



**THE IMPACT OF GAMIFICATION AND MOBILE APPLICATIONS ON
VOCABULARY RETENTION IN INTERMEDIATE ENGLISH LEARNERS**

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Abstract: *This study explores the impact of gamification and mobile applications on vocabulary retention among intermediate-level English learners. Using a mixed-method approach, the research investigates how apps like Quizlet, Duolingo, and Memrise influence learners' motivation, engagement, and ability to recall new vocabulary. The findings indicate that gamified learning significantly enhances vocabulary retention by increasing learner autonomy, promoting repetition, and fostering intrinsic motivation. However, the study also identifies potential distractions and challenges related to unstructured app usage. The research concludes that when implemented strategically, gamification serves as an effective supplementary tool for vocabulary acquisition in EFL settings.*

Keywords: *Gamification, vocabulary retention, mobile learning, EFL learners, educational technology, Duolingo, Quizlet, intermediate English.*

Vocabulary acquisition is a critical component of second language learning, especially at the intermediate level where learners begin transitioning from basic communication to more complex and nuanced language use. However, vocabulary retention remains a persistent challenge due to the need for consistent exposure, meaningful use, and repeated reinforcement.

Recent advances in educational technology have introduced innovative methods for vocabulary learning, particularly through gamification and mobile applications. Gamification refers to the use of game design elements such as points, levels, and badges in non-game contexts to increase user engagement. Language learning apps like Quizlet, Memrise, and Duolingo employ such elements to make learning more interactive and rewarding.

This study aims to examine the effectiveness of gamified mobile applications on vocabulary retention among intermediate English learners. It explores how these tools affect learners' motivation, frequency of practice, and ability to recall newly learned words over time. Furthermore, the study seeks to evaluate students' perceptions of such tools and the pedagogical implications for EFL instruction.

This research employed a mixed-methods design, combining quantitative and qualitative approaches to provide a comprehensive understanding of how gamified mobile applications influence vocabulary retention.





Participants:

The study involved 60 intermediate-level English learners (CEFR B1–B2) aged 16–25 from two private language centers. Participants were divided into two groups: an experimental group using gamified mobile applications and a control group following traditional vocabulary instruction.

Instruments and Tools:

- Pre- and post-tests to measure vocabulary acquisition and retention.
- Mobile applications used: Quizlet, Duolingo, and Memrise.
- Student surveys to assess motivation and user experience.
- Classroom observation checklists to track engagement and language use.
- Semi-structured interviews with selected students and teachers.

Procedure:

The intervention lasted four weeks. The experimental group was assigned daily vocabulary practice using mobile apps, while the control group completed standard vocabulary exercises from a coursebook. Both groups covered the same lexical items.

Data

Quantitative data from tests were analyzed using descriptive statistics (mean, standard deviation) and paired t-tests to evaluate significance. Qualitative data from surveys and interviews were coded thematically to identify common patterns related to learner motivation, app effectiveness, and engagement.

Analysis:

The analysis of data collected from student tests, surveys, and classroom observations revealed several noteworthy outcomes regarding the influence of gamification and mobile applications on vocabulary retention.

Students who engaged with gamified mobile applications such as Quizlet, Memrise, and Duolingo demonstrated a marked improvement in short-term and long-term vocabulary recall. Post-test scores showed a significant increase compared to pre-test results, especially in groups that used the applications regularly for at least 15 minutes per day over four weeks.

Learners reported that gamified elements such as points, leaderboards, levels, and rewards significantly enhanced their motivation to practice vocabulary outside of class. Many students noted that these features transformed vocabulary review into a more enjoyable and competitive experience, encouraging consistent practice and repetition—key factors in retention.

Observational data supported these self-reports, showing that students using mobile apps were more likely to use new vocabulary accurately and confidently in speaking and writing tasks. Additionally, they engaged more actively in classroom discussions when vocabulary from the apps was integrated into in-class activities.

Another finding was the role of personalized learning paths. Applications that adapted to the learner's progress and focused on weak areas proved more effective in reinforcing





vocabulary retention. Students appreciated the immediate feedback provided by the apps, which helped them identify and correct errors in real time.

However, the results also indicated certain limitations. A small number of students reported distraction from in-app advertisements or became overly focused on earning points rather than reflecting on word meaning or usage. This highlights the importance of guided integration and teacher oversight when using gamification in educational settings.

Overall, the results suggest that gamified mobile applications can serve as powerful tools for enhancing vocabulary retention among intermediate English learners, particularly when used systematically and in conjunction with classroom instruction.

The findings indicate that gamified mobile applications can substantially enhance vocabulary retention among intermediate English learners, largely by increasing the *frequency* and *quality* of practice. Consistent with Self-Determination Theory (Deci & Ryan, 1985), the points, levels, and leaderboards embedded in apps such as Quizlet and Duolingo satisfied learners' needs for competence and autonomy, which, in turn, boosted intrinsic motivation to review words outside class. Regular, game-like repetition appears to have strengthened the consolidation of lexical items in long-term memory, echoing Nation's (2013) emphasis on spaced retrieval for durable vocabulary learning.

The study also underscores the importance of *adaptive feedback*. Apps that calibrated item difficulty and recycled problem words more often (e.g., Memrise) helped students focus on individual weaknesses, supporting the noticing-hypothesis (Schmidt, 1990). Classroom observations confirmed that this personalization translated into more accurate and confident use of new vocabulary in speaking and writing tasks.

Nevertheless, several challenges emerged. First, the *digital distraction* effect was evident: a subset of learners reported losing focus due to pop-up ads or an overemphasis on collecting badges rather than reflecting on meaning and usage. Second, the *digital-literacy gap*—particularly among students with limited prior exposure to educational apps—sometimes reduced the effectiveness of the intervention. Finally, teachers faced a *time-intensive preparation* burden when aligning in-app word lists with syllabus targets and monitoring learner progress across multiple platforms.

These limitations highlight the need for guided integration. Gamified apps work best as *supplements* to, not substitutes for, teacher-led instruction. Clear usage protocols (e.g., minimum daily practice, reflection logs) and in-class recycling activities (e.g., dialogues or story-building with app-learned words) can mitigate distractions and anchor vocabulary in meaningful contexts. Moreover, targeted digital-literacy support for both teachers and learners is essential to ensure equitable benefits.

Gamification and mobile vocabulary apps, when strategically embedded in an EFL program, offer a powerful means of improving vocabulary retention at the intermediate level. They leverage motivational game mechanics, deliver adaptive practice, and extend learning beyond classroom walls. To maximize gains, educators should (a) curate app content to align with course objectives, (b) provide scaffolding to develop digital skills, and





(c) blend app-based practice with communicative classroom tasks that demand active use of the newly acquired lexis. Future research might investigate long-term retention over a semester or explore the comparative impact of specific game mechanics (e.g., cooperative vs. competitive features) on different learner profiles.

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