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MODERN APPROACHES TO DEVELOPING PROFESSIONAL TRANSLATOR COMPETENCE UNDER THE INFLUENCE OF AI DEVELOPMENT

ABORDAGENS MODERNAS PARA O DESENVOLVIMENTO DA COMPETÊNCIA PROFISSIONAL DO TRADUTOR SOB A INFLUÊNCIA DO DESENVOLVIMENTO DA IA

ENFOQUES MODERNOS PARA EL DESARROLLO DE LA COMPETENCIA PROFESIONAL DEL TRADUCTOR BAJO LA INFLUENCIA DEL DESARROLLO DE LA AI

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ABSTRACT: This article explores student post-editing of machine translation as a means of developing the professional competence of future translators. The study aims to substantiate the use of AI-based machine translation systems in forming essential professional skills. A didactic experiment with translation students was conducted, where participants post-edited machine-translated texts to identify errors and propose corrections. The findings show that such training helps students recognize the limitations of technological tools and develop critical editing abilities, emphasizing that translators cannot rely solely on automation. The study also highlights the potential of AI-driven online resources, which can support translator education by providing interactive editing environments. It is concluded that AI represents a valuable digital learning technology, capable of performing routine tasks, simulating professional scenarios, and enhancing individual learning pathways. Integrating AI and neural network tools into translator training can expand opportunities for communication, personalization, and student motivation.

KEYWORDS: Translator education. Digitization. Artificial intelligence (AI). Translation training. Machine translation post-editing.

RESUMO: *Este artigo explora a pós-edição de tradução automática por estudantes como meio de desenvolver a competência profissional de futuros tradutores. O estudo visa fundamentar o uso de sistemas de tradução automática baseados em IA na formação de habilidades profissionais essenciais. Foi realizado um experimento didático com estudantes de tradução, no qual os participantes pós-editaram textos traduzidos por máquina para identificar erros e propor correções. Os resultados mostram que esse treinamento ajuda os estudantes a reconhecer as limitações das ferramentas tecnológicas e a desenvolver habilidades críticas de edição, enfatizando que os tradutores não podem depender apenas da automação. O estudo também destaca o potencial de recursos online baseados em IA, que podem apoiar a formação de tradutores, proporcionando ambientes de edição interativos. Conclui-se que a IA representa uma valiosa tecnologia de aprendizagem digital, capaz de executar tarefas rotineiras, simular cenários profissionais e aprimorar os caminhos de aprendizagem individuais. A integração de ferramentas de IA e redes neurais na formação de tradutores pode ampliar as oportunidades de comunicação, personalização e motivação dos alunos.*

PALAVRAS-CHAVE: *Educação de tradutores. Digitalização. Inteligência artificial (IA). Formação em tradução. Pós-edição de tradução automática.*

RESUMEN: *Este artículo explora la posedición de la traducción automática por parte de estudiantes como medio para desarrollar la competencia profesional de futuros traductores. El estudio busca fundamentar el uso de sistemas de traducción automática basados en IA para la formación de habilidades profesionales esenciales. Se realizó un experimento didáctico con estudiantes de traducción, donde los participantes poseditaron textos traducidos automáticamente para identificar errores y proponer correcciones. Los hallazgos muestran que esta capacitación ayuda a los estudiantes a reconocer las limitaciones de las herramientas tecnológicas y a desarrollar habilidades de edición crítica, enfatizando que los traductores no pueden depender únicamente de la automatización. El estudio también destaca el potencial de los recursos en línea basados en IA, que pueden apoyar la formación de traductores al proporcionar entornos de edición interactivos. Se concluye que la IA representa una valiosa tecnología de aprendizaje digital, capaz de realizar tareas rutinarias, simular escenarios profesionales y optimizar las trayectorias de aprendizaje individuales. La integración de herramientas de IA y redes neuronales en la formación de traductores puede ampliar las oportunidades de comunicación, personalización y motivación de los estudiantes.*

PALABRAS CLAVE: *Formación de traductores. Digitalización. Inteligencia artificial (IA). Formación en traducción. Posedición de la traducción automática.*

