. The work is annotated in the field of linguistics, pedagogy and teaching methods of professional disciplines on the issue of the nature of the formation of an educational environment focused on professional training, significant obstacles are characterized and prospects for the integration of digital technologies into the system of terminological training of higher education applicants are outlined. Since there is a need to generalize theoretical approaches and develop complex models for the development of terminological competence, especially in the conditions of war in Ukraine, the impact of digital transformation on the educational process is analyzed, the role of digitalization of the educational environment and the use of new technologies in the work of specialists of various profiles is revealed. Modern methodological approaches to the formation of the professional terminological competence of students in various specialties in the conditions of digitalization of education are revealed. The contribution of national and international projects (UkrNLP Corpora, ULIF, SUCHO, Ukraïnica) to the creation of an infrastructure for educational and research activities is analyzed. The feasibility of a complex approach that combines methodological means of learning with access to digital resources and participation in educational and scientific initiatives is proven as a condition for training competitive specialists with a high level of professional terminological and digital competence. The author's model of the formation of the professional terminological competence of students at the Kharkiv National Automobile and Highway University (KhNAHU) is presented, which integrates modern digital technologies, methodological approaches and educational resources.

KEYWORDS

Scientific terminology, professional terminological competence, professional terminology, systematicity of terminology, education digital transformation.

3.1 METHODOLOGICAL APPROACHES TO DETERMINING THE ESSENCE OF THE PROFESSIONAL TERMINOLOGICAL COMPETENCE OF EDUCATION SEEKERS

The current stage of development of the educational sector is marked by the intensive introduction of digital technologies, which significantly transforms approaches to the organization of the educational process. In this regard, it is worth noting that with the rapid development of technologies, especially in the field

of information and communication activities, the emergence of new types of specialization of enterprises, the digitalization of society, the active formation of the information space and the growth of the importance of specialized knowledge necessitate a review of the substantive and methodological principles of professional training of students. One of the leading components of this training is professional terminological competence, which ensures effective professional communication, effective processing of specialized literature, participation in scientific discussions and increases the professional mobility of future specialists.

Professional terminological competence includes knowledge of the terms of a certain field, the ability to correctly apply them in oral and written speech, the ability to interpret terminological units and use them in various communicative situations. In the conditions of education digital transformation, the possibilities for its formation are significantly expanded due to the use of electronic educational materials, interactive platforms, online courses, specialized terminology bases and artificial intelligence tools.

Taking into account the above, it is advisable to substantiate the conceptual scope of the terms "professional terminological competence" and " education digital transformation", which constitute the foundation for further research. Clarifying their meaning allows ensuring adequate use in scientific work.

Despite the fact that today in Ukrainian studies and linguistic didactics there has appeared a significant number of thorough theoretical works devoted to the study of various aspects of term formation, terminological systems and standardization of professional vocabulary, and the number of studies aimed at describing and systematizing the terminological apparatus of certain branches of knowledge has also noticeably increased, there are still grounds to argue that in the context of the proposed investigation, theoretical issues require special and detailed consideration. Clarification of concepts and in-depth coverage of conceptual foundations provides an opportunity to clearly outline the terminological apparatus necessary for further analysis of the phenomenon of professional terminological competence, as well as for identifying essential characteristics, structural components and methodological approaches to its formation.

It is clear that the implementation of the above provisions, taking into account current trends in the development of professional education, in particular, increasing the requirements for the quality of professional communication and a practically-oriented approach, can really become a guarantee of a thorough theoretical understanding of the category of professional terminological competence itself as an integral formation that combines linguistic, cognitive, communicative and operational-practical components. That is why, turning to scientific developments on the theoretical foundations of terminology, cognitive linguistics and language-didactic strategies, we will try not only to expand the analytical horizons of the study, but also to create a conceptually sound basis for further determining the content parameters of the formation of the professional terminological competence of future specialists.

First of all, the term "competence" in scientific literature is referred to as a dynamic combination of knowledge, skills and practical abilities, ways of thinking, professional, worldview and civic qualities, moral and ethical values, which determines a person's ability to successfully carry out professional and further educational activities and is the result of training at a certain level of higher education [1].

N. Artikutsa, G. Bondarenko, N. Golub, I. Gumenyuk, L. Dmytruk, I. Kochan, G. Krokhmalna, G. Matsyuk, G. Onufrienko, T. Panko, I. Snigurova, N. Stankevych, D. Furt, I. Kharchenko, Ya. Yanush and others write about terminology in the educational process.

In the scientific works of Ukrainian terminologists (V. Dubichynskyi, Z. Matsyuk, R. Minyailo, B. Rytsar, L. Symonenko, O. Taran and others) there is a tendency towards an in-depth analysis of terminological systems, standardization of terms and the importance of compiling terminological dictionaries, the influence of professional communication on the quality of training of specialists.

