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Artificial Intelligence in Advancing Translation Teaching within Foreign Language Learning

Dr. Fouzia TAIEB AMARA [1], Fatima ABDERRAHMANE [2]
[1] Hassiba Benbouali University of Chlef, Algeria
Email: f.taiebamara@univ-chlef.dz ; ORCID: 0009-0005-7603-5917
[2] Hassiba Benbouali University of Chlef, Algeria
Email: f.abderrahmane@univ-chlef.dz ; ORCID: 0009-0003-9961-8117

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Abstract:
This study examines how artificial intelligence can advance translation teaching in foreign language learning. It focuses on intelligent software and interactive technologies that can strengthen learners' translation skills. It also explains how AI can be used to create personalized learning environments that respond to individual needs. Such environments can support both individual and collaborative learning. The study considers practical applications, including machine translation systems and intelligent language-training tools. It highlights their contribution to the quality of language education and to the acquisition of advanced skills. It also discusses the challenges of integrating AI into language teaching and proposes strategies to address them. Overall, the study presents an integrated model that brings technology and linguistics together to create a more effective, engaging, and productive learning experience.

Keywords: interactive translation, artificial intelligence, foreign language teaching, intelligent software.

Introduction:

Artificial intelligence is developing rapidly in the contemporary world, and its applications now extend across many areas of life. Education is one of the fields most affected by this development. Foreign language teaching has benefited greatly from these technologies, particularly in the teaching of translation skills. Intelligent software and interactive learning systems have created new opportunities for learners to develop their translation competence. They do so through digital environments that can adapt to individual needs and proficiency levels.

In this setting, artificial intelligence does more than make learning easier. It can also improve educational quality and create a more interactive and effective learning experience. It is therefore important to examine its role in developing translation teaching and to explore both its potential and its challenges in contemporary educational practice.

Research Problem:

Artificial intelligence offers promising opportunities for translation teaching. Nevertheless, questions remain about its effectiveness in improving learners' skills and its influence on learning quality and outcomes. Integrating these technologies into language education also raises technical and pedagogical challenges. These issues require careful study and appropriate solutions.

Accordingly, the study addresses the following main question:

How does artificial intelligence contribute to the development of translation teaching in foreign language learning, and what challenges hinder its effective use in the educational process?

Hypotheses:

- Using AI applications in translation teaching improves learners' translation skills.
- Combining interactive learning with AI tools strengthens both individual and collaborative learning.
- The use of AI tools presents technical and pedagogical challenges that can be addressed through carefully designed strategies.

Study Objectives:

- To identify the role of artificial intelligence in advancing translation teaching.
- To explore the main intelligent tools and platforms used in translation teaching.
- To examine how interactive learning and individual personalization can improve translation skills.
- To identify the challenges associated with integrating AI into education and to propose appropriate solutions.

1/ Intelligent Tools in Translation Teaching:

The concept of artificial intelligence: Artificial intelligence is a branch of computer science concerned with designing systems that can simulate human thought and decision-making. It is used in many fields, including education, to provide personalized content and analyze learner performance.

Linguistically:

Intelligence: A noun derived from the adjective intelligent and the verb to become intelligent. Human intelligence is the ability to understand, infer, analyze, and distinguish through natural aptitude and mental acuity.

Artificial: An adjective derived from the act of making or manufacturing. It refers to something manufactured rather than natural, as in artificial silk or artificial flowers.

Artificial intelligence is the ability of a machine or device to perform activities that require intelligence, such as practical reasoning and self-correction[1]. It does so by analyzing information and making decisions in ways that resemble the human mind's capacity to understand and learn.

Terminologically:

Definitions of artificial intelligence vary according to the perspectives of scholars and researchers. It is described as "a branch of computer science and one of the main foundations of the modern technology industry, commonly abbreviated as AI"[2]. It seeks to enable computer programs to solve different problems by simulating several forms of intelligent behavior. These forms may be derived from genuinely intelligent behavior or from behavior that is merely intelligible and not necessarily highly intelligent[3].

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[1]Rachida Hashemi and Abdelwahab Miliani, "The Conceptual Framework of Artificial Intelligence," Al-Turath Journal, no. 2, June 2024, p. 49.