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INTRODUCTION

The translation market is rapidly evolving, yet changes in the education system do not always align with the demands of the translation services industry, resulting in inevitable challenges that are gradually being addressed. Currently, there is a certain devaluation of the profession due to the growing discourse around the role of artificial intelligence (hereinafter AI) in translation (Gudkov, 2022; Kupriyanovsky et al., 2017). Translation quality has declined, and employers often struggle to accurately assess the skill levels of certified translators (Nechaeva & Stepanova, 2017). On the other hand, the translation industry is setting new standards for specialist training, with increasing focus on the use of modern digital technologies (Gavrilenko, 2017, 2018).

These innovations significantly enhance student engagement in the learning process and develop their ability to work with various information sources. At the same time, modern technologies have become valuable assistants in education, improving its quality and elevating it to a new level. Currently, there is a boom in the development of neural networks and chatbots across many spheres, including education (Godwin-Jones, 2022), and their numbers continue to grow every day.

AI tools can generate lesson plans, presentations, images, texts, questions, mind maps, and other teaching materials in seconds based on user input (Shefieva & Isaeva, 2020). Chatbots can support dialogue, answer questions, comment on completed tasks, and provide suggestions for improvement. Understandably, many educators are concerned: students can use AI to write essays and complete other assignments intended to develop language skills (Barrot, 2023). However, AI also offers opportunities to enhance the professional training of future translators.

Examples include DeepL, Gemini, DeepSeek, or ABBYY TextGrabber—an app that turns a smartphone into an intelligent scanner, allowing users to quickly scan documents, receipts, books, and dynamically translate them into the desired target language (Fomin & Sadovikov, 2022). The impact of modern technologies on the translation industry and the profession is becoming increasingly pronounced. Tools that assist translators are continually being improved by their developers to maximize their efficiency.

Despite the rapid emergence of AI tools in translation education, the pedagogical foundations for teaching post-editing remain underdeveloped. While technological solutions are readily available, practical teaching methods and structured guidelines for integrating these tools into the translator training curriculum are still evolving. This study aims to bridge that gap by offering a practical case and encouraging further pedagogical development in this field.

LITERATURE REVIEW

The integration of AI into the educational process is an inevitable consequence of the digitalization of education. Scientific and methodological literature highlights that this digitalization is transforming many professions, including that of the translator (Alekseeva, 2020). Key areas of this transformation include the development of online educational platforms and the replacement of live professionals with virtual reality and artificial intelligence (Crompton et al., 2024). In the context of AI use, the traditional roles of educators are changing. New roles and responsibilities are emerging—such as tutor, moderator, educational pathway designer, project-based learning organizer, and coordinator of online educational platforms (Kirichenko & Sigacheva, 2020).

Researchers have identified new opportunities for translation students in the context of digitalized education (Shovgenina & Novozhilova, 2013); clarified the possibilities of using modern information technologies in training future philologists (Belyaeva & Kamshilova, 2018); systematized the specific features of training future translators in light of current trends in the translation industry (Belyaeva & Kamshilova, 2023); highlighted the potential of chatbots in the education of philologists and translators (Sysoev & Filatov, 2023); and grouped modern trends in translation studies and their impact on translator work (Dong, 2014; Garbovsky, 2019; Grishina, 2021).

Scholars note that due to their capabilities, AI tools can be successfully applied in the training of future translators (Nechaeva & Svetova, 2018). Primarily, this includes automated and machine translation using CAT tools (Kolin et al., 2021). However, as noted in (Kamshilova & Belyaeva, 2023), machine translation often results in literal renditions that may contain serious linguistic errors, necessitating human intervention to improve translation quality. Nonetheless, from the researchers' point of view, machine translation helps increase productivity, facilitates collaboration in professional settings, and enhances digital competence (Nechaeva & Svetova, 2018).

