

The Role of Gamification in Digital EFL Classrooms: A Study on Motivation and Retention

Mimin Aminah¹, Zainal Rafli², Fathiaty Murtadho³

¹Pendidikan Bahasa Inggris, Universitas Subang, Indonesia

²Linguistik Terapan, Universitas Negeri Jakarta, Indonesia

³ Linguistik Terapan, Universitas Negeri Jakarta, Indonesia

Corresponding Author: miminaminah@unsub.ac.id

Received: 14-10-2024 **Revised:** 22-11-2024 **Accepted:** 15-12-2024

Abstract

This study investigates the impact of gamification on student motivation and knowledge retention in digital English as a Foreign Language (EFL) classrooms, using a psycholinguistic approach. Gamification, the integration of game design elements in non-game contexts, has gained attention in education for its potential to enhance engagement and learning outcomes. This study aims to fill existing gaps in the literature by examining the nuanced effects of gamification on EFL learners' motivation and retention, areas that are critical for successful language acquisition. Employing a qualitative case study design, data were collected through semi-structured interviews, participant observation, and documentation from EFL students in a university setting where gamification is embedded in the curriculum. The findings indicate that gamification positively influences student motivation by creating an interactive and engaging learning environment that leverages intrinsic and extrinsic motivators. Elements such as points, badges, leaderboards, and immediate feedback foster a sense of achievement and competition, aligning with the principles of Self-Determination Theory and enhancing students' willingness to participate actively. In terms of knowledge retention, gamification supports long-term memory by providing repeated practice opportunities and immediate corrective feedback, which are crucial for language consolidation. However, the study also highlights challenges, including the variability in student responses to competitive elements, which may induce stress for some learners, and technological limitations that can hinder consistent engagement with gamified content. These findings suggest that while gamification holds considerable promise for enhancing motivation and retention in EFL contexts, its implementation must be carefully tailored to address individual differences and contextual constraints. In conclusion, this study contributes to the growing body of research on

gamification in education, demonstrating its potential to make language learning more engaging and effective. The insights provided by this study serve as a foundation for educators seeking to integrate gamification in digital language learning environments, aiming to enhance both student motivation and learning outcomes.

Keywords

Gamification, Students' Motivation, Knowledge Retention, English as a Foreign Language

The Role of Gamification in Digital EFL Classrooms: A Study on Motivation and Retention

Mimin Aminah¹, Zainal Rafli², Fathiaty Murtadho³

Introduction

The advent of digital technologies has significantly transformed the landscape of teaching English as a Foreign Language (EFL). The integration of digital tools into language education has not only facilitated access to diverse learning resources but has also enabled innovative pedagogical approaches. The proliferation of language learning applications and online platforms has created opportunities for interactive and personalized learning experiences, catering to the varied needs of learners in a globalized world (Nurtanto et al., 2021; , Limantara et al., 2023). This shift towards digital education necessitates a reevaluation of traditional teaching methodologies to enhance engagement and effectiveness in language acquisition.

Gamification Concept Gamification, defined as the application of game design elements in non-game contexts, has emerged as a powerful strategy in educational settings, particularly in language learning (Asiri, 2019). By incorporating elements such as points, levels, and rewards, gamification aims to create engaging and motivating learning environments. Research indicates that gamification can significantly enhance student engagement and foster a positive learning atmosphere, ultimately leading to improved educational outcomes (Tamtama et al., 2020; , Limantara et al., 2023). In the context of EFL, gamification not only makes learning more enjoyable but also encourages active participation, which is crucial for language retention and skill development (Díaz, 2023; , Simbaña-Simbaña, 2023).

The Importance of Motivation and Retention in EFL Learning Motivation plays a pivotal role in successful language learning, influencing both the effort students invest and their persistence in overcoming challenges (Zhang & Hasim, 2023). High levels of motivation are associated with increased engagement and a greater likelihood of achieving language proficiency. Furthermore, retention—the ability to recall and apply learned material—is essential for long-term language acquisition. Studies have shown that gamification can enhance both motivation and retention by providing immediate feedback, fostering a sense of achievement, and encouraging collaborative learning experiences (Wangi et al., 2022; , Putz & Treiblmaier, 2019). The interplay between motivation and retention is critical in EFL contexts, where learners often face the challenge of maintaining interest in language studies over extended periods.

Research Gaps Despite the growing body of literature on gamification in education, there remains a notable gap in understanding its specific impact on student motivation and retention within digital EFL classrooms. Most existing studies have focused on quantitative measures of learning outcomes, leaving a need for qualitative insights into how gamification influences learners' experiences and perceptions (Nieto-Escámez & Roldán-Tapia, 2021). Furthermore, the psychological aspects of gamification, particularly in relation to individual differences among learners, warrant further exploration.

