DOI: https://doi.org/10.31392/UDU-nc.series9.2026.31.06
UDC: 378.091.3:81’255.2:62–051

Serhii F. Panov
Doctor of Pedagogical Sciences,
Candidate of Technical Sciences, Professor,
Department of Germanic Languages
and Intercultural Communication,
Faculty of Foreign Philology,
Dragomanov Ukrainian State University,
Kyiv, Ukraine
https://orcid.org/0000-0003-4200-7270
e-mail: panovsf@ukr.net

Iryna A. Blynova
PhD in Philology, Associate Professor,
Department of Germanic Languages
and Intercultural Communication,
Faculty of Foreign Philology,
Dragomanov Ukrainian State University,
Kyiv, Ukraine
https://orcid.org/0000-0003-2788-5403
e-mail: i.a.blynova@udu.edu.ua

Raisa I. Kuzmenko
Doctor of Philosophy,
Associate Professor, Senior Lecturer,
Department of English for Engineering 1,
National Technical University of Ukraine
“Igor Sikorsky Kyiv Polytechnic Institute”,
Kyiv, Ukraine
https://orcid.org/0000-0002-4881-1879
e-mail: raisa.kuzmenko.kiev@gmail.com

DEVELOPMENT OF TECHNICAL TRANSLATOR'S PROFESSIONAL COMPETENCE

Bibliographic Description:

Panov, S., Blynova, I., & Kuzmenko, R. (2026). Development of Technical Translators' Professional Competence. *Scientific Journal of Dragomanov Ukrainian State University. Series 9. Current Trends in Language Development*, 31, 82–91. https://doi.org/10.31392/UDU-nc.series9.2026.31.06

Abstract

This paper considers the current issue of forming professional competence in technical translators within higher education institutions in the context of globalization, technological progress, and expanding international communication. The study emphasizes that modern society requires specialists who are not only linguistically proficient but also possess deep technical knowledge and intercultural awareness. The authors analyse the structure of translator competence as a multifaceted system that integrates three key components: technical knowledge, linguistic and translation skills, and professional training grounded in modern educational approaches. Special attention is given to the role of terminology, translation culture, and the ability to adequately transfer specialized information across languages.

The paper highlights that effective technical translation requires not only mastery of foreign languages but also understanding of subject-specific domains and the interaction between language and technology. The research draws on both Ukrainian and international scholarly perspectives, comparing approaches to translator training and competence development. It also considers the impact of information technologies and the growing demands of the labor market on the professional preparation of translators. The paper concludes that a competency-based approach to training technical translators ensures the development of a holistic, flexible, and highly qualified specialist capable of functioning effectively in a rapidly changing professional environment. The findings underline the necessity of integrating linguistic, technical, and cultural components into educational programs to enhance the quality of translator training.

Keywords: *translation, translation culture, technical translator, competence, development of translator's competence.*

1. Introduction.

The effective use of translation tools and innovative technical resources is a key aspect of translation training for technical translators. There are currently numerous free online dictionaries, specialised corpora, training programmes and materials on translation practice, which are of great assistance in consolidating students' knowledge. However, when using each of these tools, it is necessary to assess their suitability and adopt a critical approach during the work process.

The growing demand for highly competent technical translators in higher education institutions has become increasingly significant in the context of globalization and rapid technological development. Effective preparation of such specialists requires a clear understanding of the key components that shape their professional competence.

This study explores the main structural elements involved in the formation of technical translators, emphasizing their linguistic, technical, and methodological foundations. Special attention is given to the essential concepts and their interrelated definitions, as well as to how their practical application contributes to the development of translators' professional competence. A comprehensive understanding and integration of these components are crucial for preparing future

technical translators capable of meeting modern professional and industry requirements.

When working with scientific and technical texts, students often feel uncertain or fear making mistakes. Students studying translation, therefore, need to be prepared for real-world tasks through practical sessions. A key aspect of this work is that translation requires overcoming psychological barriers. Creating an environment where students can express their own opinions and learn through interactive methods using new translation technologies can help mitigate this issue. At the same time, this expands opportunities for developing a creative approach to the elements and stages of technical translation.

2. Literature Review.

Researchers in the field of technical translation include such scholars as O. Bilous, L. Borysova, O. Dudina, V. Karaban, J. Byrne, and M. Olohan, among others (Bilous, 2013; Borysova, 2003; Dudina, 2019; Karaban, 2004; Byrne, 2006;Olohan, 2015).

