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METHODS AND TECHNOLOGIES OF TEACHING TRANSLATION IN DIGITAL EDUCATION

The article embraces a comprehensive study of methods and technologies of teaching translation in the context of digital transformations in modern education. The relevance of the topic results from a growing role of digital tools in the professional activities of translators and the need to update educational programs in accordance with the challenges of the globalized labor market. The paper analyzes the theoretical foundations necessary for the formation of translation competence in the digital environment. In particular, the concept of “translation competence” is clarified and key models of technological training of future translators are outlined. The focus is on methodological approaches that ensure the effective use of digital technologies in teaching, such as blended learning, the project-based model, and other tasks focused on real-life translation problems. The article provides a comparative analysis of traditional and innovative translation training methods, including the use of CAT tools, machine translation systems, post-editing technologies, and artificial intelligence tools. The possibilities of interactive technologies such as VR environments, online platforms, digital enclosures and automated assessment tools are also outlined. The advantages of using digital technologies have been identified, in particular, improving the quality of learning, flexibility of the educational process and motivation of students. The generalized analysis made it possible to develop practical recommendations for integrating digital technologies into translation courses, focused on the formation of relevant professional competencies. The results of the study are aimed at optimizing translation teaching methods and can be used in the training of philologists, translation teachers, and educational program developers.

Keywords: translation competence, digital technologies / digitalization of education, translation training, CAT tools, machine translation. post-editing, artificial intelligence in education, blended learning.

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МЕТОДИ І ТЕХНОЛОГІЇ НАВЧАННЯ ПЕРЕКЛАДУ В УМОВАХ ЦИФРОВОЇ ОСВІТИ

Статтю присвячено комплексному дослідженню методів та технологій навчання перекладу в контексті цифрових трансформацій у сучасній освіті. Актуальність теми зумовлена зростанням ролі цифрових інструментів у професійній діяльності перекладачів та необхідністю оновлення освітніх програм відповідно до викликів глобалізованого ринку праці. У статті аналізуються теоретичні основи формування перекладацької компетентності в цифровому середовищі, зокрема уточнюється поняття «перекладацька компетентність» та окреслюються ключові моделі технологічної підготовки майбутніх перекладачів. Основна увага приділяється методологічним викликам, які мають забезпечити ефективне використання цифрових технологій у навчанні, таких як змішане навчання, колаборативні моделі та завдання, орієнтовані на реальні проблеми перекладу. У

статті наведено порівняльний аналіз традиційних та інноваційних методів навчання перекладу, з урахуванням використання CAT-інструментів, систем машинного перекладу, технологій пост-редагування та інструментів штучного інтелекту. Крім того, окреслено можливості інтерактивних технологій, таких як середовищ віртуальної реальності, онлайн-платформ, цифрових корпусів та автоматизованих інструментів оцінювання. Визначено переваги використання цифрових технологій у освітньому процесі, зокрема, для покращення якості навчання, гнучкості навчального процесу та мотивації студентів. Узагальнений аналіз дозволяє зробити висновок про необхідність інтеграції цифрових технологій у курси перекладу, які мають бути орієнтовані на формування відповідних професійних компетенцій. Результати дослідження спрямовані на оптимізацію методів викладання перекладу та можуть бути використані у підготовці філологів, викладачів перекладу та розробників освітніх програм.

Ключові слова: перекладацька компетенція, цифрові технології / цифровізація освіти, навчання перекладу, CAT-інструменти, машинний переклад, пост-редагування, штучний інтелект в освіті, змішане навчання.

Relevance. The digitalization of education has become a defining trend in the development of modern society, significantly affecting all levels of professional training, including the training of translators. Technological progress, the growing role of artificial intelligence, the spread of CAT tools, machine translation systems, and innovative digital platforms necessitate a rethinking of traditional translation teaching methods. In this perspective, the formation of the ability of future translators to effectively use modern digital tools in their professional activities becomes **relevant and necessary.** Shaping updated skills requires the improvement of the educational content, the implementation of effective and appropriate teaching methods. The long-term perspective of the research is the need to ensure the competitiveness of future translators / specialists in the global labor market.

Problem statement. Although there tends to be a significant amount of research focused on individual methodological aspects of translator training, the issue of integrating digital technologies into translation training still lacks a systematic wholesome analysis. Hence, it is crucial to address several issues: find out which teaching methods are most effective in the digital environment, how the use of technology affects the formation of translation competence, and what pedagogical conditions ensure the successful implementation of digital tools in the educational process.