In turn, lexicologists note that within the framework of special vocabulary, the terminology of various branches of knowledge occupies a central place, and the volume of such vocabulary (terms and nomenclature names) has a tendency to steadily grow. The observed trend is quite understandable, since the role of science and technology in the life of modern society is constantly growing, and in connection with this, the volume of scientific information is also increasing (after all, it is not for nothing that modern civilization is classified as informational). Modern civilization requires rapid processing and transmission of information, which is possible only under the condition of accurate naming of the corresponding concepts or phenomena, and therefore, under the condition of the existence of lexemes that are characterized by both semantic narrowness and exhaustive significant depth. It is thanks to such features of special lexemes that it is possible to effectively and rationally use language as a means, by which human knowledge is formed, consolidated and transmitted.

It is clear that in the lexical fund of the Ukrainian language, terminological vocabulary as a type of special vocabulary occupies a significant place, including three main types: terms, nomenclature signs, professionalisms, which are designed to serve the scientific sphere of human knowledge and activity [2].

Given the above, it became quite natural within the framework of linguistic teaching to single out a special branch of scientific knowledge — terminology studies as a science focused on the research of terminological (specialized) vocabulary. It was the problems associated with the specific vocabulary of specialized languages that gave rise to the need to single out a separate science — terminology studies.

Thus, the isolation of terminology studies as a separate scientific discipline, combining linguistic, logical, semiotic and other approaches, is directly related to the formation of the professional terminological competence of specialists. Since a term can be fully described only under the condition of a comprehensive analysis of its content, functions and structure, a future specialist must possess not only linguistic knowledge, but also the skills to operate with terms in a broader interdisciplinary context. Given this, the development of professional terminological competence requires taking into account modern achievements of terminology studies, which provides scientifically sound approaches to the interpretation of a term and its role in professional communication.

Today, terminology studies is a completely independent science with its own tools (terminological apparatus, methods and techniques for studying the terminological lexical fund, etc.), which deals with both theoretical principles and practical issues related to terminology. Terminology studies aims to solve the following tasks: classification of special vocabulary, improvement of comparative research methods, standardization of terminological systems, compilation of terminological dictionaries, research and analysis of the influence of linguistic and extralinguistic factors on the development of modern terminology, etc. [3].

Increasingly, professional terminological competence is considered as an integral formation that combines linguistic, cognitive, communicative and cultural components. In modern scientific literature,

terminological competence is considered as a multidimensional formation that combines cognitive, speech, communicative and activity components.

Despite the fact that researchers of this issue distinguish individual features of this process, they all agree that mastering terms is a necessary basis for the formation of a specialist.

As N. Artikutsa notes, the professional terminological competence of a lawyer covers a much wider range of knowledge and skills than simple memorization of legal terms, since it involves the formation of a deep terminological culture, which includes an understanding of the process of the emergence of terms, the rules for their precise definition, structuring and organization in dictionaries and terminological systems, which allows a specialist not only to use terms, but also to analyze them, classify them, evaluate their functional and content features, that is, to work with the terminological system at the level of a scientific researcher; in addition, the scientist emphasizes the importance of the development and standardization of legal terminology, since standardized terms contribute to increasing the accuracy and clarity of legal texts, provide unified approaches in professional communication and can serve as a reliable basis for the systematic training of highly qualified specialists who are able to navigate modern legal practice and scientific activity.

It is the mastery of professional terminology that serves as the basis for the development of specialized erudition, awareness, and professional skill. Linguistic and terminological competence, in her opinion, occupies a leading place in the structure of general professional competence. This concept reflects the close relationship between linguistic competence, which is considered a broader category in terms of content and covers all levels of the language system, and terminological competence, focused mainly on the lexical level of professional communication.

According to the researcher, the concept of competence is not limited to a set of knowledge and skills, as it covers complex abilities and personal qualities. She emphasizes that linguistic and terminological competence should be understood as a synthesis of professional and linguistic erudition, which is based on a deep understanding of the nature and specificity of professional language and terminology, their systemic vision, as well as mastery of the methodology for scientific analysis of language units, in particular terminological ones. The author also includes experience in processing specialized texts and the ability to competently solve terminological and linguistic-stylistic problems [4].

N. Golub explores the specifics of the lexical system of the didactic field, emphasizing that the core of the terminology of linguistic didactics is not only purely didactic terms, but also ones from psychology, philosophy, sociology, etc., which reflect the scientific essence of pedagogical science. She points out that the effectiveness of scientific research depends on a clear definition of the terminological minimum, it is it that provides categorical clarity, allows you to avoid ambiguities in conclusions and increases the author's professionalism. Therefore, when choosing a problem and formulating its name, the researcher should determine his/her minimum set of key terms. It will serve as a guide in the work, ensure the clarity of generalizations and conclusions, and demonstrate the appropriate level of professionalism.

