

**THE USE OF ARTIFICIAL INTELLIGENCE AND DUOLINGO IN  
ENHANCING LANGUAGE SKILLS**

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**Abstract.** *In recent years, artificial intelligence (AI) has become an integral component of foreign language education. Among the most widely used AI-powered platforms is Duolingo, which leverages adaptive learning and gamification to facilitate the development of core language skills. This article examines how AI, particularly through Duolingo, enhances learners' abilities in reading, writing, listening, and speaking.*

**Keywords:** *Artificial intelligence, Duolingo, language skills, language learning, EdTech, adaptive learning, gamification*

The integration of artificial intelligence (AI) into educational technologies has reshaped how foreign languages are taught and learned. Digital platforms that employ AI features now offer learners personalized content, instant feedback, and engaging formats that encourage consistent practice. One of the most popular and accessible AI-powered applications is *Duolingo*, which boasts over 500 million users worldwide. By using algorithms that adapt to a learner's performance, Duolingo customizes learning paths and helps users gradually build their language proficiency.

**Duolingo and Adaptive Language Learning.** Duolingo employs machine learning algorithms to track learner behavior and progress. Based on performance, the system adapts the difficulty and frequency of lessons, reinforcing weak areas and advancing strong skills. This type of adaptive learning ensures that students engage with material that is neither too difficult nor too simple, maintaining motivation and effectiveness.

Key features of Duolingo's AI-enhanced system include:

- **Personalized review schedules** based on spaced repetition
- **Skill trees** organized by themes and grammar structures
- **Gamification elements** such as points, streaks, and levels
- **Real-time feedback** on pronunciation and grammar

There are the enhancement of Core Language Skills with Duolingo:

**Reading.** Duolingo presents users with texts and interactive exercises that build vocabulary and comprehension. Users are exposed to frequent context-based reading, improving their ability to infer meaning and structure from authentic and semi-authentic sentences.

**Writing.** Although limited in open-ended writing tasks, Duolingo enhances sentence construction through translation exercises, fill-in-the-blank tasks, and word order activities. These activities develop grammatical accuracy and reinforce sentence patterns.

**Listening.** Listening tasks include short audio clips or spoken instructions followed by comprehension checks. Learners also hear model pronunciation for new words, helping them connect spoken and written forms.

**Speaking.** Duolingo uses speech recognition to allow learners to repeat phrases and sentences. The system provides feedback on pronunciation, although its accuracy is limited compared to human evaluation. Nonetheless, it builds confidence and supports oral fluency.

There are a number of benefits of Duolingo in language education:

- **Accessibility:** Duolingo is free and available on various devices, enabling broad access.
- **Engagement:** Gamified features increase motivation and promote habitual learning.
- **Autonomy:** Learners can study independently at their own pace.
- **Feedback:** Instant correction promotes awareness and retention.
- **Data tracking:** Teachers can monitor student progress through Duolingo for Schools.

Despite its advantages, Duolingo has limitations: *Limited speaking and writing depth:* It does not fully support productive skills development beyond the sentence level.

*Cultural context:* It offers little exposure to authentic conversation or cultural nuance.

*Over-reliance on repetition:* May lack depth for intermediate to advanced learners.

Educators must consider these factors when integrating Duolingo into curricula and supplement it with communicative activities, discussion, and contextual materials.

**Conclusion.** Artificial intelligence, as implemented in Duolingo, represents a powerful innovation in foreign language education. It enhances motivation, personalizes instruction, and allows learners to develop language skills in an interactive environment. However, its limitations highlight the continued need for human guidance and communicative practice. Educators who adopt AI-based tools like Duolingo can enrich the language learning process, provided they are used thoughtfully and strategically.

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