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EVALUATING THE EFFECTIVENESS OF EDUCATIONAL APPLICATIONS IN TARGET LANGUAGE ACQUISITION

Annotation. *The article examines the effectiveness of educational language-learning applications in the context of modern digital education. It analyzes the benefits of mobile platforms for second-language acquisition, including flexibility, gamification, personalization, and instant feedback. Particular attention is given to six pedagogical principles of effective educational apps: active, engaging, meaningful, social, iterative, and joyful learning. The article discusses research evidence demonstrating the positive impact of language-learning apps, especially Duolingo, on vocabulary, grammar, and learner motivation. It also considers limitations of app-based learning and emphasizes the importance of integrating digital tools with traditional instruction. The study concludes that properly designed and pedagogically grounded applications can significantly enhance target-language acquisition when used as complementary tools in structured learning environments.*

Key words: *second language acquisition, educational apps, mobile learning, gamification, active learning, Duolingo, digital pedagogy, language motivation.*

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TA'LIMNI RAQAMLI O'TKAZISH KONTEKSTIDA CHET TILNI O'RGANISH UCHUN TA'LIM TA'LIMLARI SAMARALI

Annotatsiya. *Maqolada zamonaviy raqamli ta'lim sharoitida xorijiy tilni o'rganishda ta'limiy ilovalarning samaradorligi tahlil qilinadi. Mobil platformalarning ikkinchi tilni o'zlashtirishdagi afzalliklari, jumladan moslashuvchanlik, o'yinlashtirish (gamifikatsiya), shaxsiylashtirilgan ta'lim va tezkor fikr-mulohaza berish imkoniyatlari ko'rib chiqiladi. Shuningdek, samarali ta'limiy ilovalarning olti asosiy tamoyili – faollik, jalb etuvchanlik, mazmuniylik, ijtimoiylik, takroriylik va zavqlilik – ilmiy jihatdan asoslab beriladi. Duolingo misolida ilovalarning lug'at boyligi, grammatika va motivatsiyaga ijobiy ta'siri tadqiqotlar asosida yoritiladi. Shu bilan birga, ilova asosidagi ta'limning cheklovlari ko'rsatilib, an'anaviy ta'lim bilan uyg'unlashtirish zarurligi ta'kidlanadi. Xulosa sifatida, pedagogik tamoyillarga asoslangan ta'limiy ilovalar to'g'ri qo'llanganda xorijiy tilni o'rganish samaradorligini sezilarli darajada oshirishi qayd etiladi.*

Kalit so'zlar: *ikkinchi tilni o'rganish, ta'limiy ilovalar, mobil ta'lim, gamifikatsiya, faol o'rganish, Duolingo, raqamli pedagogika, til motivatsiyasi.*

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ЭФФЕКТИВНОСТЬ ОБРАЗОВАТЕЛЬНЫХ ПРИЛОЖЕНИЙ ДЛЯ ИЗУЧЕНИЯ ИНОСТРАННОГО ЯЗЫКА В УСЛОВИЯХ ЦИФРОВИЗАЦИИ ОБРАЗОВАНИЯ

Аннотация. *В статье рассматривается эффективность образовательных приложений для изучения иностранного языка в условиях цифровизации образования. Анализируются преимущества мобильных платформ для овладения вторым языком, включая гибкость обучения, элементы геймификации, персонализацию и оперативную обратную связь. Особое внимание уделяется шести педагогическим принципам эффективных образовательных приложений: активность, вовлечённость, осмысленность, социальность, итеративность и элемент удовольствия. На основе исследований раскрывается положительное влияние приложений, в частности Duolingo, на развитие лексики, грамматических навыков и мотивации обучающихся. Также рассматриваются ограничения цифрового обучения и подчёркивается необходимость его сочетания с традиционными методами*

преподавания. Делается вывод о том, что при правильной педагогической интеграции образовательные приложения способны существенно повысить эффективность изучения целевого языка.