Researchers (Khudyakov, 2019) emphasize the growing significance of machine translation not only in everyday contexts, such as when individuals travel abroad, but also in professional life. According to (Hutchins, 2005), an increasing number of individuals and companies across various industries are utilizing machine translation systems. Large companies even develop proprietary software tailored to the specific needs of their industries. As stated in (Panasenkov, 2019), machine translation can now be regarded as an effective auxiliary translation tool, capable of easing and improving the work of human translators. At the same time, researchers (Shevchuk & Nikiforova, 2021) stress that raw machine translation still cannot be considered equivalent to human translation, and that using machine translation in

professional contexts without post-editing may lead to negative reputational, financial, legal, or political consequences.

The aim of this article is to provide a theoretical and practical rationale for the use of machine translation systems based on AI technologies in developing the professional competence of future translators.

RESEARCH METHODS

The primary research method used was a didactic experiment. Ten students majoring in "English Philology" participated in the experiment. Their task was to independently post-edit a machine translation of a text taken from an English-language website. The machine translation provided to the students for post-editing had been prepared by a translation instructor using the DeepL translator. Upon review, six incorrect segments were identified in the machine-translated version of the text.

Students were given one hour to review the translation and independently edit it. They were instructed to visually mark the elements they believed required correction by underlining them and writing a suggested improvement next to each marked segment. While post-editing the translation, students were allowed to use their smartphones with internet access and were also provided with the original English source text.

The objectives of the didactic experiment were as follows: 1) To determine which erroneous translation choices in the machine translation students were able to identify and correct; 2) To indicate which parts they failed to correct or corrected incorrectly; 3) To assess the necessity of teaching post-editing skills for machine translations in translation classes, based on the outcomes of the experiment.

RESULTS

Table 1 presents the results of a qualitative analysis of student post-editing of machine translations. The first column contains the example number, the second column shows the original fragment of the source text, the third column lists the incorrect machine-translated fragments, and the fourth column includes the students' suggested corrections:

Table 1

Qualitative analysis of student post-editing of machine translations

No.	Source Text Fragment	Machine Translation	Student Corrections*
1	The **local court** is the lowest level of jurisdiction (...)	The local court constitutes the lowest level of the judicial system. (...)	The local court constitutes the lowest level of the judicial system. (...)
			The district court constitutes the lowest level of the judicial system. (...)
2	Civil proceedings are generally only decided by **single judges** at the district court.	In civil proceedings before the district court, decisions are generally rendered solely by single judges.	In civil proceedings before the district court, decisions are generally rendered solely by single judges.
			In civil proceedings before the district court, decisions are generally rendered only by panels composed of single judges.
			In civil proceedings before the district court, decisions are generally rendered solely by judges sitting individually.
3	This is also possible in the context of criminal proceedings, although lay judges' courts can also be consulted in this case.	This is also possible in the context of criminal proceedings; however, in such cases, consultation with courts composed of lay judges may also be sought.	This is also possible in criminal proceedings; however, in such cases, consultation with magistrates' courts may also be sought.
			This is also possible in criminal proceedings, in which decisions may likewise be rendered by a court of lay judges.
			This is also possible in criminal proceedings, but recourse may also be made to courts with lay judges.
			This is also possible within the framework of criminal proceedings, although consultation on this matter may also be sought from magistrates' courts.
			This is also possible in criminal proceedings, but in such cases the involvement of lay judges is likewise possible.
			This is also possible in criminal proceedings, where lay assessors may serve as an auxiliary court.
4	According to Court Constitution Act, both civil cases (...)	According to the Law on the Organization of the Judiciary (...)	<u>According to the Law on the Organization of the Judiciary (...).</u>
			According to the Law on Courts of General Jurisdiction (...).

Table 2

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5	(...) family matters and **matters of voluntary jurisdiction** (...)	(...) family matters and matters of voluntary jurisdiction (...)	(...) family matters and matters of voluntary jurisdiction (...)
			(...) family matters and matters falling within the competence of general courts (...)
			(...) family matters and non-contentious matters (...)
6	The District Court is also responsible for matters of voluntary jurisdiction	The district court also hears cases of voluntary jurisdiction.	The district court also hears non-contentious judicial matters.
			The district court also hears matters of voluntary jurisdiction.
			The district court is also responsible for non-contentious justice.
			The district court also has jurisdiction over non-contentious matters.

