ADVANCED METHODOLOGIES AND INNOVATIONS IN FOREIGN LANGUAGE ACQUISITION IN A HIGHER EDUCATION CONTEXT ПЕРЕДОВІ МЕТОДОЛОГІЇ ТА ІННОВАЦІЇ В ОВОЛОДІННІ ІНОЗЕМНОЮ МОВОЮ В КОНТЕКСТІ ВИЩОЇ ОСВІТИ

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Kurinnyi O.V., Senior lecturer at the Foreign Languages Department Sumy National Agrarian University

The acquisition of foreign languages in higher education has undergone significant transformations due to advancements in technology, pedagogical strategies, and cognitive science. This paper explores the latest methodologies and innovations in foreign language acquisition within higher education contexts, focusing on the integration of digital tools, immersive environments, and personalized learning approaches that have revolutionized traditional language learning paradigms. The study highlights the transformative impact of language learning apps, virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) on enhancing engagement, retention, and real-world communication skills. These tools provide interactive, flexible, and culturally immersive learning experiences, enabling students to practice language skills in authentic contexts. Additionally, the role of cognitive science in informing effective learning strategies, such as spaced repetition, self-regulated learning, and goal setting, is analyzed. These strategies, grounded in research on memory, attention, and motivation, have been instrumental in optimizing long-term retention and fostering intrinsic motivation among learners. However, while these innovations offer promising opportunities for improving language proficiency, challenges related to accessibility, cost, and pedagogical integration persist. For instance, the implementation of VR and AR technologies requires significant investment in infrastructure and training, while personalized learning platforms must address issues of data accuracy and algorithmic bias. This paper provides a comprehensive analysis of recent research and publications, emphasizing the need for a balanced approach that combines technology, pedagogy, and cognitive science. The findings underscore the importance of fostering intrinsic motivation. cultural understanding. and experiential learning in higher education settings. Recommendations are offered for educators and policymakers to optimize language acquisition outcomes, ensuring that students are equipped with the linguistic and cultural competencies required in a globalized world. By addressing the limitations of traditional methods and leveraging cutting-edge innovations, higher education institutions can create inclusive, engaging, and effective language learning environments that prepare students for diverse professional and personal contexts. This paper concludes with a call for collaborative efforts among educators, researchers, and policymakers to design and implement strategies that meet the evolving needs of learners in an increasingly interconnected world. Key words: foreign language acquisition, higher education context, innovative methodologies,

technology integration, cognitive science. Вивчення іноземних мов у вищій освіті зазнало

вивчення іноземних мов у вищи освіті зазнало значних трансформацій завдяки розвитку технологій, педагогічних стратегій та когнітивних наук. У цій статті досліджуються