This study aims to address these gaps by examining how gamification affects motivation and memory in EFL learning contexts, utilizing a psycholinguistic approach to provide a deeper understanding of these dynamics. In conclusion, the integration of gamification into digital EFL classrooms holds promise for enhancing student motivation and retention. As educational technologies continue to evolve, it is imperative to investigate their implications for language learning, ensuring that pedagogical practices align with the needs and preferences of contemporary learners.

Gamification in education has emerged as a significant pedagogical approach, defined as the integration of game design elements and mechanics into non-game contexts to enhance user engagement and motivation. Various scholars have contributed to the understanding of this concept. For instance, Deterding et al. describe gamification as the use of game design elements in non-game contexts, emphasizing its focus on enhancing engagement rather than merely incorporating playfulness (Woodcock & Johnson, 2017). This definition has evolved within educational contexts, where gamification aims to transform traditional learning environments into more interactive and engaging experiences for students (Shavab et al., 2021; Limantara et al., 2023).

The components of gamification are critical to its effectiveness in educational settings. Common elements include points, levels, badges, leaderboards, and missions, which serve to motivate learners and enhance their engagement. Points and levels provide immediate feedback and a sense of progression, while badges serve as recognition of achievements, fostering a sense of accomplishment (Satria, 2023; Buckley & Doyle, 2014). Leaderboards introduce a competitive element, encouraging students to strive for higher performance, which can be particularly effective in motivating learners (Hürsen & Bas, 2019). Missions or quests can contextualize learning objectives, making the educational experience more immersive and goal-oriented (Zvarych, 2019). Research indicates that these gamification elements can significantly enhance students' motivation and engagement, leading to improved learning outcomes (Afirando et al., 2023; Aini, 2019).

In the realm of language learning, particularly in English as a Foreign Language (EFL) contexts, gamification has been shown to have a profound impact on student engagement. By incorporating game-like elements into language learning applications, educators can create a more dynamic and interactive environment that encourages active participation (Tamtama et al., 2020; Nitiasih et al., 2020). For example, gamified applications often include vocabulary challenges, interactive quizzes, and collaborative tasks that not only make learning enjoyable but also facilitate deeper engagement with the material (Isa et al., 2022; Suryanto et al., 2020). Studies have demonstrated that such gamified approaches can lead to increased motivation and better retention of language skills, as students are more likely to engage with content that is presented in a fun and interactive manner (Mohammed & Özdamlı, 2021). Furthermore, gamification can help in creating a supportive community among learners, as they often collaborate and compete with peers, enhancing their overall learning experience (Zvarych, 2019; Piteira et al., 2017).

The transformation of English as a Foreign Language (EFL) learning in the digital era has been significantly influenced by the rapid advancement of digital technologies. These technologies have reshaped traditional pedagogical approaches, allowing for more interactive and engaging learning experiences. The integration of digital tools, such as mobile applications and online platforms, has facilitated access to language learning resources, enabling learners to engage with English in diverse and flexible ways. For instance, the use of Artificial Intelligence (AI) in EFL classrooms has been shown to enhance student motivation and engagement, providing personalized learning experiences that cater to individual needs (Moybeka, 2023). Furthermore, the digital era has fostered a globalized learning environment where learners can connect with

native speakers and other learners worldwide, enriching their language acquisition process (Zhang & Hasim, 2023).

Various digital platforms have emerged that incorporate gamification elements to enhance EFL learning. Applications like Duolingo and Kahoot have gained popularity for their engaging interfaces and game-like features, which motivate learners to practice their language skills regularly (Rosyidah, 2023; Irzawati, 2023). Duolingo, for example, employs gamification strategies such as points, levels, and badges to create a competitive yet supportive learning environment, which has been shown to improve vocabulary mastery and overall language proficiency (Rosyidah, 2023; Ali, 2022). Similarly, platforms that utilize mobile-assisted language learning (MALL) techniques have been effective in providing learners with interactive tasks that promote language skills in authentic contexts (Shadiev et al., 2019; Su et al., 2021). These platforms not only make learning enjoyable but also facilitate immediate feedback, which is crucial for language development (Pinto et al., 2021).