Research review. Traditional methods of teaching translation were formed within the linguistic paradigm of the second half of the 20th century. Their essence is based on a step-by-step analysis of the text, a focus on equivalence, and normative control of the result. Eugene Nida is claimed to first come up with an idea of dynamic equivalence, according to which a translation should produce the same communicative effect on the recipient of the target text as the original. Unlike formal equivalence, which focuses on preserving the structure and vocabulary of the source text, dynamic/ functional equivalence involves adapting form for the sake of conveying content and impact (Nida, 1964, p. 165). Nida emphasized that translation is primarily a process of intercultural communication, in which clarity and naturalness for the native speaker of the target language have priority (Nida, 1964, p. 24-25). Nida's theory of dynamic equivalence is supported by Peter Newmark's model of communicative translation, which also prioritizes comprehensibility and naturalness for the reader (Newmark,

1988, p. 39). However, P. Newmark contrasts communicative translation with semantic one, prioritizing textual accuracy (Newmark, 1988, p. 45-47). Andre Lefevere emphasizes that translation is a form of rewriting, which is always subject to the ideological and poetic norms of a particular culture (Lefevere, 2016, p. 12), and argues that it is rewriting that shapes the pattern and determines which texts become culturally influential (Lefevere, 1992, p. 14-15). Susan Bassnett also claims that translation studies should consider translation as an intercultural process, not a purely linguistic operation, which always interacts with the literary and cultural system of the target language (Bassnett, 2002, p. 86).

On the other hand, according to Roksolana Zorivchak, the incorrect transmission of realia, defined as condensed units of national and cultural identity, leads to cultural decontextualization of the translated text (Зорівчак, 1989, p. 101). V'acheslav Karaban also assumes that only a high level of terminological accuracy and adherence to genre standardization while translating scientific and technical texts ensures unambiguous perception by specialists and ensures the high quality of technical translation (Карабан, 2004, p. 54). The obvious importance of a balance between accuracy and naturalness for the target audience was pointed out by Olexandr Cherednychenko, who claimed that a translation activity involves a comprehensive interpretation of the text with its stylistic and cultural parameters (Чередниченко, 2003, p. 38).

Thus, traditional methods of translation comprise explanation of rules, transformations, and techniques; dominance of reproductive exercises (sentence translation, sub-sentence translations, error analysis); focus on accuracy, normativity, linguistic correctness and should be considered as a basis for understanding translation as a linguistically and culturally motivated process.

Objectives and main tasks. The article is aimed at a critical analysis of translation teaching methods and technologies in the context of digital education. To achieve the goal the following tasks were set: to compare traditional and innovative methods of translation teaching; assess the impact of digital tools on the development of translation competence; develop recommendations for the effective implementation of digital technologies in training courses. The final outcome is a constructive contribution to the update of translator training techniques, which is targeted at enhancing the quality of professional education within the framework of contemporary information society challenges.

Presentation of the material. While it is true to say that due to the traditional theories a language base is formed, accuracy is developed, and classical transformations are highlighted, the real translation practice in this day and age needs more interaction, use of technological components as well as applicable translation techniques. Innovative methods are grounded on constructivist and socio-cognitive learning models; they integrate digital tools of a professional translator and are focused on the formation of competencies defined, in particular, by the European Translation Network EMT (European Master's in Translation Competence Framework, 2022-2023).

The key innovative translation practices are based on the balance between theoretical postulates of social cognitive theory inferred from a combination of psychology and pedagogy as well as translation didactics.

Albert Bandura, who is considered to be the founder of social cognitive theory, claims that «most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed» (Bandura, 1977, p. 34). According to a social-cognitive approach that involves attention (focusing on the model), memorization (retaining what is seen), performance (the ability to perform an action) and motivation (the conscious desire to act) learning occurs through imitation that depends on observing rewards or punishments called "vicarious reinforcement". Thus, "observational learning" is a process in which a person learns by observing the behavior of specialists as well as becoming aware of which models should be applied to translation since according to social cognitive theory, "human functioning is explained in terms of a model of triadic reciprocal causation." (Bandura, 1986, p. 76). A. Bandura's ideas were supported and further developed by Donald Kiraly who believes that «translator education must shift from transmission of knowledge to collaborative knowledge construction» (Kiraly, 2018, p. 32) – project in which teacher-researchers, student-researchers and student-subjects collaborated on a research project in a working-group format to investigate constructs related to the translator's psychological 'self'. The pedagogical approach adopted for managing the working group, based on social constructivist principles and a view of knowledge development as an emergent, collaborative process, was found to have boosted the students' self-efficacy beliefs regarding themselves as researchers, as the results of a focus group analysis revealed.