Note. Author's own research. Correct suggestions are shown in bold, incorrect ones are *underlined*. Repeated student suggestions were not duplicated in the table but were included numerically in Table 2.

Table 2
Quantitative analysis of student post-editing of machine translations

No.	Corrected	Corrected %	Not corrected or corrected incorrectly	Not corrected or corrected incorrectly %
1	9	90%	1	10%
2	4	40%	6	60%
3	2	20%	8	80%
4	5	50%	5	50%
5	6	60%	4	40%
6	1	10%	9	90%

Note. Author's own research.

As seen in the tables above, students experienced the least difficulty with correcting the first example, specifically identifying the correct equivalent for *local court* as *окружной суд* (90% of corrections were accurate). The second most successfully corrected term was *matters of voluntary jurisdiction*, interpreted as *бесспорные дела* (60% correct), followed by the fourth example involving the name of the law *Court Constitution Act*, translated as *Закон о судах общей юрисдикции* (50% correct).

The third example proved particularly challenging for students—80% of the corrections were either missing or incorrect. Although students recognized the need to edit the machine translation fragment, many of their changes distorted the original meaning. Students also faced significant difficulty with the second example—60% of the translations were either omitted

or incorrect. Most students retained the DeepL translation of *single judges* as *единоличные судьи* without modification.

DISCUSSION

Today, translators have access to an increasing number of modern tools that simplify and enhance their work, making it essential for professional translators to be proficient in using contemporary translation technologies. Therefore, it is reasonable to equip educational institutions with the necessary technical and technological resources, as only in such conditions can education be provided that meets the modern needs and capabilities of the translation services market—namely, industry-focused education that combines science and business. Of course, the challenge of ensuring such conditions largely falls on the shoulders of educators, who must, through carefully chosen exercises in translation classes, motivate students (especially in the post-pandemic period) to use modern technologies in the learning process. Possibly, the closer classroom realities and teaching methods align with professional practice, the more motivating this will be for learners.

As demonstrated by the training experiment described in this article, students are capable of post-editing machine translations to some extent, though not always with complete accuracy. The goal of post-editing training should be to help students understand that despite the abundance of technological tools, translators cannot rely on them alone. Post-editing exercises should include training on how to insert specific segments of text into machine translation software in ways that affect the accuracy of the resulting translation, as discussed in studies (Nechaeva & Svetova, 2018; Panasenkov, 2019; Shevchuk & Nikiforova, 2021).

Moreover, it is important that both students and teachers engage in the post-editing of machine translations during translation classes, paying particular attention to the nature of the text being translated (such as the presence of specialized terminology, foreign-language names of legal acts, and the structural divisions of legal texts into paragraphs, sections, clauses, letters, etc.).

To ensure that post-editing develops into a professional-level competence, translation educators must adopt structured scaffolding strategies. As Chernova et al. (2025) demonstrate, carefully staged learning activities such as online quests and guided editing routines contribute significantly to students' motivation and confidence in tech-mediated learning. In translator training, this could involve moving from basic error detection exercises to full-document post-editing tasks with increasing complexity and specificity. Such scaffolding not only builds skills incrementally but also supports self-regulated learning, which is essential when working with AI-driven tools that offer multiple translation variants.

Moreover, attention should be given to how different editing tools—such as Grammarly, DeepL, or ChatGPT—affect the stylistic and grammatical awareness of students. Litwinowa et al. (2022) found that exposure to electronic editors significantly improved stylistic precision and grammatical control in translation students. Integrating these tools in post-editing modules helps learners internalize linguistic standards and reflect critically on how AI generates language. At the same time, adapting digital pedagogies to students' evolving comfort levels with platforms—such as Moodle, as explored by Borodina et al. (2022) can ensure that implementation remains both responsive and sustainable across different phases of instruction.