Ключевые слова: *изучение второго языка, образовательные приложения, мобильное обучение, геймификация, активное обучение, Duolingo, цифровая педагогика, мотивация обучения.*

Introduction. Modern language learning increasingly relies on digital platforms. Educational apps offer learners anytime-anywhere access to lessons, practice, and feedback. Recent market analyses project that the global language-learning app market will grow from about $4.2 billion in 2023 to $16.2 billion by 2033. This explosive growth reflects widespread adoption: Duolingo alone now boasts over 500 million registered users worldwide. These trends, accelerated by the COVID-19 pandemic's push to remote learning, raise a crucial question: how well do these apps actually work for acquiring a new language? Research shows that well-designed language-learning apps can significantly boost learning – but their success depends on how they are built and used. Below we discuss key benefits of apps, design principles for effective learning, and research evidence on their impact.

Literature review. Benefits of Language-Learning Apps. Educational apps offer several advantages that can accelerate language acquisition. They provide flexible, self-paced learning: learners can study anytime and anywhere, whether commuting, waiting in line, or at home. Many apps employ gamification (points, levels, rewards) to keep users engaged; by turning exercises into interactive games, apps make practice fun and motivate learners to continue., For example, Duolingo organizes learning content into thematic modules (e.g., "Intro," "Phrases," "Travel," "Restaurant," "Family"), presented through circular progress indicators that visualize learner advancement (see Figure 1). The platform also incorporates competitive elements such as league rankings and daily XP goals, reinforcing motivation through gamification mechanisms.