Collaborative project-based translation training, where students and teachers take roles of researchers and subjects, is aimed at investigating constructs related to the translators' personalities, their 'selves'. Thus, the students who are able to participate in such social practices that characterize real-world translation are reported to boost the self-efficacy beliefs (Kiraly, D., Soler, M.D.M.H., 2019, p. 269). This approach is called socioconstructivist, but it is based on the sociocognitive principle: knowledge is formed in collective activity. E. Wenger defines the idea as the statement that "learning is a process of participation in communities of practice, not mere acquisition of knowledge." (Wenger, 1998, p. 65).

The sociocognitive model of translation learning pioneered by A. Bandura fits perfectly with the EMT competency framework as it provides: authenticity of learning situations; development of team and communicative interaction; technological and research competence; integration of reflection and self-regulation; professionally oriented, project-based learning. D. Kiraly's socio-cognitive model was also integrated into translation education, meeting the requirements explained in The European Master's Network in Translation (EMT 2022-2023). The latter identifies six key translation competences:

1) translation competence formed in real or near-real translation projects, when students work like real translators, analyzing the client brief, editing, performing a certain professional activity (see Rudina, 2017, p. 61);

2) language & textual competence implies that work with authentic texts and team discussion of solutions enhances understanding of discourse and genre and adds to textual adaptability;

3) information mining competence involves active information mining, such as terminology search, source checking, use of corpora, making the formation of literacy a central component;

4) technological competence means the ability to work with CAT tools, online corpora, glossaries and the knowledge how to use the same technologies as professionals, for instance, Trados, MemoQ, MT+PE;

5) Intercultural competence emphasizes the importance of cultural mediation, involving the interaction of students with different cultural backgrounds. and analyzing cultural aspects of translation as an essential stage in the project approach;

6) Interpersonal competence lies at the center of the model is cooperation and serves as a coordination of roles, negotiations, joint decision-making, reflection. The student becomes an active member of the team (EMT Competence Framework 2022, p. 4)

It should be noted that while Donald Kiraly advocates for socioconstructivism and offers the project-based learning (PBL), which involves working with real translation projects, team dynamics, role models of client, editor, etc., Anthony Pym believes that translation competence is a set of choice strategies, emphasis on autonomy and realistic tasks, offering a typology of translation solutions (Pym, 2018, p. 50-58). Having analyzed D. Kiraly's and A.Pym's approaches, it is logical to infer that present educational technologies are able to develop communication skills through an online interactive learning environment, implemented on various educational platforms such as Coursera and edX that offer structured courses from universities and institutions. The DeepL Language AI platform https://www.deepl.com/en/translator is reported as the most accurate platform for translation. The Flash platform involves the organization of live communication through audio and video media, use of a virtual whiteboard, educational editing of formats such as Powerpoint, PDF, MSWord, MSExcel and video files (Башманівський, Вигівський, Моркотун, 2012, p. 90-91)

The CAT-oriented tools (SDL Trados, MemoQ, Wordfast) provide the development of technological competence and translation memory skills (see Zappatore, 2024). Kaibao Hu justifies the use of corpora in teaching translation: building corpora, searching for contextual examples, analyzing collocations and terminology as teaching exercises (Hu, 2016). Lynn Bowker emphasizes that corpora are a key tool for building terminological and stylistic consistency in translation, which allows students to independently identify patterns of usage and translate intuitive decisions into formalized strategies (Bowker, 2020, p. 69). The researcher argues that the corpus model promotes the development of critical thinking and information

retrieval skills and emphasizes that working with corpora prepares students for the real professional standards of the translation industry (Bowker, 2020, p. 73).