Creating a psychologically safe and culturally responsive digital learning environment is also key. Ling et al. (2024) emphasize that variable digital technologies must be adapted to ensure psychological comfort, especially when learners are asked to critique or override machine outputs. In multicultural contexts like Kazakhstan, Zhuzeyev et al. (2024) argue that vocational training, including translator education, must reflect national characteristics and ethnopedagogical traditions. This suggests that AI-integration into translator training should not be one-size-fits-all but must be flexible enough to incorporate cultural and linguistic specificity, peer collaboration, and the lived realities of the learners.

Translation students must learn which elements of a particular text type require special attention during post-editing, which sources to use to verify proposed equivalents, and how to work with machine translations stylistically to produce a final product that meets both the translator's and the client's expectations. The earlier students become familiar with the possibilities—and limitations—of using modern translation technologies, the better equipped they will be during their academic training and later in professional practice.

It is worth noting that there are now several highly effective online tools for editing texts in foreign languages, which use AI technologies and can support the development of future translators' professional competence, especially in the context of localization.

One such tool is Grammarly, which detects over 150 types of errors, including grammar, spelling, punctuation, writing style, and sentence structure. When it finds mistakes, Grammarly provides suggestions for corrections and offers various alternatives. Working with this service allows students to analyze their own texts and develop critical thinking skills.

QuillBot's AI is an AI-based paraphrasing tool that helps students edit and adjust the tone of their text for better clarity and comprehension.

Chatbots can also support foreign language acquisition as tools of mobile learning. For example, the Multitran bot enables automatic work with online dictionaries. It outputs all possible translation options and meanings, replicating the core functions of the Multitran bilingual dictionary system. andyRobot focuses on practicing conversational English by offering

students everyday topics (Weather, Hobbies, Work, etc.) to discuss. A virtual teacher allows daily grammar lessons with explanations and follow-up quizzes. With EnglishSimpleBot, students can read English texts, mark unfamiliar words for further study in a special mode, take topic-based quizzes, and improve grammar skills. These bots can "converse" with students at timed intervals, assess knowledge at specified times, track learning progress, and automatically notify instructors of student performance.

There are also AI tools not originally designed for language learning that can nevertheless be repurposed to enhance the system of translator training. One such tool is ChatGPT, which can be used in universities for training philologists and translators. Experts argue that properly formulated queries to ChatGPT can help translation students quickly and accurately edit texts with specialized terminology, whether translated into or out of their native language (Sysoev & Filatov, 2023).

Researchers exploring the use of ChatGPT in translator education are convinced that neural networks will become an integral part of education at all levels—just as computational functions once became fundamental to computer use (Kirichenko & Sigacheva, 2020). Study (Barrot, 2023) notes that text generation, analysis, and evaluation systems serve effectively as catalysts for exploratory thinking, integrators, and optimizers of cognitive operations, assisting in solving complex cognitive and innovative tasks. Study (Fomin & Sadovikov, 2022) demonstrates that ChatGPT accelerates entry into new areas of knowledge—its dialogue capabilities allow users to identify relevant questions and formulate hypotheses.

Since one of ChatGPT's key features is its ability to generate context-sensitive responses, it remembers previous messages and replies based on that context, creating natural and coherent conversational situations. This feature allows teachers and students to interact with a "virtual interlocutor": holding discussions, asking and answering questions on various topics.

With ChatGPT, students can receive additional practice and support outside the classroom, improve reading, writing, and speaking skills, expand their vocabulary, and refine their communication style. In the classroom, however, as researchers rightly note, the teacher should remain the key organizer of the educational process, serving as a mentor and expert in translation instruction (Shovgenina & Novozhilova, 2013).

In addition to programs for student learning, there are also AI-based tools to assist teachers. One such tool is the Twee platform, specifically designed to facilitate the creation of tasks related to foreign language learning. Twee can generate texts and accompanying questions (open-ended, multiple choice, true/false), and it also produces lexical and grammar exercises such as gap-fills, word-definition matching, bracket expansions, and sentence reordering. The platform offers video transcriptions, video-based questions, interesting facts, famous quotes on selected topics, discussion prompts, pros/cons lists, essay topics,

and more. However, the tasks generated by Twee should be carefully reviewed, as not all suggested didactic cases are ready for immediate classroom use without revision. Nonetheless, this tool can significantly reduce lesson preparation time and inspire creativity by offering a wide range of ideas and tasks.