The development of translation tools for scientific and technical texts has been widely explored in the works of L. Chernovaty and G. Toury (Chernovaty, 2004; Toury, 1980). General issues of translator training have been studied by both Ukrainian and foreign scholars, including A. Gudmanyan, T. Kyyak, I. Korunets, J. Albrecht, H. G. Hönig, Grigoraș, C.-P. and P. Schmitt (Gudmanyan, Sitko & Yencheva, 2017; Kyyak, 2006; Korunets, 2008; Albrecht & Baum, 1992; Hönig, 1995; Grigoraș, C.-P., 2024; Schmitt, 1987).

Scientists focus on the professional preparation of technical translators and contribute to the development of technical translation methodology by emphasizing the importance of communicative and terminological competence in higher education, linguistic competence, terminology management, and the integration of modern digital technologies into translator training (Polo & Chelo Vargas, 2023; Saienko & Simkova, 2019). Their research works highlight the necessity of preparing translators for work in specialized scientific and technical fields through practical terminology analysis, intercultural communication, and the use of innovative educational approaches; demonstrate the importance of interactive teaching methods and professionally oriented tasks in improving translation accuracy and students' ability to adapt to rapidly evolving scientific terminology.

In turn, researchers (Grigoraș, 2024) explore current challenges in technical and specialized translation, paying special attention to terminology standardization, multilingual communication, and the influence of technological innovation on translation practices, thereby contributing to the modernization of technical translation studies. Thus, the growing attention of both Ukrainian and foreign scholars to translator training, terminology management, digital technologies, and innovative teaching approaches confirms the continuing relevance of research on technical translation and the professional preparation of technical translators in the context of rapid scientific and technological development.

3. Aim and Objectives.

Since the arrangement of the educational process for technical translators in Ukrainian higher education institutions remains underdeveloped, there is a growing need to shape vocational training in a way that ensures their comprehensive development within technical, linguistic, and translation contexts, while also fostering the professional competencies required of future specialists. Therefore, the *aim* of the paper is to study the process of formation of technical translators' professional competence in higher education institutions and its development under the conditions of globalization, the progress of information technologies, and the increasing demands of the modern labour market.

To formulate the research *objectives*, it is necessary:

1) to analyse and demonstrate the essence and structure of a technical translator's professional competence;

2) to characterize its basic concepts and main components, including technical, linguistic and translation, and professional training;

3) to compare their content in the European and domestic scientific space;

4) to determine the role of terminological, intercultural, and communicative competences in the professional activity of a technical translator;

5) to prove the expediency of integrating linguistic, technical, and cultural components into the system of technical translators' professional training.

4. Methodology.

The methodology of the research is based on a competency-based approach to the professional training of future technical translators. The study uses theoretical analysis, comparison, and description of scientific and pedagogical sources related to technical translation, translation competence, and technical education.

Theoretical analysis made it possible to examine the views of Ukrainian and foreign scholars on the formation of translator competence and the role of linguistic, technical, and intercultural knowledge in professional activity. The comparative method was used to identify common and distinctive features of European and Ukrainian approaches to translator training.

The descriptive and system approaches helped to characterize the main concepts of the study and to consider the professional competence of a technical translator as a combination of interconnected skills, knowledge, and practical abilities necessary for successful work in the modern technical and information environment.

The methodology for training technical translators should include the derivational method as an important tool for developing professional linguistic competence in various scientific fields, including electronics, physics, optics, and mechanics. By applying this method, students learn to create and interpret new technical terms using prefixes, suffixes, and internal vowel modifications, which enhances their terminological accuracy and adaptability to evolving scientific vocabulary. Etymological analysis of terms also enables students to understand the

historical origins and semantic development of scientific terminology, thereby improving their comprehension and translation accuracy.

5. Results and Discussion.

Domestic scientist L. Chernovaty (2004) claims that "at the initial stage, a small number of components of the content of translation competence were identified and studied, but later the concept was introduced into linguistic and subject competence, the competence of creative transition from language to language, knowledge of elements of two cultures, background knowledge, etc.".

The term *competence* was introduced into the field of translation studies by G. Turi (1980). In his opinion, "translator's competence is a complex, multifaceted concept". G. Turi identifies "four main components necessary for the formation of translation competence: 1) knowledge of languages; 2) knowledge of cultures; 3) subject-oriented knowledge; 4) transfer competence".

A feature of the philosophy of technology today is that it covers the entire complex of modern problems, namely: technical and scientific, social, and political, environmental, and economic, philosophical, and international relations.

