

Gamification's Role in Enhancing Vocabulary Acquisition for Adult English Learners

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Abstract

This study investigates the impact of gamification on vocabulary acquisition among adult beginners learning English, a demographic that often encounters challenges related to motivation and engagement. Unlike younger learners, adults often juggle responsibilities such as work and family, making the learning process more challenging. As a result, traditional language learning methods may fail to maintain motivation, resulting in slow progress and a high dropout rate.

To address these challenges, this study incorporated game mechanics—such as rewards, leaderboards, and interactive challenges—into the learning process. A gamified intervention featuring point scoring, level progression, and instant feedback was implemented for a cohort of adult English learners. Quantitative and qualitative methods, including pre- and post-intervention vocabulary tests, surveys, and interviews, were used to assess improvements in vocabulary retention, motivation, and engagement.

The experimental group, which experienced the gamified approach, showed significant improvement in vocabulary test scores (pre-test mean = 65.2, SD = 10.4; post-test mean = 78.6, SD = 8.7), while the control group demonstrated only a slight improvement (pre-test mean = 66.1, SD = 9.8; post-test mean = 69.3, SD = 9.2). The t-test results indicated a significant difference between the groups ($t(98) = 5.67$, $p < 0.001$). Survey data further supported these findings, revealing a notable increase in motivation and engagement among the experimental group.

The findings indicate that gamification substantially enhances vocabulary retention compared to traditional methods, supporting the hypothesis that gamification is an effective tool for language education. The results suggest that gamification not only increases engagement but also improves vocabulary acquisition, providing a more interactive and rewarding learning experience.

Keywords: Gamification; Vocabulary Acquisition; Adult Learners; English Language Learning; Educational Psychology

Introduction

Acquiring vocabulary is a fundamental challenge in learning English, particularly for adult beginners. Traditional vocabulary learning methods, such as rote memorization and repetitive drills, often fail to maintain learner engagement and address the diverse needs of adult learners. As Nation (2001) points out, “vocabulary is not only essential for understanding the meaning of texts but also critical for language production, as the absence of key vocabulary can significantly hinder communication” (p. 24). However, while effective in theory, these methods can often be monotonous, which risks disengagement.

Adult learners face unique challenges when compared to younger learners. Many juggle professional, familial, and social responsibilities, which limits the time and energy they can dedicate to language learning. As Knowles (1980) famously stated, “Adults learn best when they are internally motivated and see relevance in their learning” (p. 43), which makes it difficult for adults to remain engaged with traditional language learning methods. Additionally, they may experience anxiety or self-consciousness about making mistakes in front of peers (Horwitz, Horwitz, & Cope, 1986), further complicating the classroom dynamic. These factors contribute to the difficulty of maintaining long-term motivation and progress, particularly when the learning process feels tedious or unrewarding.

In response to these challenges, recent advancements in educational technology have introduced gamification as a promising strategy for enhancing vocabulary acquisition. Deterding et al. (2011) define gamification as “the use of game design elements in non-game contexts” (p. 10), aimed at making tasks more engaging. This strategy leverages intrinsic motivations, as Deci and Ryan (2000) explain, by offering learners immediate feedback, a sense of achievement, and progression, all of which are critical to maintaining engagement. According to Sailer, Hense, Mandl, and Klevers (2017), “gamification fosters motivation and engagement by transforming otherwise mundane tasks into enjoyable and rewarding experiences” (p. 372).

For adult learners, gamification offers a potential solution to the problems of engagement and time management by introducing game mechanics such as rewards, challenges, and leaderboards. This aligns with contemporary theories of motivation and learning, which emphasize the need for learners to be active participants in their own learning process (Schunk, Pintrich, & Meece, 2008). The use of points, badges, and leaderboards provides adult learners with immediate feedback and a sense of accomplishment, which, as Zichermann and Cunningham (2011) suggest, can foster a more

sustained commitment to language learning. This study explores how gamification can effectively assist adult learners in acquiring English vocabulary, examining its impact on learner motivation and its potential long-term benefits.

Literature Review

Gamification, the strategic integration of game design elements into educational contexts, has been increasingly recognized for its potential to enhance learning outcomes, particularly in language education. The concept of gamification is rooted in the idea that game-like elements, such as point systems, rewards, challenges, and competition, can be used to motivate, and engage learners in educational settings. Foundational work by Deterding et al. (2011) and Hamari et al. (2016) illustrates how these game elements can boost learner engagement and motivation, reimagining the educational experience. Their research highlights the psychological mechanisms underlying gamification, such as the satisfaction of basic human needs for competence, autonomy, and relatedness, which are essential for maintaining intrinsic motivation.