Despite some limitations, AI should be viewed as an innovative technology in the professional training of future translators. As with any technical innovation, it's important to remember that the goal of AI in education is to assist humans, not to eliminate pedagogical interaction or dismantle the nurturing and developmental environment created in universities. As noted in (Nechaeva & Stepanova, 2017), educational innovation is not only about introducing new technologies into the learning process but also about changing pedagogical approaches so that students acquire the competencies and skills necessary for success in a competitive translation market.

In this context, academic interest in AI as a potentially effective area of digital educational technology continues to grow, as researchers point out (Godwin-Jones, 2022). We maintain the position that AI in the system of professional translator education is a digital learning technology capable of performing basic logical operations, engaging in conversation with students (including in foreign languages), simulating various professional scenarios, processing large volumes of data, and retrieving requested information almost instantly—all of which can significantly assist participants in the educational process with routine tasks.

When discussing the role of artificial intelligence in translator education, it is important to emphasize the necessity of integrating AI into foreign language learning based on neural network capabilities. The advantages of AI in updating and enhancing translator education are indisputable: expanding opportunities for productive foreign language communication; accounting for students' individual characteristics, interests, and language proficiency levels; motivating students to study languages and linguistic phenomena, and so on.

The availability of university classrooms equipped with modern computer technology, tablets, and smartphones for educational use is a key condition for developing the ability to apply modern technological solutions, especially during translation courses. The best possible preparation of future translators for employment or for running their own business in today's translation market requires not only knowledge of solid translation principles and practices but also digital proficiency, the ability to critically assess and use available translation tools as support aids, rather than as infallible sources or full replacements for developing one's own translation competence and subject-matter expertise.

CONCLUSION

Translator education is currently undergoing an active transformation of its methodological and pedagogical paradigm. AI is already being used in the practice of teaching foreign languages at universities, and its presence can no longer be ignored. Therefore, it is necessary to initiate a scholarly discussion on the future role of AI in developing the professional training system for future translators.

We consider the use of automated translation systems appropriate for deepening students' translation analysis skills and for identifying and correcting errors in machine-translated texts. However, it is crucial that students independently edit and correct the flaws in the output. In university-level translator training, AI can be useful for practicing international translation, enabling students to translate into and from different languages. It is also reasonable to incorporate language assistants (such as ChatGPT) that provide helpful tips and explanations to students.

It is clear that fundamental research is needed to develop effective methods of interaction and collaboration between future translators and AI. Despite its rapid advancement, the idea that educational quality can be improved by relying solely on technology is a dangerous path. It is essential to preserve and support the rights of learners to freely critique, make unconventional decisions, engage in meaningful communication, and receive pedagogical support in their personal development as translators.

REFERENCES

Alekseeva, I. S. (2020). Problemy obucheniya perevodu v sovremennom mire [Teaching translation in the modern world]. In *Yazyk i kul'tura v epokhu globalizatsii* [Language and culture in the age of globalization] (pp. 7–12). St. Petersburg State University of Economics.

Barrot, J. S. (2023). Using ChatGPT for second language writing: Pitfalls and potentials. *Assessing Writing*, *57*, 100745. https://doi.org/10.1016/j.asw.2023.100745

Belyaeva, L. N., & Kamshilova, O. N. (2018). Problemy i perspektivy professional'noy podgotovki lingvotekhnologa [Problems and perspectives of language worker professional training]. *International Journal of Open Information Technologies*, *6*(12), 35–42.

Belyaeva, L. N., & Kamshilova, O. N. (2023). Mashinnyy perevod v sisteme obucheniya: protsedury i resursy [Machine translation in education: Procedures and resources]. *Izvestia: Herzen University Journal of Humanities & Sciences*, (208), 230–239. https://doi.org/10.33910/1992-6464-2023-208-230-239

Borodina, M., Ivashkina, T., Golubeva, T., Afanasiev, O., Pronina, Y., & Berlov, K. (2022). Changes in the use of the Moodle platform by students at different levels of training depending on the period of restrictions due to Covid-19. *Revista Conrado*, *18*(88), 125–132.