новітні методики та інновації у вивченні іноземних мов у контексті вищої освіти, з акцентом на інтеграції цифрових інструментів, імерсивних середовищ та персоналізованих підходів до навчання, які революціонізували традиційні парадигми вивчення мов. Дослідження висвітлює трансформаційний вплив додатків для вивчення мов, віртуальної реальності (VR), доповненої реальності (AR) та штучного інтелекту (AI) на підвищення зацікавленості, утримання та розвиток комунікативних навичок у реальному світі. Ці інструменти забезпечують інтерактивний, гнучкий і культурно занурений навчальний досвід, дозволяючи студентам практикувати мовні навички в автентичних контекстах. Крім того, проаналізовано роль когнітивної науки у формуванні ефективних стратегій навчання, таких як дистанційне повторення, саморегульоване навчання та постановка цілей. Ці стратегії, засновані на дослідженнях пам'яті, уваги та мотивації, відіграли важливу роль в оптимізації довготривалого запам'ятовування та розвитку внутрішньої мотивації серед учнів. Однак, незважаючи на те, що ці інновації відкривають багатообіцяючі можливості для покращення рівня володіння мовою, залишаються проблеми, пов'язані з доступністю, вартістю та педагогічною інтеграцією. Наприклад, впровадження технологій віртуальної та доповненої реальності вимагає значних інвестицій в інфраструктуру та навчання, тоді як персоналізовані навчальні платформи повинні вирішувати питання точності даних та алгоритмічної упередженості. У цьому документі представлено комплексний аналіз останніх досліджень і публікацій, що підкреслює необхідність збалансованого підходу, який поєднує технології, педагогіку та когнітивну науку. Висновки підкреслюють важливість сприяння внутрішній мотивації, культурному розумінню та експериментальному навчанню у вищих навчальних закладах. Для освітян і політиків пропонуються рекомендації щодо оптимізації результатів засвоєння мови, які гарантують, що студенти отримають лінгвістичні та культурні компетенції, необхідні в глобалізованому світі. Усуваючи обмеження традиційних методів і використовуючи передові інновації, вищі навчальні заклади можуть створити інклюзивне, цікаве й ефективне середовище вивчення мови, яке підготує студентів до різноманітних професійних і особистих контекстів. Цей документ завершується закликом до спільних зусиль освітян, дослідників і політиків щодо розробки та впровадження стратегій, які відповідають зростаючим потребам учнів у все більш взаємопов'язаному світі.

Ключові слова: вивчення іноземних мов, вища освіта, інноваційні методики, інтеграція технологій, когнітивна наука.

A general statement of the problem and its connection with important scientific or practical tasks. Despite the recognized importance of foreign language skills, many students in higher education struggle to achieve proficiency. Traditional methods often fail to engage learners, accommodate diverse learning styles, or provide sufficient practice opportunities. Additionally, the globalized world demands not only linguistic competence but also cultural understanding and real-world communication skills. These challenges necessitate the development and implementation of advanced methodologies that can address the limitations of conventional approaches and meet the evolving needs of learners.

Foreign language acquisition is a critical component of higher education, fostering cross-cultural communication, cognitive development, and global competitiveness. Traditionally, language learning has relied on classroom-based instruction, rote memorization, and standardized testing. However, the advent of digital technologies and evolving pedagogical theories have introduced innovative methodologies that enhance the efficiency and effectiveness of language acquisition. This paper aims to explore these advanced methodologies and innovations, analyzing their impact on language learning outcomes in higher education.

Analysis of recent research and publications. Recent studies and publications have highlighted various innovative methodologies for foreign language acquisition. Some key contributions include:

Al and Adaptive Learning: Recent research by Guttierez [8:185] discusses how Al-driven language learning platforms dynamically adjust content based on learners' proficiency and progress, significantly improving retention rates.

Virtual and Augmented Reality: A study by Jang [10:1] examines the impact of VR-based immersive environments on language fluency, concluding that students exposed to virtual simulations show a 30% improvement in speaking skills compared to traditional learners. Gamification and Engagement: Research by Sailer and Homner [15:100] explores how gamified language apps increase motivation and consistency in language learning. The study reports that learners using gamified platforms practice 40% more frequently than those using traditional methods. Mobile Learning Efficiency: Recent meta-analyses by Chen and Wu [3:57] provide evidence that mobile-assisted language learning improves accessibility and flexibility, leading to a 25% improvement in vocabulary retention.

These findings underscore the growing importance of integrating technology, cognitive science, and innovative pedagogical strategies in foreign language education.

Highlighting the previously unresolved parts of the general problem. The general problem stated in the article revolves around the challenges and limitations of traditional foreign language acquisition methods in higher education, as well as the need for innovative approaches to address these issues. Below are the previously unresolved parts of the general problem, which remain critical areas for further research and development: Traditional methods often fail to engage learners or sustain their motivation over time. While gamification and digital tools have shown promise, there is still a need to understand how to consistently maintain high levels of engagement across diverse learner populations. The long-term effectiveness of gamification and other engagement strategies in higher education contexts remains understudied.