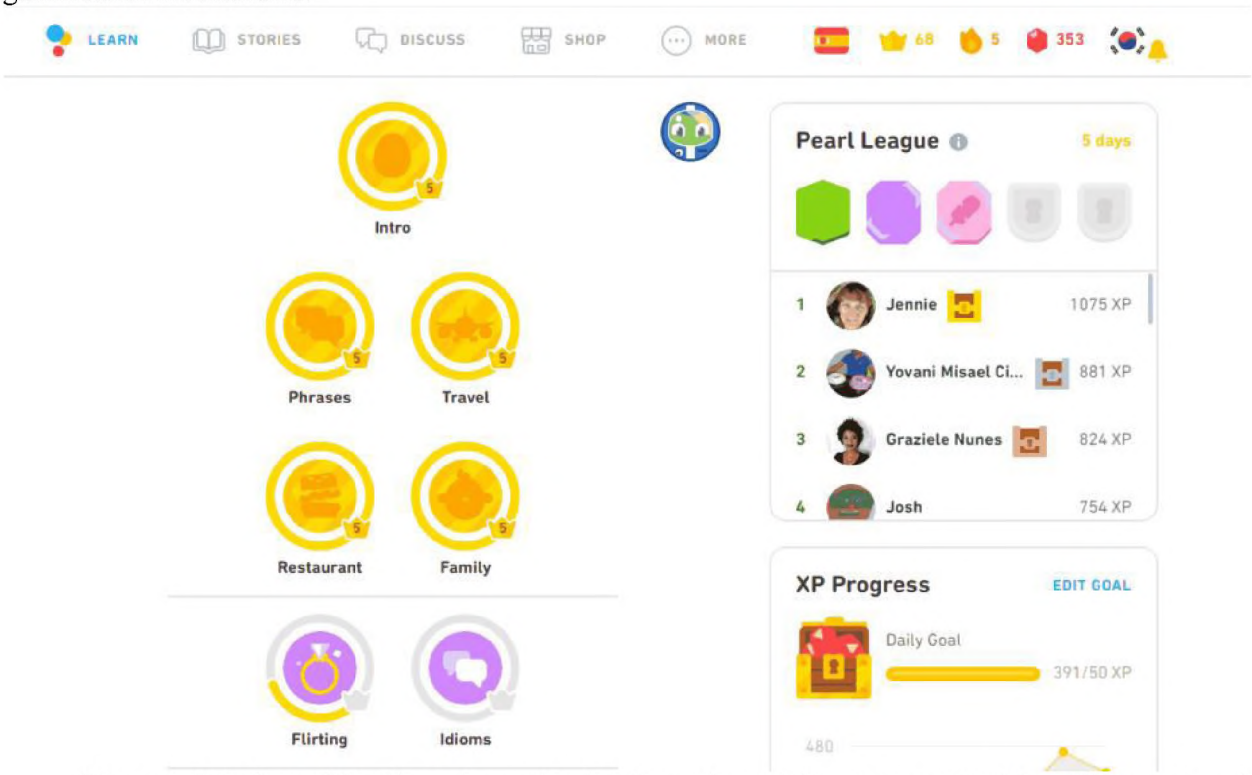


Figure 1. Interface of Duolingo demonstrating thematic modules, progress tracking, XP system, and competitive league ranking.

The interface illustrates key gamification features: visual progress bars, reward badges, daily goals, and leaderboard positioning (Pearl League). These elements are designed to increase learner engagement through immediate feedback, goal-setting, and social comparison.

Apps also enable targeted skill practice and instant feedback. Learners can choose modules focusing on specific skills – vocabulary, grammar, pronunciation, listening or speaking – and receive immediate corrections. For instance, some apps let learners practice pronunciation and get automated feedback on accuracy. This instant assessment encourages learners and helps them identify errors quickly. Apps often include rich multimedia (audio, text, images) that simulates real-life contexts. They may create

conversational scenarios or visual cues so learners practice in contexts similar to actual communication. Finally, apps can personalize learning: adaptive algorithms adjust difficulty based on the learner's performance, ensuring content is neither too hard nor too easy. This kind of personalization has been shown to boost motivation. In one study, adult learners using Duolingo reported higher sustained interest and confidence than a comparison group in a classroom setting, partly attributed to the app's tailored challenges and rewards.

In short, apps make language practice convenient, engaging and interactive. By leveraging multimedia, gamification and personalization, they can keep learners active and motivated. As one review notes, language apps help learners "continue their studies" outside class and provide "powerful complementary tools" to traditional methods.

Principles of Effective Language-Learning Apps. Not all apps are equally effective. Educational researchers have identified core principles that language apps should follow to truly support learning. According to the Brookings Center for Universal Education, effective learning games/apps must be active, engaging, meaningful, social, iterative, and joyful. These principles ensure that apps stimulate deeper learning rather than just rote drilling:

- **Active Learning:** The app should require meaningful actions from learners, not just passive tapping. For example, instead of only swiping to choose answers, learners should manipulate objects, construct sentences, or speak phrases. Simple tapping for "right/wrong" is not enough for true acquisition. Active tasks force learners to recall or produce language, engaging more cognitive processes.
- **Full Engagement:** Apps should immerse students fully in the activity. Good content design avoids distractions and keeps learners focused on the task or storyline. Quality graphics, compelling scenarios, and interactive challenges help students enter a "flow" state. When the content is engaging, learners forget they are studying and become absorbed, which enhances retention.
- **Meaningful Context:** Learning activities must connect to the learner's existing knowledge and real-life contexts. Effective apps situate new vocabulary or grammar in situations learners can relate to. For instance, a lesson might revolve around shopping or telling time – contexts familiar to the learner – so the language feels useful and connected to prior experiences. When learning is contextualized, students can link new information to what they already know, making it more memorable.

By combining these principles, developers create "playful learning" experiences that align with how people naturally learn languages. In practice, many popular apps (e.g. Duolingo, Memrise, Busuu) incorporate at least some of these elements: they are largely active and engaging through gamified quizzes, some include social leaderboards or forums, and they ensure repetition of content. When all six principles are present, apps can truly supplement classroom learning.

Analysis and results. Research Evidence on Effectiveness. A large body of research has begun to evaluate how well language-learning apps actually work. Several systematic reviews and studies suggest positive outcomes when apps are used appropriately.

A meta-analysis by Mihaylova et al. (2022) synthesized 23 studies comparing mobile-assisted language learning (MALL) with traditional learning. They found a moderate-to-strong overall effect of using language apps: learners using apps achieved significantly higher proficiency than control groups using conventional methods. In numerical terms, the effect size was $g \approx 0.88$, indicating substantial gains from app use. However, the authors caution that many studies had methodological issues (high risk of bias and low evidence quality), so results should be interpreted with care. Still, the consistency of an overall positive effect suggests that apps can be beneficial for second-language acquisition, especially for guided practice.