[2]Fatima Baha, "Artificial Intelligence Systems and the Challenges of the Legal Regulation of Their Personification," Journal of Research in Law and Political Science, Algeria, no. 1, July 2023, p. 414.

[3]See Ahmed Tariq Sadiq, Fundamentals of Artificial Intelligence: Research Methods, Knowledge Representation, and Inference (Baghdad: Al-Dhakira Publishing and Distribution, 1st ed., 2016/1437 AH), p. 17.

Bashir Arnous defines it as "the field of computing concerned with computer systems that possess characteristics associated with human intelligence and can make decisions in ways that broadly resemble human behavior across different domains. AI systems seek to develop computers capable of performing tasks that require human intelligence by enabling machines to carry out activities whose real-world performance depends on such intelligence"[4]. The field aims to enable computers to think, learn, and solve problems in ways that simulate human cognitive abilities. This supports the development of intelligent applications across many areas of life.

Artificial intelligence links learning domains within neural networks and can classify, distinguish, and clarify them. It represents a paradigm shift in the construction of knowledge[5]. Intelligent programs are educational applications that use AI. They can track learners and adapt lessons to their level and specific needs.

Artificial intelligence offers exceptional opportunities to enrich language teaching through precise personalization and immersive practice environments. Realizing this potential, however, requires a careful balance between technological innovation and ethical safeguards. The most appropriate model is one of "conscious integration." In this model, AI supports analysis and procedural tasks, while the human teacher safeguards cultural authenticity and sustains learner motivation[6]. In language teaching, AI can help develop pronunciation, listening, reading, and writing through simulated human conversation and immediate feedback.

1- Computer-Assisted Translation (CAT) tools: CAT tools are essential resources for professional translators. They do not perform translation entirely automatically. Instead, they rely on translation memories that store and reuse previous translations. They also use specialized termbases to maintain terminological consistency across projects. These tools allow texts to be segmented and edited with ease. They also support grammar checking and multiple file formats.
2- Terminology management tools: These tools help students understand specialized terminology and use it accurately.
3- Machine translation: Machine translation is commonly defined as translation generated through advanced technology without direct intervention by human translators. It is often treated as part of language processing, in which software translates written or spoken content from one language into another[7]. It should be used as an aid rather than a substitute for the translator.
4- Automated language-checking tools: Katout defines language checking as "the correction of written or spoken texts at the levels of spelling, grammar, morphology, and typography, in addition to the use of punctuation"[8]. Arabic companies have developed several proofreading platforms, including Sahehly and Lisan.

[4]Ali Ahmed Ibrahim, "Applications of Artificial Intelligence in Combating Cybercrime," The Legal Journal, Sudan, no. 8, May 2021, p. 2814.
[5]Mohammed Hamad Al-Atal, Ibrahim Ghazi Al-Anzi, et al., "The Role of Artificial Intelligence in Education from the Perspective of Students at the College of Basic Education in Kuwait," Journal of Educational Studies and Research, vol. 1, no. 1, January 2021, p. 31.
[6]Abdelrahman Talib Yassin, "Artificial Intelligence and Language Teaching: Transformations and Challenges," https://www.aljazeera.net/blogs/2025/8/20.
[7]Sharifa Belhouts and Asma Alawi, "Machine Translation in Legal Research: Problems and Solutions," Journal of Language Practices, vol. 15, no. 2, December 2024, p. 222.
[8]Imad Nabil Katout, Ascending to the Rank of Language Proofreader (Jordan: Dar Al-Maqasid, 2017), p. 1.

AI-based intelligent tools can strengthen learners' translation skills by offering accurate suggestions and immediate error correction. They also provide interactive practice that improves linguistic understanding and promotes precise, professional terminology choices.

Intelligent tools play an important role in supporting learners' translation skills. Their main benefits include:

- Strengthening text comprehension and content analysis.
- Improving linguistic and terminological accuracy.
- Developing critical-thinking skills.

2/ Practical Applications of Artificial Intelligence:

The practical uses of artificial intelligence in learning have expanded considerably. This is particularly evident in interactive learning, which gives learners immediate practice and encourages active participation.

Intelligent educational platforms are digital environments built on modern web-based technologies. They use artificial intelligence to personalize learning, guide learners, and monitor their progress.