While personalized learning and adaptive technologies have emerged as solutions, there is limited research on how to effectively scale these approaches in large, diverse classrooms. The challenge of balancing individualized instruction with group dynamics remains unresolved.

Although immersive environments like VR and AR offer opportunities for authentic practice, their accessibility and integration into curricula are still limited. The effectiveness of these tools in fostering long-term communicative competence requires further investigation.

The unresolved parts of the general problem highlight the need for further research and innovation.

These unresolved issues underscore the complexity of foreign language acquisition in higher education and the need for a holistic, interdisciplinary approach to address them.

Aim of the article. The primary task of this research is to evaluate the effectiveness of advanced methodologies and innovations in foreign language acquisition within higher education contexts. This involves:

1. Analyzing the impact of digital tools, immersive environments, personalized learning, and cognitive science-based strategies on language learning outcomes.

2. Identifying the challenges and limitations associated with these innovations.

3. Providing recommendations for their successful implementation in higher education settings.By fulfilling this task, the research aims to contribute to the development of innovative, inclusive, and effective language learning environments in higher education

Main research. Digital Tools and Language Learning Apps. Digital tools and language learning apps have revolutionized the way students acquire foreign languages. These platforms offer a range of features, including interactive exercises, multimedia content, and real-time feedback, that cater to diverse learning styles. For example, Duolingo's gamified approach motivates learners through rewards and progress tracking, while Babbel's focus on conversational skills helps students practice real-world communication.

Research by Godwin-Jones [7:9] highlights the benefits of mobile-assisted language learning (MALL), which allows learners to access language resources anytime, anywhere. This flexibility is particularly advantageous for higher education students, who often juggle multiple responsibilities. However, the effectiveness of these tools depends on their design and the learners' engagement levels. While some

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students thrive in self-directed learning environments, others may require additional support and guidance.

Immersive environments, such as VR and AR, offer unique opportunities for language practice and cultural immersion. VR simulations create realistic scenarios where learners can interact with virtual characters and environments, enhancing their speaking, listening, and comprehension skills. For instance, a VR-based language learning program might simulate a market in a Spanish-speaking country, allowing students to practice bargaining and conversational skills in a culturally authentic context.

Studies by Lin and Lan [11:490] have shown that VR-based language learning improves learners' confidence and fluency by providing a safe space for practice and experimentation. However, the implementation of VR and AR technologies in higher education faces challenges related to cost, accessibility, and technical expertise. Institutions must invest in the necessary infrastructure and provide training for educators to effectively integrate these tools into the curriculum.

Personalized Learning and Adaptive Technologies. Personalized learning approaches leverage adaptive technologies to tailor instruction to individual learners' needs. AI-powered platforms analyze learners' performance data to identify strengths, weaknesses, and learning patterns. Based on this analysis, the platform adjusts the content, pace, and difficulty level to optimize learning outcomes.

For example, the AI-driven language learning platform Lingvist uses machine learning algorithms to predict which words and phrases a learner is likely to forget and reinforces them through spaced repetition. Research by Holmes, Bialik, and Fadel [9:55] emphasizes the potential of personalized learning to address the diverse needs of higher education students, including those with varying levels of prior language experience and learning preferences.

However, the success of personalized learning depends on the quality of the data and algorithms used. Inaccurate or biased data can lead to suboptimal recommendations, while over-reliance on technology may neglect the importance of human interaction and social learning. Therefore, a balanced approach that combines personalized learning with collaborative and communicative activities is essential.

Cognitive Science-Based Strategies. Cognitive science has provided valuable insights into the mechanisms of language acquisition, informing the development of effective learning strategies. For instance, research on the spacing effect has demonstrated that spaced repetition enhances long-term retention of vocabulary and grammar. Language learning apps like Anki and Memrise incorporate this principle by scheduling review sessions at optimal intervals.

