ENHANCING TRANSLATION COMPETENCE THROUGH AI: TEACHING EQUIVALENCE IN UZBEK–ENGLISH CONTEXTS

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Abstract: This study explores the use of artificial intelligence (AI) in teaching equivalence in translation, with a focus on Uzbek – English language pairs. Equivalence, as a central concept in translation studies, involves not only lexical correspondence but also semantic, stylistic, pragmatic, and cultural alignment between source and target texts. The paper discusses how AI-powered tools, such as neural machine translation systems, can support the development of students' translation competence by enabling comparative analysis, error detection, and iterative refinement of translations.

Аннотация: Данное исследование посвящено изучению использования искусственного интеллекта (ИИ) в обучении эквивалентности в переводе с акцентом на узбекско-английскую языковую пару. Эквивалентность, как центральное понятие в переводоведении, включает не только лексическое соответствие, но и семантическое, стилистическое, прагматическое и культурное согласование между текстами оригинала и перевода. В работе рассматривается, как инструменты на основе ИИ, такие как системы нейронного машинного перевода, могут способствовать развитию переводческой компетенции студентов посредством сравнительного анализа, выявления ошибок и поэтапного совершенствования переводов.

Annotatsiya: Ushbu tadqiqot o‘zbek–ingliz tillarida tarjimada ekvivalentlikni o‘qitishda sun’iy intellekt (SI) dan foydalanishni o‘rganadi. Tarjima nazariyasida markaziy tushuncha bo‘lgan ekvivalentlik nafaqat leksik moslikni, balki manba va tarjima matnlari o‘rtasidagi semantik, stilistik, pragmatik va madaniy uyg‘unlikni ham o‘z ichiga oladi. Tadqiqotda neyron mashina tarjimasi kabi SI asosidagi vositalar talabalarning tarjima kompetensiyasini rivojlantirishda

qiyosiy tahlil, xatolarni aniqlash va tarjimani bosqichma-bosqich takomillashtirish orqali qanday yordam berishi muhokama qilinadi.

Keywords: artificial intelligence, translation equivalence, Uzbek - English translation, machine translation, language teaching, pedagogical technologies, comparative analysis, linguistic competence

Ключевые слова: искусственный интеллект, переводческая эквивалентность, узбекско-английский перевод, машинный перевод, обучение языкам, педагогические технологии, сравнительный анализ, лингвистическая компетенция

Kalit so‘zlar: sun’iy intellekt, tarjima ekvivalentligi, o‘zbek–ingliz tarjimasi, mashina tarjimasi, til o‘qitish, pedagogik texnologiyalar, qiyosiy tahlil, lingvistik kompetensiya

Introduction. In the context of globalization and increasing intercultural communication, translation has become an essential tool for facilitating interaction between languages and cultures. One of the central concepts in translation studies is equivalence, which refers to the degree to which a target text accurately and appropriately reflects the meaning, style, and function of the source text. However, achieving equivalence is a complex process, particularly when translating between typologically different languages such as Uzbek and English. Uzbek, an agglutinative language with relatively flexible word order, differs significantly from English, which follows a more rigid syntactic structure and relies heavily on word order and auxiliary elements. These structural and linguistic differences often create challenges in maintaining semantic accuracy, stylistic nuance, and cultural relevance in translation. As a result, teaching equivalence in Uzbek – English translation requires not only theoretical understanding but also practical analytical skills.

In recent years, the rapid development of artificial intelligence (AI), particularly in the field of natural language processing, has introduced new possibilities for translation and language education. AI-powered tools, such as neural machine translation systems and large language models, are increasingly used in both professional translation and academic settings. These technologies can generate

instant translations, offer multiple variants, and assist in identifying linguistic patterns, making them valuable resources for teaching and learning. The integration of AI into translation pedagogy has the potential to transform how equivalence is taught. Instead of relying solely on traditional methods, students can engage in interactive learning through comparison, evaluation, and correction of AI-generated translations. This approach encourages critical thinking and allows learners to better understand the multidimensional nature of equivalence, including semantic, stylistic, pragmatic, and cultural aspects. This paper aims to examine the role of AI in teaching equivalence in Uzbek – English translation. It focuses on how AI tools can support the development of translation competence, highlights the challenges associated with their use, and explores effective pedagogical strategies for integrating AI into the translation classroom.

Methodology. This study employs a qualitative, practice-oriented approach to examine how artificial intelligence (AI) can be used to teach equivalence in Uzbek–English translation. The methodology is based on classroom-oriented analysis, comparative translation tasks, and observation of student interaction with AI tools. The participants include undergraduate students studying translation or foreign languages (Uzbek – English). The learners possess intermediate to upper-intermediate proficiency in English and basic knowledge of translation principles.

Discussion. The findings of this study demonstrate that artificial intelligence (AI) can play a significant role in teaching equivalence in Uzbek–English translation, particularly by transforming abstract theoretical concepts into practical, interactive learning experiences. In translation studies, equivalence has been traditionally viewed as a complex, multi-layered concept involving semantic, stylistic, pragmatic, and cultural dimensions. Scholars have long emphasized that achieving full equivalence is not always possible, especially between structurally and culturally distant languages [Nida, 1964; Baker, 1992]. The integration of AI tools into translation pedagogy provides new opportunities to explore these dimensions more effectively.