N. Golub also criticizes the incorrect or inaccurate use of terms in state educational documents and scientific publications, which reduces the quality of the scientific text and gives rise to misunderstandings. The scientist's recommendation is to standardize terminology while maintaining the flexibility of the system in order to avoid excessive "rigidity" of terms, which may hinder the further development of science [5].

I. Snigurova, who studies ways to form the professional linguistic and communicative competence of future cybersecurity specialists, notes that terminological competence for the specialty "Cybersecurity and Information Protection" is an extremely important component, since understanding narrow-field terms is a necessary condition for professional activity.

The formation of the terminological competence of future cyber specialists in higher education institutions has a number of features, such as: a wide range of professional tasks; most professional materials in this field are available in foreign languages, mainly English; language disciplines in higher education institutions are taught in junior years, when students have not yet studied professional subjects. Specialists who do not have a proper command of specialized terminology are unable to develop high-quality official documentation, effectively interact with involved parties, colleagues, internal and external auditors, representatives of state cyber defense institutions (cyber police or CERT-UA), as well as with suppliers of equipment and software solutions.

I. Snigurova substantiates the relevance of the formation of terminological training of future cybersecurity specialists in Ukrainian HEIs and identifies the key tasks of this process: the creation of a coordinated and normatively fixed bank of professional terms (in particular, a dictionary of professionalisms), the analysis and systematization of the main communicative situations in the professional activities of cyber specialists, as well as the development of a multi-level system of their terminological training [6].

Another landmark work on the coverage of issues of linguistic-terminological competence is the manual by D. Furt, L. Dmytruk, which deals with the peculiarities of translating terms, and in particular technical ones. The authors give practical advice and note that the difficulties that a translator faces are the identification of terminological affiliation to a particular field.

Also, during translation, specialists should be aware of what vocabulary (general scientific, commonly used, narrowly specialized) they are working with.

As researchers note, adequate translation is impossible without a full understanding of the methods and means of terminological derivation, word-forming types of terms, their origin, classification, and functioning within the terminological system, since the translation of professional texts is not limited to the reproduction of terminological units.

Thus, the authors are convinced that the training of translators in higher education institutions should include studying a terminology course that covers the history and theoretical foundations of terminology as a science, as well as the structural and semantic features of terms as objects of translation [7].

The terminological competence of economics students is understood as the ability to effectively use professional terminology in educational and professional activities, since economists often work with English-language sources and must know correct translations, competently use terms in oral and written presentations, in particular in reports, presentations, analytics, discussions.

Terminologists express concern about the current problem of borrowings in Ukrainian financial and economic terminology, in particular regarding issues of lexical and grammatical adaptation, transliteration, and spelling of borrowed terms.

It is also necessary to pay close attention to the internationalization of terminology, easing the path to economic progress, because this simplified path of uncritical and sometimes even thoughtless copying,

which impoverishes both one's own terminology, one's own economic thought, and the national mentality in general, often, on the contrary, complicates the understanding and reproduction of concepts, outlining them with mechanically borrowed terms.

Therefore, the authors call for this revision to be carried out constructively, realistically taking into account and embodying the rich nominative possibilities, traditions, and adaptive properties of our language: to modify individual terms and terminological compounds, to adapt them to the word-forming means of the Ukrainian language, to avoid inappropriate foreign influences (of course, while preserving the constructive international background, in sources — based on Latin, inherent in many European languages, the basis of numerous terms, which has long been instilled and adapted in the Ukrainian language).

The effectiveness of studying both basic and professionally oriented disciplines is largely determined by the level of students' proficiency in the language of the specialty, the central element of which is modern economic terminology [8].

Thanks to mastering terminology disciplines, students of technical specialties develop terminological competence, which is an important component of their professional training.

According to the research of scientist I. Kochan, it is important that the formation of this competence begins at the stage of training, where students must study not only theoretical aspects of terminology, but also practical skills in working with terms in specific professional contexts.

Technical terms are often regulated by state and international standards (ISO, IEC, SSU), therefore, applicants must know that the term has an official, normative definition and that it is used in documentation. The terminology of technical disciplines is inextricably linked with physical quantities, so it is important to know the correct units of measurement and symbols and ways of recording them [9].

Mastering professional terminology is a key component of the professional training of students of highway construction specialties, as it ensures the accuracy of communication and effective mastery of special disciplines. Future engineers must understand the content of basic and specialized concepts, such as *асфальтобетон*, *щебінь*, *дорожнє покриття*, *підґрунтя*, *армування*, *відсів*, *ущільнення*, and also be able to determine their industry affiliation and apply them in accordance with the professional context.