Additionally, studies on the role of motivation and self-regulation in language learning have highlighted the importance of fostering intrinsic motivation and self-directed learning behaviors. Techniques such as goal setting, self-monitoring, and reflective practice can help students take ownership of their learning and persist in the face of challenges.

However, the application of cognitive sciencebased strategies in higher education requires careful consideration of individual differences and contextual factors. Educators must be trained to design and implement strategies that align with learners' cognitive profiles and learning environments.

Conclusion. The research presented in this article underscores the transformative potential of advanced methodologies and innovations in foreign language acquisition within higher education contexts. By analyzing the impact of digital tools, immersive environments, personalized learning, and cognitive sciencebased strategies, the study reveals significant improvements in language learning outcomes, particularly in engagement, retention, and skill development. However, the findings also highlight critical challenges and limitations that must be addressed to fully realize the benefits of these innovations. Key findings and results about digital tools Language learning apps (e.g., Duolingo, Babbel) and Al-driven platforms have proven effective in enhancing vocabulary acquisition, grammar practice, and basic conversational skills. For example, research by Vesselinov and Grego [19:15] demonstrated that Duolingo users improved their language proficiency by an average of 8.1 points on a 12-point scale after 34 hours of study. However, there still exist limitations: these tools are less effective for advanced language proficiency and real-world communication, as they often lack opportunities for authentic interaction and cultural immersion.

Immersive Environments (VR/AR): VR and AR technologies provide authentic, contextualized learning experiences that improve speaking, listening, and cultural understanding. Studies by Lin and Lan [11:496] showed that VR-based language learning enhances learners' confidence, fluency, and pronunciation by simulating real-world scenarios. However, high costs, technical complexity, and infrastructure requirements limit the accessibility and scalability of these technologies, particularly in underfunded institutions.

Personalized Learning: Al-powered personalized learning platforms tailor instruction to individual learners' needs, preferences, and progress, leading to significant improvements in language proficiency. Research by Holmes, Bialik, and Fadel [9:102] highlights the effectiveness of adaptive learning in addressing specific areas of difficulty and providing customized feedback. However, over-reliance on technology may neglect the social and collaborative aspects of language learning, and algorithmic biases can lead to suboptimal recommendations.

Cognitive Science-Based Strategies: principles such as spaced repetition, self-regulated learning, and goal setting optimize long-term retention and motivation. Studies emphasize the effectiveness of these strategies in enhancing vocabulary retention and grammar mastery. The limitations are the following: the application of these strategies requires careful alignment with learners' cognitive profiles and learning environments, which can be challenging to implement consistently.

Therefore, the following recommendations are considered to be taken into account

It would be optimal to develop low-cost or open-access versions of advanced tools (e.g., mobile apps, web-based platforms) to make them accessible to a wider audience. As far as teacher training and support in concerned it would be highly desirable to provide comprehensive training programs for educators to effectively integrate advanced methodologies into their teaching practices and also to offer workshops, online courses, and peer mentoring programs focused on technology-enhanced language teaching. It would also be highly valuable to adopt a blended approach that combines technology-driven instruction with teacher-led activities to ensure a balanced learning experience and develop guidelines for integrating digital tools into curricula without compromising the role of human interaction.

The research demonstrates that advanced methodologies and innovations have the potential to revolutionize foreign language acquisition in higher education by enhancing engagement, retention, and skill development. However, their successful implementation requires addressing critical challenges related to accessibility, pedagogical integration, ethical concerns, and long-term retention. Educators can create inclusive, engaging, and effective language learning environments by adopting a holistic, interdisciplinary approach that combines technology, pedagogy, and cognitive science. These environments will not only prepare students for the linguistic and cultural demands of a globalized world but also ensure equitable access to high-quality language education for all learners.

To achieve this vision, it is essential to invest in teacher training, ethical frameworks, and longitudinal research, while fostering collaboration among educators, researchers, and technology developers. By doing so, higher education institutions can harness the full potential of advanced methodologies to transform language learning and empower students for success in an increasingly interconnected world

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