AI applications in education include three main types of systems. The first consists of intelligent tutoring programs that guide students individually. The second includes computer-based educational systems with independent databases that contain instructional content and teaching strategies. The third comprises intelligent learning systems that combine behavioral and cognitive approaches and incorporate models of the subject domain, the student, and the expert teacher[9]. One model used in intelligent learning systems is the interaction-interface model. It actively involves students in learning through engaging presentation methods. It also offers flexible and varied ways of presenting material to suit individual characteristics and requirements. In addition, it allows students to interact with the system in natural language they can understand[10].

AI-Based Tools:

Busuu: One of the platform's main features is the opportunity to communicate with native speakers. The platform reportedly includes about 100 million native speakers and offers more than 1,000 lessons in 12 languages. Users may choose among these languages. A free version is available, while the paid version costs USD 6.55 per month for one language and USD 7.48 per month for access to all languages.[11]

Duolingo: This American application allows users to learn languages in an engaging way. It prepares them to use a foreign language in everyday situations, such as ordering food at a restaurant. A free, advertising-supported version is available. Users who prefer an ad-free experience can subscribe for USD 6.99 per month[12].

DeepL: DeepL Translator is a translation service developed by the German company DeepL GmbH, which was founded in 2017. Its developers sought to overcome limitations found in many conventional translation tools, especially limited accuracy and weak attention to linguistic nuance. DeepL drew on the experience of a professional team that had previously worked on the Linguee

[9]Kabedani and Baden, "The Importance of Using Artificial Intelligence Applications in Algerian Higher Education Institutions," Dafatir Journal, vol. 10, no. 1, June 30, 2021, p. 162.
[10]Ibid., p. 726.
[11]https://www.argaam.com/ar/article/articledetail/id/1541249.
[12]Ibid.

translation platform. Their expertise in neural machine translation enabled them to develop a tool that produced highly accurate translations and outperformed several systems available at the time.[13]

Google Translate: This free automated service was developed by Google to help users translate words, sentences, phrases, written texts, audio, and images from one language into another. It relies on artificial intelligence and machine learning, which support its continuing development and improvement[14].

Trados Studio: Trados Studio is a comprehensive computer-assisted translation tool. It provides functions for editing, reviewing, and managing translation tasks. Four technologies lie at its core: translation memory, terminology management, machine translation, and generative translation powered by Trados Copilot, an AI assistant. Trados Studio therefore supports a wide range of translation workflows, not only AI-assisted PDF translation. Its project-management and cloud functions allow large translation projects to be created quickly and delivered through a desktop application or web browser. Its language-AI capabilities can also make translation workflows more automated, streamlined, and efficient.[15]

Practical Examples of Interactive Learning:

Active interactive learning: Interactivity refers to dialogue between the two parties in an educational situation: the learner and the program. Interaction between the user and the presentation occurs through an accessible interface that attracts attention. Learners move through the content, receive feedback, explore the presentation, and independently discover the information they seek[16]. Active interactive learning therefore enables learners to construct their own knowledge and develop their thinking. It makes them partners in the educational process rather than passive recipients of information.

Interactive active-learning strategies are diverse. Al-Saadawi identifies the following as among the most prominent:

cooperative learning, role play, peer teaching, educational games, reciprocal teaching, and small-group teaching[17]. Other methods of science teaching that are suitable for active learning include the modified lecture, discussion, cooperative learning, and discovery learning[18].

Individual interactive learning: Learners use intelligent programs to complete translation exercises and receive immediate correction and interactive responses. Interactive conversation may also involve assistants that simulate dialogue with learners to develop their language or translation skills.

Intelligent assessment: These tools analyze student performance and provide personalized feedback that helps learners improve their skills.

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[13]See https://www.linguise.com/ar/.

[14]https://drasah.com/Description.aspx?id=8540.

[15]https://fliphtml5.com/learning-center/ar/ai-tools-to-translate-pdfs-better-than-native-speakers.

[16]Shama, Nader Ismail, and Sameh, Introduction to Educational Technologies (Amman, Jordan: Dar Al-Fikr, 2008), p. 273.