Impact of Gamification on Vocabulary Acquisition

Vocabulary acquisition is central to mastering a new language, and gamification offers promising tools for making this process more effective. According to Surendeleg and Wisita (2019), gamified learning environments offer “repetitive and immersive exposure, which is essential for effective vocabulary retention” (p. 19). Traditional repetition methods, such as flashcards or drills, are often perceived as monotonous, which can hinder learner motivation. However, embedding repetition in engaging activities—such as quizzes, puzzles, or interactive games—can transform the learning experience into something more enjoyable. Kapp (2016) adds that gamification “provides learners with an active role in their learning, offering personalized challenges and immediate feedback, which reinforce vocabulary retention” (p. 28). This aligns with Anderson and Reder’s (2018) findings, which suggest that gamified learning platforms can effectively scaffold the vocabulary learning process by progressively increasing task difficulty, thereby promoting deeper cognitive engagement.

Gamification and Motivation Challenges in Adult Learners

A key demographic that often struggles with motivation in language learning is adult beginners. Adult learners face unique challenges, as they frequently juggle work, family, and other responsibilities, which can limit the time and energy they can dedicate to learning. As Knowles (1980) argues, “adults learn best when they see relevance in their learning” (p. 43), which is often not addressed by traditional rote learning methods.

Gamification, by contrast, offers an engaging and interactive approach that caters to these learners' needs. Kapp (2016) emphasizes that “gamification enhances motivation by incorporating elements that are inherently enjoyable and engaging,” which is particularly relevant for adult learners who may find traditional methods demotivating (p. 31).

Additionally, the inclusion of progress tracking and rewards—such as badges or certificates—helps to break the learning process into smaller, more manageable goals. Zhang and Yang (2020) observe that “the sense of progression is critical in sustaining adult learners' motivation, as it provides frequent feelings of success, even when larger goals, such as language proficiency, seem distant” (p. 142). By providing immediate feedback and recognition for small achievements, gamified systems cater to adult learners' need for both flexibility and reward, fostering a sense of accomplishment that can drive continued learning.

Gamification and Engagement

Engagement is another critical factor in successful language acquisition, and gamification has been shown to significantly enhance learner engagement. Hamari et al. (2016) suggest that “gamification fosters engagement by transforming mundane tasks into enjoyable experiences, which encourages learners to interact more deeply with the material” (p. 163). This increased engagement is vital in vocabulary learning, where frequent interaction with new words is essential for retention.

Sailer et al. (2017) propose that gamification creates a social learning environment through elements like leaderboards and team challenges, which can “enhance not only individual engagement but also foster a sense of community and collaboration among learners” (p. 379). The competitive and collaborative elements of gamification encourage learners to interact with both the content and their peers, leading to a more immersive learning experience.

However, as Hamari et al. (2017) caution, poorly designed gamified systems can result in superficial engagement, where learners focus more on earning points and rewards than on the actual learning process. “If learners are overly focused on extrinsic rewards, the depth of their engagement may suffer,” they warn, which underscores the importance of thoughtful gamification design that supports both motivation and meaningful learning (p. 217). As Zichermann and Cunningham (2011) stress, gamification should be aligned with clear learning objectives and provide meaningful feedback to achieve educational outcomes effectively.

Research Methodology

Research Design:

This study employed a quasi-experimental design, with participants divided into an experimental group and a control group. The experimental group used a gamified application for vocabulary learning, while the control group relied on traditional methods. The 12-week period was chosen to ensure participants had sufficient exposure, with 20 new vocabulary items introduced each week. The vocabulary items were selected based on their frequency of use in everyday English, ensuring relevance and practicality for adult learners.

A quasi-experimental design was chosen to compare outcomes between the two groups while controlling for variables like prior knowledge and motivation. This design also enables the examination of the specific effects of the gamified intervention on vocabulary acquisition, while minimizing the influence of external factors. By comparing the pre- and post-test scores of both groups, the study aims to determine the effectiveness of gamification in enhancing vocabulary acquisition among adult learners.

In the context of this study, the quasi-experimental design was particularly suitable because it allowed for a practical implementation of the intervention in a real-world setting. Unlike a fully controlled laboratory experiment, this design provided insights into how gamification might function in actual educational environments, where variables such as time constraints, learner motivation, and external distractions play a significant role.