One of the main features of modernity is the rapid development of science and technology, which causes a profound change in all branches of production and has an impact on all spheres of life in modern society.

The growth of requirements for practical activities associated with the need for rapid processing of information flows necessitates the introduction of the latest information technologies to increase the effectiveness, intensity, and instrumentality of the professional activities of specialists, and reduce the labor intensity of processes when they use information resources through technical translation.

The characteristics of the basic concepts of the study are important for understanding the essence of global information and translation processes occurring in society, economy and education and their impact on the professional training of technical translators in higher educational institutions of pedagogical profile. Accordingly, the basic concepts of the study can be divided into three main groups (as shown in Fig. 1.):

1) concepts regarding the general description of the technical direction, technical systems and devices, elements of technical systems and their transformations, concepts of the general theory of systems engineering;

2) concepts characterizing the general direction of information translation;

3) concepts that reveal the features of the professional training of future technical translators in higher educational institutions (HEIs), terminological features, theory and practice of technical translation, general characteristics of computer technologies for translation and processing of professional texts.

5.1. The Concepts of the First Group.

These concepts are considered in the scientific literature mainly in the context of such definitions as: "technology", "technical education", "technical direction",

"system of transformations in technical systems", "technical process as an element of the system of transformations"; "technical system as an element of the system of transformations", "purpose of technical systems", "purpose of structures of technical systems", "properties and evaluation of technical systems", "emergence and development of technical systems", "evolution of technical systems", "systematics, classes, types and types of technical systems", "science".

The term "technical education" is one of the types of special education, the purpose of which is to train highly qualified specialists (engineers and scientists), middle technical personnel, and skilled workers for various sectors of the national economy. The emergence of technical education was caused by the development of the technological revolution.

The decision to establish the Kyiv Polytechnic Institute (1896) was made at a private meeting in the house of the city's honorary citizen L. I. Brodsky with the participation of representatives of the city authorities, the administration of the Southwestern Railway, engineers, and industrialists.

According to the adopted protocol, the educational institution was to be a polytechnic institute by type and consist of several departments of various specialties, following the example of polytechnics in Zurich, Munich, Vienna, Karlsruhe, Riga, etc. Engineering education in Ukraine has been around for over 160 years.