In terms of machine translation (MT), numerous researches claim that the issues of post-editing (PE) pose significant differences between different types of machine translation tools, and assumes that they are highly likely to help a translator estimate the time required for further editing and determine whether a particular program is right for your specific situation (Kirchhoff, 2024, p. 393-395). A comparative analysis of the effectiveness of two machine translation programs DeepL Translate and Microsoft Translate was conducted by M. Jafarova The researcher proves that translating specialized English texts into Ukrainian require special skills for defining the appropriateness of a particular program (Джафарова, 2024, p. 76). Both machine translation and AI-based tools have the potential to become powerful tools for modeling authentic translation situations, in particular for interpreting (Стойка 2025, p. 226). By building a digital teaching resource library, implementing flipped classrooms, and creating a virtual simulation exercise platform, teaching quality and effectiveness can be improved, allowing students to have a richer learning experience (Li, Chen, 2024, p. 19). Thus, machine translation combined with post-editing can be integrated into the training of future translators as a tool for developing a critical analysis of automated solutions and understanding their limitations. Students can perform tasks by comparing raw machine translation and a professional human version, improving editing skills, stylistic alignment, and terminological accuracy. This approach models modern workflows in the translation industry, where MT+PE is the standard, and allows for the formation of technological competence in accordance with EMT requirements.

The key innovative translation practices include:

1) project-based learning (PBL);
2) task-based translation training;
3) CAT tools integration;
4) machine translation and post-editing practices;
5) AI-assisted assessment and feedback methods;
6) VR/AR and immersive environments.

Digital technologies open up new opportunities for improving the quality of education. The integration of digital technologies into foreign language teaching is a promising path to the transformation of education, which not only improves the learning process but also helps prepare students for the challenges of a globalized world. This evolution of teaching methodology is an important contribution to ensuring the quality of modern education. Their usage highly motivates students - mostly digital natives; stimulates the real market practice; enhances digital literacy; gives a possibility of teamwork as well as iterative forms of assessment; and develops critical thinking about machine translation. The use of CAT tools makes it possible to simulate the working realities of a translator during training. For example, SDL Trados Studio, MemoQ, Wordfast allow students to learn how to work with translation memory, term

bases, auto-substitution, consistency control, which meets the requirements of the modern translation market.

In collaborative translation projects (PBL) students are encouraged to work in teams on real or simulated translation tasks: documentation, articles, web content, subtitles, etc. This allows them to learn about translation project management, editing, working with clients, deadlines, and more. While PBL focuses on forming interpersonal competencies, reflection, and professional responsibility, for developing linguistic, terminological and textual competence online corpora (parallel or monolingual), such as IATE (EU terminology base), or free corpora that develop learning skills in terminology, stylistics, collocations, genre correspondence, etc should be formed. This approach helps students "see" real examples of the use of language constructs and translation solutions.

Online platforms with video tutorials, forms for collaborative translation work, discussion forums/chats, shared documents, cloud-based translation repositories, etc. are the examples of blended/ online learning. They are used for lectures, seminars, translation practices and in combination with offline (face-to-face) learning provide flexibility, the opportunity to attract audiences from different locations, work with authentic materials, and stimulate independent learning. Machine translation together with post-editing allows students to combine speed and volume with professional quality. Students learn to translate using machine translators (e.g., DeepL, Google Translate), and then to do post-editing (editing, adapting, style alignment), which develops skills in critical evaluation of machine translation.

The need for technical resources, digital competence of the teacher, ethical issues of using AI may be seen as the obvious disadvantages.

Conclusion. An analysis of traditional and innovative translation teaching methods demonstrates a significant transformation of approaches in the training of a modern translator. Traditional methods such as comparative text analysis, the grammatical-translation approach, annotated translation, and work with authentic materials still remain an important component of professional training, as they ensure the formation of basic linguistic, textual, and cultural competencies. Thus, they provide a foundation for understanding translation as a linguistically and culturally motivated process.

However, innovative methods and digital technologies significantly expand learning opportunities, shifting the emphasis from reproductive activities to project-based, research-based, and interactive activities. For instance, the use of computer-aided translation systems (CAT-tools), corpus technologies, machine translation with post-editing, simulations of real translation environments, cloud platforms and artificial intelligence creates conditions for the formation of technological, information and service competencies defined by EMT. Such approaches promote the development of critical thinking, autonomy, translation project management skills, and teamwork. Therefore, an effective translation training model today must integrate traditional methods with innovative technology-oriented practices, which allows preparing a translator capable of working in a digital, dynamic and multidisciplinary professional

environment. Such integration provides a balance between theoretical foundations and the real needs of the modern translation industry.

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