LANGUAGE AND ARTIFICIAL INTELLIGENCE: THE IMPACT OF MACHINE TRANSLATION TECHNOLOGIES ON LANGUAGE LEARNING

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Abstract. The growing role of artificial intelligence (AI) in education has significantly transformed the way foreign languages are learned. One of the most impactful tools in this field is machine translation (MT), which provides immediate access to meaning across languages and influences both teaching methods and learning outcomes. This article explores the benefits, challenges, and long-term implications of MT technologies in language acquisition. By analyzing recent research and practical applications, it argues that while MT tools enhance accessibility and motivation, they also create risks of dependency, reduce critical thinking, and influence learners' linguistic competence.

Keywords: artificial intelligence, machine translation, language learning, digital education, language acquisition.

Introduction. The rapid integration of artificial intelligence into educational processes has reshaped traditional learning environments. Among the various applications of AI, machine translation (MT) has gained particular relevance due to its ability to provide instant meaning across languages. Popular platforms such as Google Translate, DeepL, and Microsoft Translator are widely used not only by professional translators but also by students and teachers. While these tools were initially developed for communication purposes, their increasing presence in academic settings has sparked a debate regarding their role in effective language acquisition. The problem that this article addresses lies in the dual nature of MT technologies: they serve as powerful aids to comprehension but may simultaneously hinder the development of essential linguistic skills. The aim of the research is to analyze the pedagogical implications of machine translation in English language learning, highlighting both the opportunities and risks associated with its use.

Literature Review. A growing body of research has examined the role of machine translation in education. Somers (2001) provided one of the earliest overviews of pedagogical uses of MT, noting its potential to enhance learners' exposure to authentic texts. More recent studies (Garcia & Pena, 2011; Clifford, Merschel & Munné, 2013) highlight how MT can act as a support tool, facilitating comprehension of complex materials.

On the other hand, critical perspectives emphasize the risks of over-reliance on MT tools. Groves & Mundt (2015) argue that students who use MT excessively often produce grammatically correct but semantically unnatural sentences, showing limited progress in authentic communicative competence. Similarly, Niño (2009) underlines the need for guided use of MT in classroom contexts, suggesting that teachers should integrate it as a supplementary, rather than primary, learning method.

Recent developments in neural machine translation (NMT) have further complicated this discussion. According to Castilho et al. (2017), NMT systems demonstrate significant improvements in fluency and accuracy compared to earlier statistical approaches. However, this increased reliability may paradoxically encourage learners to bypass critical engagement with texts, relying entirely on automatic solutions.

Thus, the literature suggests a need for a balanced approach that incorporates MT technologies into language teaching while ensuring that core skills such as vocabulary acquisition, grammar awareness, and cultural understanding are not undermined.

Methodology. This article employs a qualitative research approach based on the review of academic literature, case studies, and practical reports from educational contexts. Data

were collected from scholarly journals, conference proceedings, and educational policy documents published between 2000 and 2023. The focus was placed on identifying recurring themes regarding the benefits and drawbacks of MT in FL classrooms.

Additionally, examples of classroom practices were analyzed, where teachers incorporated MT tools into tasks such as translation exercises, vocabulary learning, and reading comprehension. This methodological approach allowed the identification of common pedagogical strategies and potential outcomes associated with MT usage.

Results and Discussion. The analysis revealed three major areas of impact:

Accessibility and Motivation. MT tools significantly increase learners' access to authentic English materials. Students can read newspapers, academic articles, and literary works without being limited by their proficiency level. This accessibility fosters motivation, particularly among beginners, who may otherwise feel discouraged by complex texts. Moreover, instant feedback provided by MT enhances learner autonomy.

Risks of Dependency. Excessive reliance on MT can undermine the development of core language skills. Students may neglect vocabulary memorization, grammatical practice, and cultural nuances, trusting the technology to fill these gaps. The quality of output, although high, is not flawless and may produce subtle inaccuracies. These mistakes often go unnoticed by learners, leading to fossilization of errors.

Pedagogical Integration. When used under teacher supervision, MT can become a valuable tool. For example, students may compare MT outputs with human translations, identify errors, and discuss stylistic differences. Such activities encourage critical engagement and raise language awareness. Additionally, MT can support collaborative tasks, where students analyze translations in groups, thereby combining technological support with communicative practice.

Overall, the results indicate that MT is a double-edged sword in language education: its benefits are maximized when integrated purposefully, while its drawbacks become evident in uncontrolled or excessive use.

Conclusion. The impact of machine translation on English language learning is profound and multifaceted. While MT technologies enhance accessibility, motivation, and exposure to authentic texts, they also risk fostering dependency and reducing learners' critical engagement with language. The findings suggest that MT should be incorporated into pedagogical frameworks as a supplementary tool rather than as a replacement for traditional learning practices. Teachers play a crucial role in guiding students to use MT critically, encouraging them to recognize errors, analyze stylistic choices, and reflect on linguistic structures. In the long term, successful integration of MT into language education requires a balanced approach that values both technological innovation and human-centered linguistic development.

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