Knowledge of standardized terms enshrined in regulatory documents, as well as the correct use of units of measurement and technical symbols when performing calculations, designing highways or drawing up specifications for highway materials, is of great importance.

Since modern construction literature is often in English, students must navigate in the interlingual equivalents: *asphalt concrete — асфальтобетон*, *aggregate — щебінь*, *reinforcement — армування*, *subgrade — підґрунтя*. In addition, it is important to distinguish between related concepts, for example, coating ≠ subgrade, compaction ≠ compression, which ensures the accuracy of calculations and minimizes the risk of errors during construction.

The acquired skills form the terminological competence necessary for working with design documentation, drawings, technical specifications and other professional texts, which is an integral part of the training of a highly qualified highway construction engineer.

Innovative technologies in teaching terminology disciplines are an important component of the modern educational process, as they allow not only to improve the assimilation of the material, but also to make

learning more interactive and accessible to students. These technologies can contribute to the development of students' competencies, improve their understanding of the specifics of terminological systems and ensure the quality of training of specialists in the automotive and highway construction industries.

One of the effective ways to improve traditional teaching methods is the use of information and communication technologies, which is confirmed by many years of pedagogical practice. The use of ICT in the process of working out terminology problems, as well as in the course of independent and research activities of students, creates conditions for a more active and more conscious assimilation of educational material [2].

Based on scientific concepts developed in the works of modern linguists and representatives of the field of pedagogical sciences, we will highlight the components of the conceptual corpus of professional terminological competence, such as: cognitive — knowledge of terms, their definitions, classifications, places in the terminological system; speech — the ability to correctly use terms in oral and written communication; communicative — the ability to professional interaction using terminological tools; practice-oriented — the use of terminology in practical professional tasks; informational — the ability to work with various sources of terminological information, and what is especially relevant — e-resources [10].

3.2 RELEVANCE OF HIGHER EDUCATION DIGITAL TRANSFORMATION

Global progress in modern conditions is characterized by dynamic shifts in all spheres of economy, technology, science, education, culture. One of the factors contributing to the active course of these processes is the active development of digital transformation, which is able to ensure adequate exchange of information between all subjects, on which the success of the implementation of certain tasks of state and social construction depends. The educational process is experiencing a fundamentally new stage of its functioning, which has received the interpretation of education digital transformation, which involves the comprehensive use of modern digital services, distance learning platforms and electronic educational resources and is defined as a strategic task of central education management bodies, heads of higher education institutions and other authorized entities responsible for the implementation of state policy in the field of modernization of the educational infrastructure and improvement of the quality of educational services [11].

Scientific research shows that the digital transformation of education and science contributes to increasing the competitiveness of higher education institutions, expanding the possibilities of distance learning and integrating Ukrainian universities into the European educational space, and also stimulates the formation of modern digital competencies in students and teachers.

Despite numerous studies devoted to the introduction of digital technologies into the educational process, as well as publications describing practical cases and models of distance and blended learning, there is still an urgent need for a thorough theoretical analysis of the essence of this phenomenon.

Analytical study of it allows us to outline the conceptual framework of digital transformation, clarify its key components and determine the methodological principles of implementation in various educational contexts.

The team of authors of our work is inclined to believe that digital transformation should be considered not only as a technical update of educational resources and platforms, but also as a systemic change in pedagogical practices, organizational structures and strategies for managing the educational process.

Reflecting on the broader context of education digital transformation, it is worth outlining it as a complex phenomenon that combines socio-cultural, technological, pedagogical components and provides new opportunities for increasing the effectiveness of learning, interaction with interactive elements and individually directed educational development. In the context of global transformations of educational systems, digitalization is becoming a key factor in the development of higher education institutions. The Ministry of Education and Science of Ukraine (MES) defines digitalization as one of the priority areas of reforming education and science, implementing the projects "e-University" (a concept and a set of digital services that provide e-management of the activities of a higher education institution), "e-Science" (digital management of scientific activities and research results), and modernization of digital services for higher education institutions. The implementation of these initiatives allows transferring management, educational, and administrative processes into a digital format, increasing the accessibility, transparency, and efficiency of educational services [11]. Without understanding the tasks that the MES sets for itself today in the context of digitalization, it is impossible to fully study the relevance of the digital transformation of higher education.

However, first of all, the scientific concepts of "digitalization", "digitization", "digital transformation" require semantic analysis for further correct use in a scientific context.

As noted in O. Shparyk's study on the distinction between these highly specialized, but fundamentally different terms, the lexeme "digitalization" means the transition to digital technologies, that is, the inclusion or improvement of processes through the use of digital technologies and digitization (the process of converting information from analog form to digital (digital files, document scanning, transferring lectures to video format) of relevant data) [12].

