DIGITAL DIDACTICS AND LINGUISTIC AGENCY IN AI-MEDIATED L2 PEDAGOGY

ADILOVA SAODAT ABDURAKHIMOVNA

Ph.D., Associate Professor
National Pedagogical University of Uzbekistan
E-mail: Nizamisaodat.adilova@gmail.com

Abstract - This article explores the transformative potential of artificial intelligence (AI) in second language (L2) acquisition, specifically focusing on the promotion of linguistic agency in digital environments. As modern pedagogy shifts toward adaptive platforms, the author examines how neural networks can be integrated into the instruction of agglutinative languages, such as Uzbek. Drawing on recent national strategic directives and cognitive-creative frameworks, this study proposes a series of methodological interventions – including "Linguistic Detective", "Mahalla's Blogger", and "Telegram Battle". These methods shift the learner's role from a passive recipient to an active linguistic agent. The results demonstrate that the rational harmony of AI tools and traditional methods enhances communicative competence while fostering critical thinking and autonomous speech.

Keywords - Digital Didactics, Linguistic Agency, Artificial Intelligence,Second Language Pedagogy, Agglutinative Languages, Uzbek Language, Prompt Engineering, Low-Resource Languages.

INTRODUCTION

The global educational landscape is undergoing a paradigm shift necessitated by the integration of adaptive platforms and neural networks. Modern linguodidactics requires intellectual tools that not only mimic human cognition but also adapt to individual learner needs.

In the context of international strategic goals for digital linguistic diversity, AI technologies serve as a "bridge" between theoretical reception and active communication. This study aims to investigate how AI-mediated tools enhance linguistic agency – the learner's capacity to act and make choices in the target language – within digital educational environments.

Linguistic agency is defined as the learner's capacity to act and make meaningful choices within the target language environment. According to Danesi (2024), AI-driven individualized lesson plans significantly increase student motivation and results by tailoring assessment systems to specific learning styles. Theoretical frameworks by Danesi (2024) and Kohnke, Moorhouse (2023) establish the foundational role of AI in modern foreign language instruction. At the national level, the Republic of Uzbekistan (2025) has prioritized the development of the state language through digital innovation. However, as noted by researchers of low-resource languages (Tukeyev et al., 2023), the technical limitations of global LLMs remain a significant barrier.

This study bridges the gap between high-level pedagogical theory and the specific linguistic challenges of the Uzbek language, moving towards a "socio-linguistic filter" model (Derakhshan, 2025).

II. METHODS

This study proposes a "bridge" approach, moving students from information reception to active communication through several proprietary methods:

The "Linguistic Detective" Method. A critical-thinking exercise where students analyze AI-generated Uzbek texts containing deliberate errors. By correcting the neural network, students realize their "cognitive superiority" over technology, which builds self-confidence.

Prompt Engineering as Cognitive Art. Students learn to formulate complex, logical queries in the L2. For example, creating a travel agency advertisement using a specific set of adjectives, adverbs, and verbs forces the learner to systematize their vocabulary within a creative-cognitive task.

The "Mahalla's Blogger"exercise. A culturally-situated task where the student acts as a digital creator promoting local artifacts like somsa (meat pie) or palov using specific action verbs.

"ZiyrakTinglovchi" (Sharp Listener). Utilizing ChatGPT to identify popular Uzbek songs with specific thematic vocabulary, integrating auditory processing with contextual activation.

Integration of Muxlisa AI. This specialized speech-to-text and text-to-speech engine for the Uzbek language serves as an intellectual trainer for monitoring oral proficiency. By converting student speech into text for analysis and vice versa, it provides immediate feedback on pronunciation and morphological markers(Muxlisa AI, 2024-2026).

III. RESULTS

The implementation of these methods revealed specific technical and linguistic (morphological)challenges inherent in AI-mediated Uzbek instruction.

The agglutinative nature of the Uzbek language, characterized by the "stacking of morphemes", presents a significant challenge for linear logic models. In Uzbek, a single word form can carry an extensive chain of inflectional and derivational affixes (e.g., Toshkentdanmasmikinsiz-a? – I wonder are not you from Tashkent, are you?), which simultaneously determine tense, mood, negation, and relationships. Artificial Intelligence frequently fails to maintain the correct morphotactic sequence of these affixes, leading to "morphological hallucinations". In such cases, the generated word may follow the rules of linear logic but violates the structural laws of agglutinative synthesis.

One of the primary catalysts for AI hallucinations in the Uzbek language is the script-mixing phenomenon during transliteration. Due to the coexistence of both Cyrillic and Latin orthographic systems, Large Language Models frequently confuse or mix Cyrillic and Latin characters within a single word or sentence. This inconsistency triggers a chain reaction in the tokenization process, ultimately leading to the generation of grammatically distorted or contextually irrelevant word forms.

AI often struggles with the cultural code. As highlighted by Kuvshinova (2024), understanding these limitations is crucial for creating strategies that prioritize human critical analysis over algorithmic output. Unlike standard text generation, AI within the framework of the proposed methodology can serve as a socio-linguistic filter. The key element here is the deconstruction of the cultural code embedded in expressive means or folklore. For instance, when analyzing the Uzbek proverb "Do'stachitibgapirar, dushmankuldirib" (literally: A friend speaks bitterly/stinging, an enemy speaks with a smile), the student's task shifts from simple translation to multi-level analysis: the AI must identify the literal meaning, the cultural subtext, and select a functional equivalent in the learner's native language. This process reveals the linguistic limitations of the neural network: AI often provides a simplified translation (e.g., "Friend speaks painfully"), losing the philosophical concept of "healing bitterness" characteristic of the Eastern mentality. By comparing the interpretation of the word "achitib" in both gastronomic and anthropocentric contexts, students clearly see how the "bitter medicine" metaphor transforms into a category of sincere friendship. Such critical analysis of AI responses allows students not only to memorize vocabulary but to decode the national linguistic picture of the world.

IV. DISCUSSION

Unlike standard text generation, AI within the framework of the proposed methodology serves as a "socio-linguistic filter".To prevent "information copying" (plagiarism), the study advocates for the "Intellectual Transformation" method. AI is used only for the preparatory phase (data gathering); the final assessment requires "live speech" – retelling the gathered information without notes. This ensures that AI remains an instrument for speech development rather than a source of ready-made answers.

Furthermore, role-playing simulations (e.g., AI as a tourist, student as a guide) demonstrate that AI can effectively model real-life communication barriers. However, the teacher must remain a "critical mediator", as AI often produces stylistic awkwardness in agglutinative structures due to polysemy and cultural nuances. Understanding these limitations is crucial for creating strategies that prioritize human critical analysis over algorithmic output (Kuvshinova, 2024).

V. CONCLUSION

The rational integration of digital technologies and traditional methodology increases the international prestige of the Uzbek language and accelerates L2 acquisition. By mastering prompt engineering and the pedagogical adaptation of neural networks, educators can create high-quality, competitive educational materials. AI should not be the end goal of education but a "springboard" for achieving linguistic agency and professional development in the 21st century.

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