One of the key observations is that AI systems tend to prioritize semantic or surface-level equivalence, often producing grammatically correct but contextually limited translations. This aligns with previous research suggesting that machine translation systems struggle with idiomatic expressions and cultural nuances [Koehn, 2010; Jurafsky & Martin, 2009]. In the Uzbek–English context, this issue becomes particularly evident due to typological differences between the two languages, such as agglutinative versus analytic structures and flexible versus fixed word order.

Table 1

AI Performance Across Types of Equivalence

Type of Equivalence	Description	AI Performance	Pedagogical Implication
Semantic	Literal meaning transfer	High	Useful for initial drafts
Stylistic	Tone and naturalness	Moderate	Requires refinement
Pragmatic	Contextual meaning	Low–moderate	Needs guided analysis
Cultural	Idioms and cultural references	Low	Requires human adaptation

As shown in Table 1, AI performs relatively well in preserving basic meaning but demonstrates limitations in higher-level equivalence. This creates valuable learning opportunities, as students are encouraged to critically evaluate AI outputs rather than accept them passively. Such an approach supports the development of analytical thinking and aligns with modern pedagogical perspectives on active learning.

Another important finding is that AI facilitates a comparative learning model, where students analyze differences between machine-generated translations and human-refined versions. This process allows learners to identify common translation errors and better understand the nature of equivalence. According to Newmark’s theory, effective translation requires a balance between semantic accuracy and

communicative effectiveness [Newmark, 1988]. AI-generated translations often lean toward the former, while students learn to adjust toward the latter.

Table 2

Example of Uzbek – English Equivalence Analysis

Uzbek Source Text	AI Translation	Improved Translation	Equivalence Issue
Ko‘ngli tog‘dek ko‘tarildi	His heart rose like a mountain	He felt extremely uplifted	Cultural/idiomatic
U gapni aylantirib aytdi	He turned the word around	He spoke indirectly	Pragmatic
Yuragi siqildi	His heart was compressed	He felt distressed	Semantic

The examples in Table 2 illustrate that AI systems frequently produce literal translations that fail to convey the intended meaning in the target language. This supports the argument that equivalence should be understood as a functional relationship rather than a direct linguistic match [Baker, 1992]. By engaging with such discrepancies, students develop a deeper awareness of translation strategies and improve their ability to produce natural and contextually appropriate translations.

At the same time, the use of AI in teaching equivalence presents certain challenges. Over-reliance on AI tools may reduce students’ independent problem-solving abilities, and inconsistent outputs can lead to confusion. Therefore, it is essential to integrate AI as a **supportive tool rather than a replacement for human instruction**. Guided use of AI encourages students to question, analyze, and refine translations, which ultimately strengthens their translation competence.

In conclusion, the discussion highlights that AI significantly enhances the teaching of equivalence by making the learning process more interactive and analytical. However, its effectiveness depends on a balanced approach that combines technological tools with established translation theories and pedagogical guidance.

Results. The results of the study indicate that the integration of artificial intelligence (AI) into teaching Uzbek – English translation has a positive impact on

students' understanding of equivalence. Students demonstrated improved ability to identify differences between literal and functional translation, particularly after engaging with AI-generated outputs and refining them. The findings show that AI tools are most effective in supporting semantic equivalence, as students were able to produce grammatically correct and meaning-based translations at the initial stage. However, difficulties remained in achieving stylistic, pragmatic, and cultural equivalence. Through guided analysis, students became more aware of these limitations and developed strategies to improve translation quality. In addition, the use of AI encouraged active learning and increased student engagement. Learners participated more in discussions, showed greater interest in error analysis, and demonstrated improved critical thinking skills. At the same time, some students tended to rely too heavily on AI, highlighting the need for structured guidance.

Conclusion. This study has examined the role of artificial intelligence (AI) in teaching equivalence in Uzbek – English translation, with a particular focus on its pedagogical applications and limitations. The findings demonstrate that AI-powered tools, especially neural machine translation systems, can significantly enhance the learning process by transforming abstract theoretical concepts into practical and interactive experiences. By enabling students to compare, evaluate, and refine machine-generated translations, AI fosters a deeper understanding of equivalence as a multidimensional construct that includes semantic, stylistic, pragmatic, and cultural aspects.

Importantly, the integration of AI into translation teaching promotes a shift from passive learning to active engagement. Students are encouraged not only to use AI outputs but also to question, analyze, and improve them. This process contributes to the development of essential translation competencies, including critical thinking, linguistic awareness, and problem-solving skills. At the same time, the study highlights the risks of over-reliance on AI, emphasizing that these tools should complement rather than replace traditional pedagogical approaches and human expertise. In conclusion, AI represents a valuable and innovative resource in teaching translation equivalence. Its effectiveness, however, depends on its

thoughtful and guided integration into the educational process, where technology and human insight work in tandem to achieve optimal learning outcomes.

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