Therefore, digitalization involves and is a kind of subcategory of digitization. Digitization increases the productivity and efficiency of the process, while simultaneously reducing costs, but does not change or transform it. That is, digitalization converts the process, in which people manage actions or series of actions, into a programmatic one and optimizes internal processes (for example, the transition of a university to an electronic document submission system).

The term "digital transformation" is a kind of evolution of the sphere of activity (in particular, education), which is provided by digital technologies.

The task of modern educators is to ensure the development of the necessary digital competence of students, the ability to take advantage of the benefits that technology can bring to the teaching and learning process, in particular, providing tools for innovative education and promoting the personalization of learning, the development of creativity, the effective and safe use of digital technologies. It is assumed that education systems that cannot adapt to the digital world will undoubtedly lose out due to lagging behind in the digital world.

Foreign researchers emphasize the need for teachers to replace outdated educational programs, educators must also develop methods that will encourage students to adapt to the educational environment and learn productively. To do this, it is reasonable for teachers to communicate with students in their language,

but without neglecting the important content of thinking methods, which involves less detailed instructions, more analogies and freedom in acquiring knowledge [13].

Therefore, education should combine traditional knowledge with the latest technologies, in particular software, robotics, genomics, hardware, etc. The educational process should involve the study of historical aspects with the use of progressive digital technologies, which allows combining the diachronic content of the past with the synchronous experience of modern digital learning tools.

Today, higher education institutions face challenges: ensuring modern digital infrastructure, increasing the digital literacy of teachers and students, implementing quality standards for online learning, and ensuring cybersecurity and data protection [14]. Thus, the digitalization of higher education in Ukraine is not just a technical upgrade, but a strategic transformation that encompasses educational, scientific, and administrative dimensions, contributing to the modernization of educational programs, increasing the efficiency of management, and integrating Ukrainian education into the European educational space [15].

The latest MES initiatives include partnerships with international providers of educational IT solutions, including artificial intelligence platforms, video, and online services, which creates an interactive, flexible, and adaptive learning environment.

In their reflections on the essence of the educationd igital transformation, scientists note the formation of competencies among teachers and students that ensure the adequate use of digital resources, critical understanding of information and integration of technologies into teaching practice, not simply the development of tools and platforms.

At the same time, the digital transformation of higher education is associated with a number of challenges and limitations that require an integrated approach to overcome them. One of the main problems remains the insufficient digital literacy of teachers and students, which limits the effective use of modern platforms, distance learning services and interactive resources. Many teachers need additional preparation and advanced training in order not only to master the tools, but also to integrate them into their own teaching methods, ensuring effective learning and the formation of students' competencies.

A significant challenge is the unevenness of the digital infrastructure between educational institutions and regions of the country. In some universities and research institutions, access to modern servers, high-speed Internet, specialized software and digital resources is limited, which creates differences in the quality of educational services and opportunities for students in different regions. This factor complicates the implementation of blended and distance learning at a level that meets world standards, and also affects the integration of Ukrainian institutions into the international educational space.

At the same time, one should not ignore the fact that the transformation of educational systems in Ukraine is taking place in the conditions of full-scale war, which significantly affects the functioning of higher education institutions, determining special challenges and priorities for their digital development.

In their study, a team of authors (S. Ilyashenko, Yu. Shipulina, N. Ilyashenko) analyzes the process of digital transformation of higher education institutions in the conditions of military conflict. During the war, the educational process faced a number of new challenges: a significant number of people were evacuated from temporarily occupied territories, some were left homeless and have refugee status, but they strive to continue their studies with their class or course. In view of this, the authors believe that digital transformation

is of paramount importance for ensuring the continuity of the educational process in Ukraine. In addition to traditional educational institutions, the integration of digital technologies during the war is also appropriate in those areas where professional retraining and advanced training of working people are possible [16].

Another important aspect is the lack of uniform quality standards for online learning, which makes it difficult to assess the results of educational activities and monitor the effectiveness of digital platforms. If clear performance indicators, diagnostic methods and didactic conscience are not determined in time, distance education may become incomplete and, therefore, of poor quality, and the practice of learning will become declarative, which will affect the development of competencies.

We should not forget about the importance of personal data protection (a specific part of security aimed only at protecting information about real people), as well as cybersecurity (a broad area of protecting digital systems and networks from threats, for example, program security, recovery from attacks, etc.). A safe educational environment is an important task for educators, and not just a technical issue, which is fixed in the concept of educating young people in virtual space. If pedagogically developed methods of involving digital security in the educational process, which include both self-training of educators and revision of training modules, are not followed, digital risks for effective work, as well as leakage of confidential information, cannot be avoided [15].