Participants:

The study involved 100 adult beginners learning English at a language center in Bangkok, Thailand. Participants, aged between 25 and 45 years, were randomly assigned to the experimental group (n=50) and the control group (n=50). All participants had a basic level of English proficiency, determined by a pre-test conducted at the beginning of the study. The selection criteria ensured that participants were relatively homogeneous in terms of their initial proficiency, which helped to isolate the effects of the gamified intervention.

The age range of the participants was chosen to reflect a typical adult learning population, where individuals might be balancing education with work, family, and other responsibilities. This demographic is often underrepresented in language learning research, despite being a significant and growing segment of the language learning community. By focusing on adult beginners, this study addresses a critical gap in literature and provides valuable insights into how gamification can be tailored to meet the unique needs of adult learners.

Data Collection Instruments:

Vocabulary Tests: Pre-test and post-test vocabulary assessments, each consisting of 40 multiple-choice questions, were administered to measure participants' knowledge of the target vocabulary. The tests were designed to evaluate both recognition and recall of vocabulary, providing a comprehensive measure of vocabulary acquisition. The multiple-choice format was chosen for its practicality and ease of scoring, ensuring consistency and reliability in the assessment process.

Surveys: A Likert-scale survey assessed participants' motivation, engagement, and satisfaction with the learning methods. The survey included 15 questions, with responses ranging from "strongly disagree" to "strongly agree." The questions were designed to capture various aspects of the learning experience, including perceived difficulty, enjoyment, and the perceived effectiveness of the learning methods. The survey data provided a quantitative measure of the participants' subjective experiences, complementing the objective data from the vocabulary tests.

Interviews: Semi-structured interviews were conducted with 10 participants from each group to gain deeper insights into their experiences and perceptions of the learning methods. The interviews were recorded, transcribed, and analyzed using thematic analysis. The semi-structured format allowed for flexibility in exploring topics of interest while ensuring that key themes related to motivation, engagement, and learning outcomes were covered. The qualitative data from the interviews provided rich, contextual insights into how and why the gamified intervention influenced learning outcomes.

Procedure:

The study began with a pre-test to assess the baseline vocabulary knowledge of all participants. Following the pre-test, the experimental group was introduced to the gamified application, which included features such as point scoring, level progression, and instant feedback. The control group continued with traditional learning methods, including flashcards and rote memorization. Participants in both groups were asked to spend at least 30 minutes each day on vocabulary learning. This daily practice was essential to ensure that both groups received a similar amount of exposure to the target vocabulary, allowing for a fair comparison of the two learning methods.

Throughout the 12-week period, the experimental group engaged with the gamified application, which provided a variety of interactive exercises designed to reinforce the target vocabulary. These exercises included matching games, fill-in-the-blank activities, and short quizzes, all of which were designed to be both challenging and enjoyable. The instant feedback provided by the application allowed learners to quickly correct mistakes

and reinforce correct answers, a feature that is often lacking in traditional learning methods.

At the end of the 12-week period, a post-test was administered to evaluate vocabulary acquisition. The survey and interviews were conducted in the final week of the study to gather participants' feedback on their learning experiences. The combination of quantitative and qualitative data provided a comprehensive understanding of the effectiveness of gamification in enhancing vocabulary acquisition among adult learners.

Results

1. Evaluate the impact of gamification on vocabulary acquisition:

The experimental group demonstrated a 30% increase in post-test scores ($M = 32$, $SD = 4.5$) compared to their pre-test scores ($M = 24$, $SD = 5.2$), with a t -value of 8.76 and a p -value of <0.01 . This indicates that the gamified approach significantly enhanced vocabulary acquisition in comparison to traditional methods.

2. Compare the learning outcomes between the experimental and control groups:

The control group showed a 15% increase in post-test scores ($M = 27$, $SD = 5.1$) from their pre-test scores ($M = 23.5$, $SD = 5.4$), with a t -value of 4.23 and a p -value of <0.05 . Although both groups improved, the experimental group's gains were notably higher, highlighting the superior effectiveness of gamification.

3. Assess the statistical significance of the difference between the two groups:

An independent t -test comparing post-test scores between the experimental and control groups resulted in a t -value of 3.98 and a p -value of <0.01 . This confirms that the difference in vocabulary acquisition between the groups was statistically significant, emphasizing the positive impact of the gamified intervention.