Recent empirical research further supports apps' effectiveness. In a controlled study at the University of Sheffield (2023), 337 adult Spanish speakers learning English were split into Duolingo-app and traditional-classroom groups. After a set period, the Duolingo group showed *greater gains in grammar and vocabulary* than the classroom group, and they reported higher overall interest and motivation in learning. The classroom learners did slightly better on listening comprehension, suggesting each method has strengths. Importantly, the Duolingo users maintained a more active learning habit – transitioning from passive to active engagement – and sustained their motivation throughout the course. The researcher attributes these results to the app's personalized content and gamified features (experience points, leaderboards, social challenges), which seemed to keep learners more engaged. She summarizes: *"Duolingo was actually in some aspects of language learning more effective than classroom instruction... [and] Duolingo learners were more motivated in general than classroom learners"*.

Duolingo's own research reports echo these findings. A company study of nearly 100 Portuguese speakers learning English found that after completing the Duolingo course's Basic (A2) level, learners achieved Intermediate High reading proficiency and Intermediate Mid listening proficiency on the ACTFL scale. This surpassed the expected A2 outcome (Intermediate Mid), indicating that Duolingo users often exceed official benchmarks. Similar results were found in a prior study of Spanish speakers. Together, these data suggest Duolingo can effectively develop reading and listening skills through regular app use.

To maximize benefits, educators recommend blended use of apps. Apps should *supplement* – not fully replace – traditional instruction. As a language school blog emphasizes, "apps shouldn't replace traditional methods entirely… A comprehensive understanding of grammar, culture, and real-life use is vital for true proficiency". This aligns with research: even the best app's content works best when reinforced by a human instructor or conversational partner. As Lim & Toh put it, the *teacher, not the tool, makes the difference*. Apps can provide drill and practice, but a teacher can clarify complex points, facilitate speaking practice, and ensure correct usage.

Finally, access and equity are considerations. Many learners, especially in under-resourced regions, benefit from free apps since they lack access to paid tutors. Duolingo and similar platforms are universally accessible via smartphone, removing cost and location barriers. However, not all languages or dialects have robust app support. And excessive screen time raises concerns, so app learning should be balanced with offline activities.

Conclusion. Educational language apps have emerged as powerful supplements to traditional teaching. When well-designed and properly integrated, apps offer flexible, engaging practice that can accelerate learning of vocabulary, grammar and comprehension skills. Empirical studies consistently find that motivated learners using apps outperform peers using only conventional methods on many metrics. These gains rest on adhering to sound pedagogical principles: apps should be interactive, immersive, meaningful and enjoyable. They must also be part of a structured learning plan, with teachers or parents guiding usage and providing feedback.

Overall, the evidence suggests that properly used educational apps can significantly enhance target-language learning – turning study time into active, playful, and effective practice. As technology and pedagogical research advance, these digital tools are likely to become even more integral to language education, empowering learners around the globe to achieve proficiency on demand.

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DEVELOPING SPEAKING SKILLS IN PRESCHOOL ENGLISH EDUCATION: A COMPARATIVE METHODOLOGICAL ANALYSIS

Annotation. *This study presents a comparative methodological analysis of approaches used to develop speaking skills in preschool English education in Uzbekistan and Finland. The research focuses on three key pedagogical methods: Total Physical Response (TPR), Content and Language Integrated Learning (CLIL), and Play-Based Learning (PBL). The study examines how these methods are implemented within different educational systems. While Uzbekistan's preschool English instruction often emphasizes structured teacher-led activities and controlled language practice, Finland's system is characterized by child-centered, play-oriented, and integrated learning environments. The findings suggest that although TPR, CLIL, and PBL are present in both contexts, their methodological application differs significantly. The study highlights the importance of balancing structured instruction with communicative and play-oriented strategies to enhance speaking skill development in preschool English classrooms.*