Chernova, O., Sabitova, A., Kurenkova, E., & Khaliapin, A. (2025). Pedagogical scaffolding through online quests and its influence on students' learning motivation in the context of educational digitalization. *European Journal of Contemporary Education*, *14*(3), 249–257.

Crompton, H., Edmett, A., Ichaporia, N., & Burke, D. (2024). AI and English language teaching: Affordances and challenges. *British Journal of Educational Technology*, *55*(6), 2503–2529. https://doi.org/10.1111/bjet.13460

Dong, C. (2014). Computer-aided translation in students' practical translation competence. In *Proceedings of the 3rd International Conference on Science and Social Research* (pp. 494–496). Atlantis Press. https://doi.org/10.2991/icssr-14.2014.115

Fomin, M. A., & Sadovikov, N. E. (2022). Vozmozhnosti primeneniya tekhnologiy iskusstvennogo intellekta pri izuchenii inostrannogo yazyka v vuze [Possibilities of using artificial intelligence technologies in foreign language learning at universities]. *Molodezhnaya nauka: tendentsii razvitiya*, (3), 6–11.

Garbovsky, N. K. (2019). "Tsifrovoy perevod": Sovremennyye realii i prognozy ["Digital translation": Present-day realities and forecasts]. In *Russkiy yazyk i kul'tura v zerkale perevoda: Proceedings of the international conference* (pp. 65–72). Moscow University Press.

Gavrilenko, N. N. (2017). Forsayt-tekhnologiya kak instrument prognozirovaniya razvitiya professii perevodchika [Foresight technology as a tool for forecasting the development

of the translator's profession]. In N. N. Gavrilenko (Ed.), *Professional'no-oriyentirovannyy perevod: real'nost' i perspektivy* (Vol. 12, pp. 58–70). RUDN University.

Gavrilenko, N. N. (2018). Tsifrovaya kompetentnost' – klyuchevoy komponent professionalizma perevodchika [Digital competence as a key component of the translator's professionalism]. *PNRPU Linguistics and Pedagogy Bulletin*, (3), 139–150. https://doi.org/10.15593/2224-9389/2018.3.12

Godwin-Jones, R. (2022). Partnering with AI: Intelligent writing assistance and instructed language learning. *Language Learning & Technology*, *26*(2), 5–24.

Grishina, N. Y. (2021). Obucheniye perevodu v usloviyakh rasprostraneniya sistem mashinnogo perevoda [Teaching translation in the context of the spread of machine translation systems]. *Pedagogical Journal*, *11*(6), 142–149.

Gudkov, N. N. (2022). Iskusstvennyy intellekt vs lichnost' perevodchika: problema zameny zhivogo spetsialista tekhnologiyami budushchego v oblasti perevoda [Artificial intelligence vs. the translator's personality]. In Aktual'nyye problemy pedagogiki, psikhologii i perevodovedeniya: *Proceedings of the international scientific and practical conference* (pp. 188–195). Asterion.

Hutchins, W. J. (2005). Current commercial machine translation systems and computer-based translation tools: System types and their uses. *International Journal of Translation*, *17*(1–2), 5–38.

Kamshilova, O. N., & Belyaeva, L. N. (2023). Mashinnyy perevod v epokhu tsifrovizatsii: novyye praktiki, protsedury i resursy [Machine translation in the era of digitalization]. *Terra Linguistica*, *14*(1), 41–56. https://doi.org/10.18721/JHSS.14105

Kirichenko, I. A., & Sigacheva, N. A. (2020). Tsifrovizatsiya perevoda s angliyskogo na russkiy yazyk [Digitization of translation from English into Russian]. *Kazan Journal of Young Researchers*, *4*(3), 27–37.