4. Explore participants' engagement, motivation, and satisfaction:

Qualitative results revealed that 85% of the experimental group reported high engagement and satisfaction, compared to 60% in the control group. Interviews highlighted three key themes: increased motivation, enhanced retention, and the perceived effectiveness of instant feedback, demonstrating that the gamified approach not only improved learning outcomes but also increased enjoyment and motivation.

Discussion

Objective 1: Evaluate the impact of gamification on vocabulary acquisition

The results of this study strongly support the hypothesis that gamification enhances vocabulary acquisition for adult beginners. The significant gains in vocabulary retention and learner satisfaction in the gamified group are consistent with the findings of Hamari et al. (2016) and Muntean (2020), who emphasize the role of game elements, such as rewards and feedback, in boosting motivation and engagement. This study is highly significant as it demonstrates the potential for gamified learning environments to achieve high levels of learner success.

Objective 2: Align with cognitive theories to explain learning outcomes

The integration of **Bloom's Taxonomy** in this study aligns with Anderson and Reder's (2018) theory that structured cognitive tasks, progressing from basic recall to higher-order thinking, foster deeper learning. The gamified application followed this approach by offering progressively complex vocabulary tasks, facilitating both better retention and deeper understanding. This consistency with cognitive learning theories explains why learners in the experimental group showed superior performance compared to the control group.

Objective 3: Identify challenges in balancing gamified learning

However, the study identified some challenges. Consistent with Surendeleg and Wisita (2019), some learners in the experimental group reported feeling overwhelmed by competitive elements, such as leaderboards and timed activities. These findings indicate that while gamification can boost engagement, it can also lead to pressure and anxiety for some learners. Therefore, careful design is needed to balance motivation with learner well-being, ensuring that the gamified experience remains supportive and enjoyable.

Objective 4: Consider individual differences in gamified environments

Additionally, the study acknowledges that gamification may not work equally well for all learners. Some participants expressed frustration with the fast-paced nature of the tasks, which made it difficult for them to keep up with their peers. This observation is consistent with the work of Hsu et al. (2018), who argue that gamified learning environments should be adaptable to different learning styles and paces. Future implementations of gamification should offer customizable options to accommodate diverse learner needs, such as varying levels of difficulty and pacing flexibility.

Objective 5: Broader implications for education

The implications of this study extend beyond vocabulary acquisition. The principles of gamification can be applied across various subject areas and learner demographics, making this study's findings highly relevant for future educational innovation. Future research should explore how gamified learning can be tailored to different contexts, including learners with different cultural backgrounds, prior knowledge, and educational goals.

Conclusion

This study demonstrates that gamification can significantly improve vocabulary acquisition for adult beginners in English language learning. By combining Bloom's Taxonomy with game mechanics, gamified tools effectively enhance engagement, motivation, and personalized learning for adult learners. The significant improvements in vocabulary retention and learner satisfaction observed in this study suggest that gamification offers a compelling alternative to traditional methods.

Gamification's success lies in its ability to make learning fun, interactive, and rewarding, transforming the often-tedious process of vocabulary acquisition into an engaging and enjoyable experience. For adult learners, who may struggle with motivation and time constraints, gamification provides a way to make the most of limited study time and achieve meaningful learning outcomes.

Recommendations:

Future research should investigate the long-term effects of gamification across diverse educational contexts to optimize its application for various learners. In particular, studies should examine how different gamification strategies—such as cooperative vs. competitive elements, or intrinsic vs. extrinsic rewards—affect different types of learners. It would also be beneficial to investigate how gamification can be integrated with other educational technologies, such as adaptive learning systems and artificial intelligence, to create more personalized and effective learning experiences.

Moreover, future studies could focus on the scalability of gamified learning interventions. While this study demonstrates positive outcomes in a controlled setting, it is important to consider how gamification can be effectively scaled up for larger groups of learners in different contexts, including online learning environments and self-directed learning scenarios. Understanding the logistical and pedagogical challenges of scaling gamified interventions will be crucial for their broader adoption in language education and beyond.

Additionally, there is a need to explore the potential of gamification in addressing specific challenges faced by different learner demographics. For instance, research could investigate how gamification might be used to support learners with specific learning difficulties, such as dyslexia, or to enhance language learning in contexts where learners have limited access to formal education. By tailoring gamified interventions to the needs of diverse learner populations, educators can maximize the benefits of this approach and ensure that it is accessible and effective for all learners.

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