[17]Haniyah bint Abdullah bin Siraj Al-Saadawi, "The Effect of Active Interactive Teaching Strategies on Long-Term Achievement in the Teaching Methods Course for Female Chemistry Students at the College of Education, Umm Al-Qura University," Studies in University Education, no. 30, May 2015, p. 605.

[18]Atef Al-Sayfi, The Teacher and Modern Teaching Strategies (Amman: Dar Osama for Publishing and Distribution, 1st ed., 2009), p. 242.

Personalized learning levels are set according to learners' proficiency and needs. Each student works independently and focuses on the skills that require further development. This approach helps learners progress toward their individual goals.

3/ Results and Benefits:

Intelligent programs have had a clear effect on the quality and efficiency of translation learning. Tools such as Google Translate and DeepL Translator can accelerate an initial understanding of texts. Their instant translations help learners grasp meaning more quickly and can save time and effort. These tools also allow students to compare translations and analyze linguistic differences, which strengthens editing and revision skills. Excessive reliance on them, however, may reduce the quality of learning. It can weaken independent linguistic reasoning and a deep understanding of cultural context. Both are essential to professional translation. The value of these programs therefore depends on how they are used. When employed for support and practice, they can improve accuracy and speed. When treated as a complete substitute for human effort, they may lead to superficial and limited learning.

Intelligent programs such as Google Translate and DeepL Translator offer important educational benefits to both students and teachers. They help students understand texts quickly, expand their vocabulary, and improve their translation through comparison and analysis. They also support independent learning and provide immediate feedback. For teachers, these tools can make concepts easier to explain and reduce the time needed to correct assignments. They can also support the preparation of varied teaching materials and enable more accurate assessment of student performance. These benefits can improve the overall efficiency of the educational process.

4/ Challenges and Proposed Solutions

Integrating artificial intelligence into education creates significant opportunities. However, it also presents challenges that require careful attention. The main concerns include:

- Excessive reliance on intelligent systems may diminish the teacher's role and reduce human interaction, which is essential to students' social and emotional development.
- AI systems may reproduce biases in their training data. This can lead to unfair assessments or unbalanced educational recommendations.
- The collection and analysis of student data raise privacy concerns, particularly when strict policies do not protect sensitive information.
- Students may rely heavily on intelligent tools to complete assignments or answer questions. This can weaken critical thinking and learner autonomy.
- Students do not have equal access to technology. AI may therefore widen inequalities in learning opportunities.
- Developing and integrating AI systems requires substantial financial investment and continuous teacher training.
- Some teachers may find it difficult to use new technologies or integrate them effectively into instruction.

These challenges can be addressed through appropriate legislation, professional training, and a sound balance between technology and human involvement. Such measures make it possible to benefit from AI while limiting its risks.

A balanced approach is needed to address the difficulties of integrating AI into education and to improve the learning experience. Technology should complement rather than displace the human role.

Teachers must remain central to student guidance and engagement, and ongoing training should help them use intelligent tools effectively. Learning activities should develop critical thinking and limit overreliance on ready-made answers. Institutions must also monitor system performance, improve data quality, reduce bias, and ensure fairness. Clear policies are needed to protect student privacy, while equitable access to resources can narrow the digital divide. Transparency about how these technologies work is equally important. AI should be introduced gradually, evaluated continuously, and used responsibly by students. This approach can support sustainable educational development without sacrificing its human dimension.

Conclusion:

Artificial intelligence is an effective tool for advancing translation teaching in foreign language learning. It gives learners access to personalized and interactive environments that can strengthen their skills and facilitate knowledge acquisition. Integrating intelligent programs with interactive technologies can support both individual and collaborative learning. It also gives teachers new opportunities to design innovative instructional strategies. Although AI presents several challenges, sound planning and appropriate methods can make it a central means of improving translation teaching. It can thus help create a more effective, productive, and engaging learning experience for all learners.

Suggestions and Recommendations:

- Encourage the use of intelligent software and interactive educational applications that help learners improve their translation skills individually and collaboratively.
- Develop digital learning environments whose content can be adapted to each learner's level and needs, thereby strengthening learning effectiveness and student autonomy.
- Promote interaction between learners and intelligent educational programs, with continuous feedback that helps students acquire advanced translation skills.
- Provide teacher-training programs on integrating artificial intelligence into translation teaching and on effective practices for addressing technical and pedagogical challenges.

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