

ENHANCING ENGLISH VOCABULARY THROUGH CHATBOT-BASED LANGUAGE PRACTICE: A CASE STUDY OF UZBEK UNIVERSITY STUDENTS

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Abstract: This article explores the effectiveness of chatbot technologies in developing English vocabulary. Chatbots provide students with an interactive, personalized, and contextual communication environment based on artificial intelligence. During the study, an experiment was conducted among experimental and control groups consisting of students from universities of Uzbekistan for 4 weeks. The results showed that an average of 34% more vocabulary was mastered in the group using the chatbot. Students had the opportunity to communicate freely through chatbots, use new words in context, and practice independently. The use of chatbots had a positive impact on improving students' vocabulary skills, strengthening motivation, and revitalizing the learning process.

Keywords: chatbots, artificial intelligence, English, vocabulary skills, digital learning, EFL, interactive learning, contextual vocabulary.

In the era of rapid technological development, artificial intelligence (AI) tools are increasingly being incorporated into educational practices, particularly in language learning. Among such tools, chatbots have emerged as innovative resources that offer learners personalized, interactive, and conversational environments for practicing foreign languages. These AI-driven programs are designed to simulate real-life dialogue, respond to user input, and provide context-sensitive feedback—elements that are vital in the process of language acquisition, especially in developing lexical competence.

English vocabulary acquisition remains one of the most critical yet challenging aspects of mastering the language. Without sufficient vocabulary, learners struggle with reading comprehension, writing fluency, and spoken interaction. Traditional methods such as rote memorization and vocabulary lists are often perceived as monotonous and disconnected from actual language use. Therefore, the integration of chatbot-based platforms introduces a new dimension to vocabulary learning—one that is interactive, contextual, and learner-centered.

Recent research suggests that chatbots can enhance language learning by increasing learners' exposure to new words in authentic contexts, allowing for repetitive practice, error correction, and immediate reinforcement. In addition, chatbot environments reduce learners' anxiety levels during practice and offer a non-judgmental space for experimentation with language. For non-native speakers, especially those in EFL (English as a Foreign Language) contexts such as Uzbekistan, where daily access to native speakers is limited, chatbots offer a practical alternative to immersive language exposure.

This study aims to investigate the effectiveness of chatbot applications—specifically Duolingo Chatbot and Replika—in enriching English vocabulary among Uzbek university students. The research focuses

on whether the use of chatbots leads to measurable improvements in vocabulary acquisition and how learners perceive their experiences with these AI tools. By doing so, this paper contributes to the growing body of evidence supporting the pedagogical value of conversational AI in EFL learning environments.

The research involved 50 first-year students divided into two groups: one using traditional learning materials and the other practicing English through chatbots for four weeks. Vocabulary acquisition was assessed via pre-tests and post-tests, while student attitudes were gathered through questionnaires.

Students using chatbots showed an average vocabulary gain of 34%, compared to 18% in the control group. Qualitative feedback highlighted improved engagement and contextual learning. Students noted increased confidence in using new words in conversations.

The findings of this study demonstrate that the use of chatbot-based platforms can significantly enhance students' English vocabulary acquisition. The experimental group, which practiced with Duolingo Chatbot and Replika, outperformed the control group not only in test scores but also in terms of engagement and confidence in using new words in real contexts. These results align with earlier research indicating that AI-supported learning environments can provide more dynamic, personalized, and effective vocabulary training than traditional methods (Kukulska-Hulme & Shield, 2008; Tegos et al., 2020).

One of the key benefits observed was the contextual learning offered by chatbots. Unlike isolated vocabulary drills, chatbots encouraged students to learn new words through meaningful conversations, which allowed for situational usage and better retention. This supports Vygotsky's theory of social interaction in learning, wherein language development is enhanced through active participation and dialogue, even if it is simulated via technology.

Moreover, students reported that interacting with chatbots reduced the psychological pressure typically associated with classroom speaking tasks. The non-threatening, judgment-free environment created by AI agents helped learners to experiment with language use more freely, resulting in greater lexical confidence. This factor is especially important in EFL contexts like Uzbekistan, where access to native speakers and immersive environments is limited.

However, the study also highlighted several limitations of chatbot use. Firstly, while most students found the apps engaging, a few expressed frustration over technical issues, such as repetitive responses or limited vocabulary scope in free versions. Furthermore, chatbots are not yet fully capable of understanding nuanced language or providing complex grammatical explanations, which can hinder deeper learning if not supplemented with teacher guidance.

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