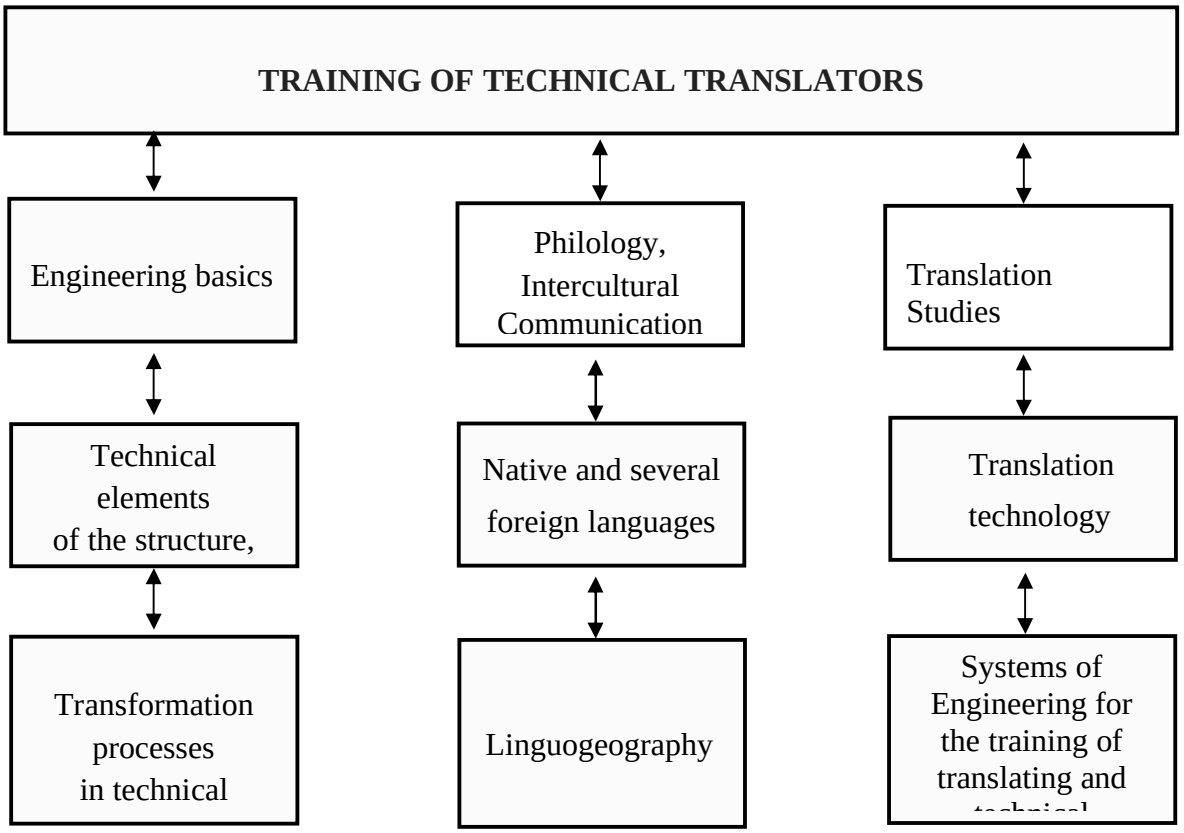


Fig.1. The basic concepts of the study

For about 80 years, US universities have been successfully providing their students with basic training in engineering and classical science based on a deep understanding of the fundamental disciplines of mathematics, physics, and chemistry. The curriculum is expanded and enriched with such auxiliary subjects as a foreign language, history, economics, and scientific activity, which activates research abilities. Great Britain, despite its national self-sufficiency and pride in its island location, faced with the threat of technological backwardness after World War II, recognized the need to develop elite engineering and scientific higher education.

Later, aspects of the general theory of technical systems in an integrated form more or less belong to the section of systems engineering in the works of Hubka (1974). Technical systems can be classified according to the following features: by the functions of the work action, by the type of operand, by the principle of the work action, by the nature of the functioning, by the level of complexity, by the means of manufacture.

Modern higher education practically does not have such curricula that would give students – future technical translators – a complete idea of the field of technology in which they will work, revealing its topology and interconnections with other fields and the surrounding world as a whole. And this does not contribute to the formation of creative thinking in a technical translator as in a harmoniously developed specialist.

6.2. The Concepts of the Second Group.

They are considered in the scientific literature mainly in the context of the following definitions: general translation, knowledge of the native language, linguistic and regional studies, knowledge of several foreign languages. All these concepts relate to the second basic component of translation competence. In order to translate well and effectively teach the theory and practical skills of technical translation, it is not enough to know two languages (Hudmanyan, Sitko & Yencheva, 2017).

Let us consider the characteristics of the linguistic and regional studies activities of future technical translators. The term "linguo-regional studies" is more than four decades old. When studying, for example, German as a second foreign language in a linguo-regional studies course, students usually strive first of all to master another way of participating in linguistic communication.

The modern German writer Franz Stark writes that the interregional means of communication in the European house are two, three, equivalent languages. According to him, the leading group of languages includes English, German, and French.

The formation of the concept of linguistic and regional studies is inseparable from the activities of international institutions, institutes, such as the Goethe-Institute Kyiv (Germany), the French Cultural Centre, the Austrian Library, the Embassies of Germany, Austria, and Switzerland, the Diplomatic Mission of

Luxembourg, the library of the US Embassy, Europe House, and America House Kyiv.

6.3. The Concepts of the Third Group.

The scientific literature analyses several key concepts related to technical translation, including the definitions of "technical translation" and "technical translator". These concepts have specific terminological, stylistic, and phraseological characteristics. Additionally, the bilingual technologies of technical translation can be understood through the following frameworks: "technical text as a method of study", "translation activities of a technical translator", "technology of translation of information from professional texts", "scientific and technical translation".

In addition, it is necessary to know the laws of technical translation, determine its complexities and natural contradictions, and clearly understand the requirements of society for translation and translator.

It is generally accepted that translation from one language to another is a complex process of human mental activity, the result of transmitting a message in another language. To translate a technical text, technical information, means to adequately reproduce a concept expressed by means of one language using means of another language, to reproduce the original taking into account the interaction of content and form.

Mastering the skills of scientific and technical translation occurs at different speeds, depending on the level and nature of the training of the student engaged in translation. Thus, for students who have a fairly good language preparation, but do not have the necessary knowledge in the relevant field of science and technology, the main difficulties in technical translation will be associated with understanding those parts of the text that contain highly specialized technical issues, the need to translate special technical terms.