Khudyakov, N. A. (2019). Postredaktirovaniye mashinnogo perevoda: teoreticheskiye aspekty [Machine translation post-editing]. *Filologicheskiy aspekt*, *1*(45), 232–239.

Kolin, K. K., Khoroshilov, A. A., Nikitin, Yu. V., Pshenichny, S. I., & Khoroshilov, A. A. (2021). Iskusstvennyy intellekt v tekhnologiyakh mashinnogo perevoda [Artificial intelligence in machine translation technologies]. *Social Novelties and Social Sciences*, (2), 64–80. https://doi.org/10.31249/snsn/2021.02.05

Kupriyanovsky, V. P., Sukhomlin, V. A., Dobrynin, A. P., Raykov, A. N., Shkurov, F. V., Drozhzhinov, V. I., Fedorova, N. O., & Namiot, D. E. (2017). Navyki v tsifrovoy ekonomike i vyzovy sistemy obrazovaniya [Skills in the digital economy]. *International Journal of Open Information Technologies*, *5*(1), 19–25.

Litwinowa, M., Gasanbekov, S., Lawrencenko, S., Shtukareva, E., Borodina, M., & Golubeva, T. (2022). Improving the stylistic and grammar skills of future translators depending on the use of electronic editors. *Revista Conrado*, *18*(86), 125–130.

Ling, P., Rabadanova, R., Otcheskiy, I., Basmanova, A., Biltekenova, G., & Biltekenova, G. (2024). Implementation of variable technologies to improve the psychological safety of the educational environment. *Educação & Formação*, *9*, e14234. https://doi.org/10.25053/redufor.v9.e14234

Nechaeva, N. V., & Stepanova, M. M. (2017). Aktual'nyye napravleniya razvitiya vuzovskoy podgotovki perevodchikov [Current trends in university-level translator training]. In N. N. Gavrilenko (Ed.), *Professional'no-oriyentirovannyy perevod: real'nost' i perspektivy* (Vol. 12, pp. 168–179). RUDN University.

Nechaeva, N. V., & Svetova, S. Y. (2018). Postredaktirovaniye mashinnogo perevoda kak aktual'noye napravleniye podgotovki perevodchikov v vuzakh [Post-editing of machine translation]. *Teaching Methodology in Higher Education*, *7*(25), 64–72.

Panasenkov, N. A. (2019). Opyt obucheniya studentov-lingvistov postredaktirovaniyu mashinnogo perevoda [Teaching machine translation post-editing]. *Pedagogical Education in Russia*, (1), 55–60. https://doi.org/10.26170/po19-01-08

Shefieva, E. Sh., & Isaeva, T. E. (2020). Ispol'zovaniye iskusstvennogo intellekta v obrazovatel'nom protsesse vysshikh uchebnykh zavedeniy [Use of artificial intelligence in higher education]. *Obshchestvo: Sotsiologiya, psikhologiya, pedagogika*, *10*(78), 84–89.

Shevchuk, E. V., & Nikiforova, Zh. A. (2021). Postredaktirovaniye i tipichnyye oshibki v avtomatizirovannom perevode [Post-editing and typical errors]. *Teaching Methodology in Higher Education*, *10*(39), 46–54.

Shovgenina, E. A., & Novozhilova, A. A. (2013). Obucheniye studentov-perevodchikov rabote s elektronnymi resursami [Teaching translation students to work with electronic resources]. *Bulletin of Volgograd State University. Series 6: University Education*, (14), 70–76.

Sysoev, P. V., & Filatov, E. M. (2023). Chat-boty v obuchenii inostrannomu yazyku [Chatbots in foreign language teaching]. *Tambov University Review: Series Humanities*, (1), 66–72. https://doi.org/10.20310/1810-0201-2023-28-1-66-72

Zhuzeyev, S., Zhailauova, M., Makasheva, A., Kydyrbaeva, K., Omarova, G., & Suleimenova, B. (2024). Influence of digitalization on the vocational training of primary school teachers. *Revista on Line de Política e Gestão Educacional*, *28*, e023038. https://doi.org/10.22633/rpge.v28i00.19905

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