

ENHANCING ENGLISH LANGUAGE TEACHING THROUGH AI-ADAPTIVE LEARNING AND INTERACTIVE DIGITAL PLATFORMS

Shcherbyna Yuliia Mykhailivna

Senior lecturer at the Foreign Languages Department
of Sumy National Agrarian University
Sumy, Ukraine

Introduction. As educational systems continue to globalize and English maintains its role as the dominant language of international communication, the demand for adaptable, learner-centered approaches to language education has increased significantly. Traditional teaching models, which typically rely on fixed syllabi and uniform instructional pacing, often fail to address individual differences in learners' proficiency levels, learning pace, cognitive styles, and motivational factors. As a result, these approaches frequently produce limited learning outcomes and reduced learner engagement.

In response to these limitations, interactive digital platforms – including online learning environments, AI-based dialogue systems, gamified learning tools, and collaborative technologies – have emerged as essential extensions of AI-adaptive learning frameworks. These platforms promote active learner participation, facilitate real-time interaction, support meaningful language practice, and provide immediate feedback, thereby enhancing both engagement and communicative competence. When integrated with AI-adaptive technologies, interactive platforms enable the personalization of English language instruction while simultaneously preserving the social interaction and collaborative learning processes that are often underrepresented in conventional educational models.

Aim. This research examines the conceptual foundations of adaptive learning from the perspectives of learner-centered and constructivist educational theories and analyzes international scholarship on the application of artificial intelligence and interactive digital tools in English language teaching. Particular attention is devoted to intelligent tutoring systems, automated feedback mechanisms, AI-supported

assessment tools, and interactive platforms designed to develop grammatical accuracy, lexical competence, pronunciation skills, and communicative proficiency. Findings from international empirical studies indicate that AI-enhanced and interactive learning environments foster higher levels of learner motivation, engagement, and participation, and generate more effective learning outcomes than traditional instructional approaches.

Materials and Methods. The study adopts a structured methodological framework that includes a theoretical and analytical review of relevant international literature, aligned with the stated research aims and objectives.

Results and Discussion. Standardized instructional models increasingly fail to meet the needs of digitally engaged learners, who require flexible, immersive, and personalized learning environments [3]. Interactive platforms – such as virtual classrooms, simulations, gamified learning tools, and collaborative online spaces – support active engagement, experiential learning, and authentic communication, shifting learners from passive content reception toward participatory, context-rich educational experiences. AI-powered adaptive systems enhance these environments by analyzing learner data to dynamically adjust content, tasks, and feedback in real time, thereby enabling individualized learning trajectories while simultaneously supporting collaboration and communicative practice [1]. Together, these technologies create learning environments that are both personalized and socially meaningful. In English language education, AI-adaptive systems and interactive platforms enable tailored instruction in grammar, vocabulary, pronunciation, and communicative competence. Intelligent tutoring systems and AI-driven conversational agents provide learners with low-anxiety environments for language practice, while interactive platforms facilitate dialogue, role-playing, and collaborative tasks that promote authentic communication. Empirical studies consistently demonstrate that the integration of adaptive AI technologies with interactive platforms improves learner motivation, engagement, and language learning outcomes compared with traditional teaching methods. Personalization and learner autonomy – identified by Dörnyei as key motivational factors – are

strengthened through adaptive systems, while interactive platforms enhance peer collaboration and communicative interaction.

Despite their pedagogical advantages, the implementation of AI-adaptive systems and interactive platforms presents significant challenges. Educational institutions often encounter barriers related to teacher readiness, pedagogical integration, ethical considerations, and data privacy [4]. Moreover, excessive reliance on AI technologies risks reducing meaningful human interaction, which remains essential for effective language acquisition. The absence of coherent methodological frameworks frequently results in the fragmented use of technologies rather than their systematic integration into instructional design. Effective implementation therefore requires a holistic, learner-centered approach that combines technological innovation with pedagogically informed instructional design to balance automated personalization, interactive engagement, and teacher mediation.

Recommendations for Integration. Based on theoretical and empirical evidence, the following recommendations are proposed:

1. Combine AI-adaptive systems with interactive platforms to ensure personalized learning alongside authentic collaboration.
2. Align technological tools with curriculum standards and proficiency frameworks (e.g., CEFR).
3. Provide systematic teacher training in both technical application and pedagogical integration.
4. Ensure ethical implementation and robust data security measures.
5. Promote learner autonomy through adaptive feedback, goal setting, and interactive learning tasks.
6. Continuously evaluate effectiveness using learner data, performance indicators, and reflective observation.
7. Foster social, collaborative, and communicative competencies by balancing adaptive personalization with interactive engagement.

Conclusions. The findings indicate that the integration of AI-driven adaptive learning systems with interactive platforms offers substantial pedagogical benefits for

English language education. Conventional instructional approaches, characterized by fixed curricula and uniform pacing, frequently fail to accommodate learners' diverse cognitive profiles, learning preferences, and motivational needs. AI-adaptive technologies address these limitations by providing customized content delivery, immediate feedback, and individualized learning trajectories, while interactive platforms support active engagement, collaborative learning, and meaningful communicative practice. Together, these systems form an integrated educational model that enhances both the effectiveness and sustainability of English language instruction in contemporary digital learning environments.

REFERENCES:

1. Brusilovsky P., Millán E. User Models for Adaptive Hypermedia and Adaptive Educational Systems. In Brusilovsky P., Kobsa A., Nejdl W. (Eds.). *The Adaptive Web*. Berlin: Springer-Verlag, 2007. P. 3–53. URL: http://dx.doi.org/10.1007/978-3-540-72079-9_1 (date of access:10.01.2026).
2. Dunleavy M., Dede C. Augmented Reality Teaching and Learning. In: Spector J. M., Merrill M. D., Elen J., Bishop M. J. (Eds.) *Handbook of Research on Educational Communications and Technology*. New York: Springer, 2014. P. 735–745. URL:http://dx.doi.org/10.1007/978-1-4614-3185-5_59
3. Lakhmotova Y., Sadovets O., Orlovska O., Martynyuk O., Myroshnychenko V., Lebedieva, L. Distance Learning of a Foreign Language in the Context of Neuropedagogical Factors. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*. 2024. Vol. 15, №1. P. 105–121. URL: <https://doi.org/10.18662/brain/15.1/539> (date of access: 16.01.2026).
4. Kukulska-Hulme A., Lee H., Norris L. Mobile Learning Revolution: Implications for Language Pedagogy. In: Chapelle C. A., Sauro S. (Eds.) *The Handbook of Technology*.
5. Woolf, B. P. *Building Intelligent Interactive Tutors: Student-Centered Strategies for Revolutionizing e-Learning*. Burlington, MA: Morgan Kaufmann, 2010.