For students who have good technical training but are not sufficiently proficient in a foreign language, the main difficulties in understanding the content will be associated, first of all, with the phenomena of linguistic order: with establishing semantic connections between individual words, with understanding linguistic constructions, using the necessary version of their translation, with the ability to find a word in a dictionary, etc. Finding the Ukrainian equivalent of an English or German term, as a rule, does not cause difficulties.

7. Conclusions.

The study showed that the professional training of technical translators is a complex process that combines linguistic, technical, intercultural, and translation competences. A modern technical translator must possess not only strong language skills, but also technical knowledge and the ability to work with professional terminology and information resources. The analysis of Ukrainian and foreign approaches confirmed the importance of integrating technical and linguistic training in higher education.

The proposed system of training future technical translators, with a competency-based approach, represents an interconnected set of elements that interact and influence one another, forming an integrated whole. Effective professional training can be achieved only through the balanced development of all components of this system, since the absence of any element reduces its overall effectiveness.

The study has shown that the professional training of technical translators is a complex process that combines linguistic, technical, intercultural and translation competences. A modern technical translator must possess not only strong language skills, but also technical knowledge and the ability to work with specialist terminology and information resources. An analysis of Ukrainian and international approaches has confirmed the importance of integrating technical and linguistic training within higher education.

The term 'translation' should be viewed as an example of technical translation within the intercultural framework of knowledge acquired for knowledge management technologies.

Effective professional training for future technical translators can only be achieved through the balanced development of all components of this system, as the absence of any element reduces its overall effectiveness in the field of intercultural and multilingual communication management.

Metalinguistic approaches are also of particular importance in translation education. Etymological analysis of terms, the study of their historical development and semantic layers, contributes to a deep understanding of technical texts. Integrating this method with modern technological tools enables excellent results to be achieved, as terms often express concepts specific to a particular field, and without an understanding of their origin, accurate translation is difficult.

References

Albrecht, J., & Baum, R. (1992). Fachsprache und Terminologie in Geschichte und Gegenwart [Technical Language and Terminology in the Past and Present]. Tübingen. [in German].

Bilous, O. (2013). Naukovo-tekhnichnyy pereklad. Kurs lektsiy ta praktychnykh [The Scientific and Technical Translation. Course of lectures and practical work. Initial opportunity for students of translation departments]. Kirovohrad: RVV KDPU im. V. Vynnychenka, 100 p. [in Ukrainian].

Borysova, L. (2003) Osnovni problemy naukovo-tekhnichnoho perekladu [Main problems of scientific and technical translation]. Nizhyn, 208 p. [in Ukrainian].

Byrne, J. (2006). Technical translation. Usability strategies for translating technical documentation. Dordrecht: Springer. doi:10.26034/cm.jostrans.2007.727

Chernovatyy, L. (2004). Vplyv struktury fonovykh znan perekladacha na interpretatsiyu mifolohichnykh alyuziy [The influence of the translator's background knowledge structure on the interpretation of mythological allusions]. *Visnyk SumDU*. Sumy, № 4 (63). Pp. 193–200. [in Ukrainian].

Dudina, O. (2019). Praktyka perekladu terminolohiyi mashynobuduvannya (anhliyska mova). [Practical translation of mechanical engineering terminology (English)]. Kropyvnytskyy: Vydavets Lysenko V. F., 156 p. [in Ukrainian].

Hönig Hans G. (1995) Konstruktives Übersetzen [Constructive Translation]. Tübingen: Stauffenburg-Verl. [in German].

Hubka, V. (1974). Theorie der Maschinensysteme [Theory of Machine Systems]. Berlin, Springer. [in German].

Hudmanyan, A., Sitko, A., & Yencheva, H. (2017) Vstup do perekladoznavstva [Introduction to Translation Studies]. Vinnytsya: Nova Knyha. 295 p. [in Ukrainian].

Grigoraș, C.-P. (2024). Teaching technical translation in the digital era: Challenges and expectations. *Romanian Journal of English Studies*, 21, 124. doi: https://doi.org/10.2478/rjes-2024-0012

Karaban, V. (2004). Pereklad anhliyskoyi naukovoyi i tekhnichnoyi literatury. Hramatychni trudnoshchi, leksychni, terminolohichni ta zhanrovo-stylistychni problemy [Translation of English scientific and technical literature. Grammatical difficulties, lexical, terminological, and genre-stylistic problems]. Vinnytsya: Nova knyha, 576 p. [in Ukrainian].

Korunets, I. V. (2008). Vstup do perekladoznavstva: pidruchnyk [Introduction to translation studies: textbook]. Vinnytsya: Nova Knyha, 512 p. [in Ukrainian].