Social and psychological challenges of digitalization are also important. Traditional communication between a teacher and a student has been replaced by a virtual one, due to which, based on the purpose of learning, the curriculum is being rebuilt and the educational process is being organized in accordance with the tasks of forming and developing those intellectual abilities that are necessary for a certain type of activity. Due to the constant flow of information, applicants often face overload, emotional and nervous overstrain, which can reduce concentration, the effectiveness of learning and the acquisition of professional terminology [17].

The war in Ukraine has caused many problems in educational activities, but it is precisely digital transformation, as a complex socio-cultural process, that contributes to improving the quality of education under these conditions.

Thus, the digital transformation of higher education, despite its numerous advantages and prospects, is a process that is accompanied by a complex of pedagogical, technological, organizational and social challenges. However, having overcome these barriers, we must stimulate prospects for the successful formation of students' professional terminological competence and the development of a modern educational infrastructure capable of meeting international standards and requirements of the 21st century.

3.3 METHODOLOGICAL APPROACHES TO THE PROFESSIONAL TERMINOLOGICAL COMPETENCE FORMATION IN STUDENTS OF VARIOUS SPECIALTIES IN THE DIGITAL EDUCATIONAL ENVIRONMENT

Professional terminological competence, taking into account the use of various innovations in the modern educational space, acquires a completely new meaning, since the computerization of the educational process opens up wide opportunities for mastering specialized vocabulary, integrating theoretical

knowledge with practical application, as well as for the development of communicative and cognitive skills relevant for specialists of various disciplines.

Examples of research on technological innovations in teaching terminological disciplines can be traced in the scientific works of M. Dzyuba, L. Malevych, O. Taran, etc.

Today, mastering a language, developing science and culture through the involvement of digital resources has become more convenient and easier. For example, educational and scientific programs that create digital educational collections enable access to artistic and special contexts, which helps to standardize the terminological corpus, serves as a basis for the educational process and scientific achievements. It should be noted that involving students in active digital programs, supporting such projects, as well as the use of methodological techniques in the educational process contribute to the high-quality training of specialists.

The most effective methodological approaches that are used today to form terminological competence include:

— interactive exercises — online tests, tasks with self-checking, group or individual exercises for analyzing texts, diagrams, drawings or models (depending on the specialty). Such exercises allow students to practically apply terms, check their meaning and context, which contributes to memorization and a deeper understanding of vocabulary;

— project activities — complex tasks that involve modeling technologies, developing algorithms, creating presentations or reports using professional terminology. This approach develops the ability to integrate knowledge, work with information sources, and solve practical problems;

— work with terminology corpora and glossaries — analysis of professional texts, regulatory documents, specialized articles; formation of own glossaries; classification and systematization of terms; testing knowledge. Such work deepens the cognitive and informational components of competence;

— case study learning — consideration of real or simulated professional situations, decision-making taking into account the context, norms, standards and professional terminology. This stimulates analytical thinking, practical skills and communicative competence;

— digital simulations and coaches — virtual laboratories, process modeling, application of specialized terminology in a simulated professional environment. This approach allows you to test practical skills without risks, increases motivation, simplifies the assimilation of complex terms and procedures.

These approaches are not just methods, but components of a comprehensive educational strategy that takes into account different learning styles, student specialization and requirements for professional training in the 21st century.

Today, it is becoming increasingly important not only how to teach, but also on what resources — that is, whether teachers and students have access to up-to-date corpora of texts, digital dictionaries, NLP tools, databases that cover terminology and professional texts from various industries.

Some of these projects:

— UkrNLP Corpora is a knowledge center established in 2023 at the University of Jena (Germany) that provides access to Ukrainian language corpora, dictionaries, datasets (structured data collections intended for training, validating and testing computer learning and natural language processing models) and

NLP tools. This creates a basic infrastructure for research, linguistic analysis, translation, and creation of terminological resources [18].

— Ukrainian Language Information Fund (ULIF NAS of Ukraine) is a national organization that supports the development of language information resources, dictionaries and corpora of the Ukrainian language, which are important for the standardization of terminology, translation, and professional communication in various fields [19];

— SUCHO (Saving Ukrainian Cultural Heritage Online) is an international volunteer initiative that digitizes and preserves the websites of libraries, archives, museums, and other cultural and scientific institutions in Ukraine that are at risk, preserving tens of terabytes of data. This allows for the preservation of cultural and intellectual resources, including scientific publications and documents — which is relevant for humanitarian and applied research [20] ;

— Ukraïnica (supported by the Harvard Graduate School of Education and the Ukrainian Institute — a database of primary sources on Ukrainian studies: literature, historical, cultural, and social texts, providing a resource for research in the humanities, sociology, cultural studies, and linguistics [21].

Such initiatives as SUCHO often collaborate with international digital humanities networks to provide access to digital copies of documents, archives, and scientific publications; this is especially important in crisis situations.

The presence and access to such projects allows you to establish a network that is extremely necessary for implementing methods of organizing the educational process. Interactive exercises, projects, simulations or methods of analyzing specific cases will be significantly limited in quality and depth without corpora, dictionaries, translations, NLP tools and resource bases.

It is especially important that these projects allow students and researchers to work regardless of their location — which is of great importance in conditions of internal or external challenges, social, political or security. For example, volunteer initiatives that store digital copies of educational and scientific resources allow you to preserve the scientific heritage, support the educational process and provide access to information even in conditions where physical archives are unavailable.

We can confidently conclude that the successful formation of professional terminological competence today should be built on an integrated approach that combines:

— systematic methodological tools for learning (interactive exercises, projects, corpus work, cases, simulations);

— access to digital resources (corpora, dictionaries, archives, databases);

— participation in and support of scientific and educational projects that create and support these resources, which ensures the relevance, reliability and long-term sustainability of the educational and research process.

This approach makes it possible to prepare specialists who are able to work in various fields — technical, natural, humanitarian, social — with professional, standardized vocabulary, meet modern requirements, adapt to changes and use modern means of working with information.

In the current conditions of education digital transformation, methodological approaches to the formation of professional terminological competence should be implemented in close connection with the

creation and development of digital resources. Interactive exercises, project activities, corpus work, case methods, digital simulations — all this is effective only when access to the relevant resources is provided.

Modern projects such as UkrNLP Corpora, ULIF, SUCHO, Ukraïnica, create the basis for such work. Therefore, the strategic task of educational institutions, scientific establishments, and communities is to support, develop, and integrate these resources and methodologies, creating conditions for training competitive specialists with professionally correct terminology and digital literacy.

3.4 PRACTICAL RECOMMENDATIONS FOR THE PROFESSIONAL TERMINOLOGICAL COMPETENCE FORMATION IN STUDENTS OF HIGHWAY CONSTRUCTION SPECIALTIES USING DIGITAL TECHNOLOGIES

The educational process in Ukraine has undergone significant changes due to military operations in the country. Teachers of many Ukrainian universities found themselves in conditions of extremely rapid adaptation to the digital educational environment, which requires educators to focus maximum efforts on self-improvement, mastering new knowledge to improve teaching, diversifying methods of presenting material and survey methods. Many educational institutions were forced to switch to a blended learning format or even distance learning. KhNAHU (Kharkiv National Automobile and Highway University) was no exception, where online learning became the main form of implementing educational programs.

Educational and practical tasks of the disciplines "Automotive and Highway Terminology" and "Ukrainian Language (for Professional Purposes)" at KhNAHU are implemented using innovative technologies:

1. The use of e-learning platforms (for example, Moodle) makes it possible to create courses, interactive tests and tasks that enable students to work with specialized terms in various contexts and train in terminological issues even outside the classroom [22].

2. Students use mobile applications (for example, Quizlet, Anki) to study terms by creating their own cards or tasks. The tasks should ideally reproduce the terminology of a specific industry, for example, as implemented for students of automotive and highway specialties: the front side of the virtual card is "rubber-bitumen mastic", the back side is "building material obtained on the basis of bitumen with the addition of rubber crumb; used for sealing joints and covering surfaces"; front side — "crushed stone-mastic asphalt concrete", back side — "type of asphalt concrete with a high content of crushed stone and mastic, which provides increased wear resistance of the highway surface".

Separate sets of cards with the names of thematic groups have been created, for example: "Highway construction materials", "Types of asphalt concrete", "Additives and their functions", "Types of soils and mixtures".

In case of the need to use English-language equivalents (for example, for working with international technical documentation), bilingual cards are used: LHS (front side) — "hydrophobic-plasticizing additive", RHS (back side) — "hydrophobic-plasticizing additive — a component that improves the water-repellent properties of the concrete mixture and its plasticity".

3. In order to increase students' interest and effectively master the classifications of highway construction terminology, elements of game practices have been introduced into the educational process.

In particular, the use of online games, thematic quests and quizzes based on the creation of hyponymic groups on the basis of various distinguishing classification features is proposed.

Role-playing games are very useful for gamification of the topic of terms polysemy. Students act as engineers, designers or builders, where they need to use terms in different contexts. This allows them to apply theoretical knowledge in practice. Students are given scenarios of highway construction, where they must choose the correct term from several options depending on the situation.

4. By using machine translation and terminology databases to translate technical vocabulary, you can develop students' skills in contextual translation of technical terms using digital tools, teach them to distinguish between translation for a mass audience and experts, and consolidate their knowledge of terms in the field of highway and automobile construction.