Kyyak, T. (2006). Teoriya ta praktyka perekladu (nimetska mova). Pidruchnyk dlya studentiv vyshchykh navchalnykh zakladiv [Theory and practice of translation (German). Textbook for students of higher educational institutions]. Vinnytsya: Nova knyha, 592 p.

Olohan, M. (2015). Scientific and technical translation. Routledge.

Panov, S., Kuzmenko, R. (2025). Training of scientific and technical translation specialists in Higher education institutions during the war in Ukraine. *European Humanities Studies: State and Society*, *1*(1), 41–52. doi: https://doi.org/10.38014/ehs-ss.2025.1.04

Pavlova, V. (2011). Innovatsiyni tekhnolohiyi u profesiyniy pidhotovtsi spetsialistiv [Innovative technologies in professional training of specialists]. *Higher education of Ukraine*. Appendix 2 to No. 3, T. VIII (33): K: Institute of Higher Education of the Ukrainian National University. Pp. 242–250. [in Ukrainian].

Polo, L., & Chelo Vargas, C. (2023). Translation technology and ethical competence: An analysis and proposal for translators' training. *Languages*, 8(2), 93. doi: https://doi.org/10.3390/languages8020093

Saienko, N., & Simkova, I. (2019). The impact of transdisciplinarity on sight translation training in scientific and technical domains. *Advanced Education*, 11, 46–54. doi: https://doi.org/10.20535/2410-8286.164697

Schmitt, P. A. (1987). Fachtexte für die Übersetzer-Ausbildung: Probleme und Methoden der Textauswahl [Specialist texts for translator training: issues and methods in text selection]. In: Ehnert r. Schleyer W. (Hgg.). [in German].

Toury, G. (1980). In Search of a Theory of Translation. Tel-Aviv: The Porter Institute for Poetics and Semiotics, Tel-Aviv University.

Vasylyshyna, N. (2014). Formuvannya profesiyno-komunikatyvnoyi kompetentnosti maybutnikh fakhivtsiv z mizhnarodnykh vidnosyn u protsesi vyvchennya fakhovykh dystsyplin [Formation of professional and communicative competence of future specialists in international relations in the process of studying professional disciplines]. Dysert. kand. ped. nauk. Kyiv: NAU. [in Ukrainian].

Бібліографічний опис:

Панов, С. Ф., Блинова, І. А., Кузьменко, Р. І. (2026). Розвиток фахової компетентності технічних перекладачів. *Науковий часопис Українського державного університету імені Михайла Драгоманова. Серія 9. Сучасні тенденції розвитку мов*, 31, 82–91. https://doi.org/10.31392/UDU-nc.series9.2026.31.06

А н о т а ц і я

У статті розглядається актуальна проблема формування фахової компетентності технічних перекладачів у закладах вищої освіти в умовах глобалізації, стрімкого розвитку технологій та розширення міжнародної комунікації. Підкреслюється, що сучасне суспільство потребує фахівців, які поєднують високий рівень мовної підготовки з глибокими технічними знаннями та міжкультурною компетентністю. Автори аналізують структуру перекладацької компетентності як складну багатокомпонентну систему, що включає три основні складники: технічну підготовку, мовно-перекладацькі вміння та професійну підготовку на основі сучасних освітніх підходів. Особлива увага приділяється ролі термінології, культурі перекладу та здатності адекватно передавати спеціалізовану інформацію різними мовами.

Наголошується, що ефективний технічний переклад вимагає не лише знання іноземних мов, але й розуміння галузевої специфіки та взаємодії мови й технологій. Дослідження ґрунтується на аналізі праць українських і зарубіжних науковців, що дозволяє порівняти підходи до підготовки перекладачів і розвитку їхньої компетентності. Також розглядається вплив інформаційних технологій і щоразу вищих вимог ринку праці на професійну підготовку фахівців. У висновках підкреслюється, що компетентнісний підхід забезпечує формування цілісного, мобільного та висококваліфікованого

технічного перекладача, здатного ефективно працювати в умовах динамічного професійного середовища. Обґрунтовується необхідність інтеграції мовних, технічних і культурних компонентів у навчальні програми для підвищення якості підготовки перекладачів.

Ключові слова: *переклад, культура перекладу, технічний перекладач, компетентність, формування компетентності перекладачів.*

Received: *19 March 2026*
Accepted: *19 April 2026*
Published: *23 May 2026*