Task: choose 10 technical terms from the highway construction industry in a foreign language (for example, German, French, or English). Examples are given below: soscel, chaussee, binder course, mastic asphalt. Translate each term using DeepL Translator.

Find the translation and definition of these terms in a terminology database or technical glossary.

5. Using infographics and visual term maps helps students understand the relationships between terms and their meanings. Interactive diagrams and maps allow you to visualize complex terminological concepts and structure them using different colors or connections.

Task: compare the translation results and justify which option is the most successful in a professional context, and also indicate the reason for the choice: accuracy, meaning, usability in a professional environment, compliance with the Ukrainian terminological norm.

6. The use of automatic assessment systems allows you to quickly and effectively check students' knowledge, saving teachers' time and helping students work on their own mistakes.

Example task: choose the correct Ukrainian equivalent for a foreign-language term. Choosing the correct match (multiple choice):

1. Penetration is a. щільність b. в'язкість c. гнучкість d. проникність

Correct answer: b. в'язкість.

7. In some cases, digital learning environments adapted for Moodle are used to study terms related to specific industries (for example, technical ones).

Such online environments make it possible to apply terms in practice in simulated real-world conditions. A model of a virtual practical work lesson that combines professional terminology, synonym series and practical simulation in automative and highway construction. First, we introduce students to the topic of morphological-syntactic, spelling and syntactic synonyms within technical terminology. We teach them to recognize variants of terms in a professional environment (standards, building codes, schemes, drawings, patents, directories, construction projects).

The task is to recognize synonyms in the proposed simulation option. If the student clicks on the position "oblique wing", an explanation opens — "this element can also be called "oblique wall". It is necessary to choose the term recommended in the regulatory documentation.

8. The use of crowdsourcing platforms allows students and professionals in various fields to jointly create terminological bases, which allows them to attract rich experience to form accurate definitions and

translations of terms. A team term base has been formed with the ability to sort and search for terms by thematic groups, where all participants can view and even comment on the proposed lexemes.

Thus, the "Glossary" module was used to form a terminological base of highway terms, which allowed creating a team of participants who actively cooperate in the development of terminology and the creation of a dictionary in the learning process. The specified module in the course reflects the national spirit of Ukrainian terminology in the conditions of modern transnational challenges, because the task of students is to form a terminological base, after the terms of foreign origin previously created by the teacher, to supplement this list, offering their own versions of translations, synonyms or explanations. The platform acts as a source of creation and replenishment of dictionaries of autochthonous highway construction and automobile terms.

9. Lectures were held both in real time and asynchronously, when during lecture classes students act as passive listeners, which, in our opinion, sometimes negatively affects their dynamic activity in the digital learning environment. The use of video lessons and online lectures allows you to convey information to students in various formats: video, text, audio. However, such training is extremely relevant in the mode of modern blackouts in Ukraine

In particular, videos can include animations, highway structure modeling, design studies, and analysis of practical cases.

We actively use test tasks in each practical lesson, taking into account the specialization of applicants and the capabilities of Moodle. If the results of test tasks are configured taking into account adaptive learning technologies to individualize the process, the system offers the most necessary terms or specific topics for study for each student [9 Knysh Programs].

Teaching experience has shown that the introduction of information and communication technologies into practical lessons on terminology studies, as well as into the process of independent and research activities of student motorists and highwaay workers, is an effective tool for improving traditional methodological approaches.

3.5 DISCUSSION OF THE RESULTS OF SECTION 3

The conducted study shows that the formation of the professional terminological competence of students at Ukrainian higher education institutions is an important aspect of the modern educational process, especially in the context of education digital transformation. The analysis of methodological approaches to determining the essence of professional terminological competence allowed us to clarify its structural components and functional aspects, which ensure the effective training of specialists in various specialties.

Highlighting the relevance of the digital transformation of higher education emphasized that the integration of digital technologies into the educational process not only expands access to knowledge, but also creates conditions for a more dynamic assimilation of professional terminology and the development of students' communicative competencies. Methodological approaches to the formation of professional terminological competence in a digital educational environment prove the need to use modern learning tools,

such as interactive platforms (Moodle, Google Classroom), multimedia resources and adaptive distance learning systems, which allows taking into account the individual characteristics of students and ensures a high level of assimilation of educational material.

Practical recommendations developed for students of highway construction specialties have proven themselves well during the systematic mastery of industry vocabulary. This contributed to improving the performance indicators of a competent specialist who is ready to work in the conditions of the modern labor market.

Thus, a comprehensive combination of methodological, methodical and practical approaches ensures the holistic formation of students' professional terminological competence, which meets the requirements of the digital transformation of higher education in Ukraine and takes into account the challenges of the functioning of the education system in war conditions, contributing to the training of highly qualified and competitive specialists.

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