Despite the numerous opportunities presented by digital learning and gamification, several challenges persist in the EFL teaching landscape. One major challenge is the digital divide, where disparities in access to technology can hinder some learners from fully engaging with digital resources (Ramalingam et al., 2022). Additionally, the cognitive load associated with using multiple digital tools can overwhelm learners, making it difficult for them to focus on language acquisition (Shadiev et al., 2019). Moreover, educators may face difficulties in integrating gamification effectively into their teaching practices, as not all teachers are familiar with the necessary technology or pedagogical strategies (Asiri, 2019). However, these challenges also present opportunities for professional development and innovation in teaching methodologies. By embracing gamification and digital tools, educators can create more engaging and effective learning environments that cater to the needs of the modern learner (Phuong, 2020).

In conclusion, the digital era has transformed EFL learning through the integration of advanced technologies and gamification elements. While challenges remain, the potential for enhanced engagement and motivation in language learning is significant, paving the way for innovative teaching practices that can better serve learners in today's interconnected world.

Intrinsic and extrinsic motivation are critical concepts in the context of language learning, particularly in English as a Foreign Language (EFL) settings. Intrinsic motivation refers to the drive to engage in an activity for its inherent satisfaction, enjoyment, or interest, while extrinsic motivation involves performing an activity to achieve a separable outcome, such as rewards or recognition (Noori, 2023; Adara, 2019). In the digital classroom, gamification can significantly influence both types of motivation. For instance, gamified elements such as points, badges, and leaderboards can enhance extrinsic motivation by providing tangible rewards for learners' efforts (Noori, 2023; Yusny, 2013). Conversely, when learners engage with gamified content that is enjoyable and meaningful, their intrinsic motivation can also be fostered, leading to deeper engagement and sustained interest in language learning (Noori, 2023; Yusny, 2013). Research indicates that incorporating gamification strategies can create a more engaging learning environment, which is essential for maintaining motivation in digital contexts (Panagiotidis et al., 2023; "Factors Influencing Learner's Motivation in Mobile Learning Environment: An Empirical Study on University EFL Learners", 2023).

Self-Determination Theory (SDT) offers a valuable framework for understanding motivation in EFL learning, particularly regarding the needs for autonomy, relatedness, and competence. According to SDT, fulfilling these psychological needs is crucial for fostering intrinsic motivation (Thohir, 2017). In gamified learning environments, autonomy can be supported by allowing learners to make choices about their learning paths, such as selecting tasks or challenges that align with their interests (Thohir, 2017). Relatedness can be enhanced through

collaborative gamified activities that promote social interaction among learners, fostering a sense of community and support (Panagiotidis et al., 2023). Lastly, competence is addressed through the provision of immediate feedback and achievable challenges, which help learners feel a sense of progress and mastery in their language skills (Thohir, 2017). Studies have shown that when these needs are met, learners are more likely to engage deeply with the material and persist in their language learning efforts (Thohir, 2017).

The role of motivation in language learning, especially in digital environments, has been extensively studied. Research consistently highlights that motivation is a key predictor of success in EFL learning (Suryasa et al., 2017). For instance, a study found that both intrinsic and extrinsic motivations positively correlate with learning outcomes in blended learning environments, with intrinsic motivation being particularly influential (Peng, 2021). Furthermore, digital tools and gamification strategies have been shown to enhance learners' motivation by making the learning process more engaging and enjoyable (Noori, 2023; Yusny, 2013). The integration of technology in language learning not only facilitates access to resources but also allows for personalized learning experiences that cater to individual preferences and learning styles (Panagiotidis et al., 2023; "Factors Influencing Learner's Motivation in Mobile Learning Environment: An Empirical Study on University EFL Learners", 2023). However, challenges such as the digital divide and varying levels of digital literacy can impact motivation, underscoring the need for educators to create inclusive and supportive learning environments (Ramli et al., 2023). Overall, fostering motivation through gamification and digital tools is essential for effective EFL learning in the contemporary educational landscape.

Knowledge retention in language learning is a crucial aspect that refers to the ability of learners to maintain and recall information over time. In the context of English as a Foreign Language (EFL), retention encompasses not only vocabulary and grammar but also the application of language skills in various contexts. Effective retention is essential for language acquisition, as it enables learners to use the language fluently and accurately in real-life situations Nieto-Escámez & Roldán-Tapia (2021). The concept of knowledge retention is closely linked to cognitive processes, where understanding and meaningful engagement with the material significantly enhance the likelihood of retaining information (Ouanes, 2024).

Several factors influence knowledge retention in EFL learning, including cognitive, emotional, and social dimensions. Cognitive factors involve the mental processes that learners engage in while acquiring new language skills, such as attention, encoding, and retrieval (Galen et al., 2020). Emotional factors, such as motivation and anxiety, can significantly impact a learner's ability to retain information; for instance, high levels of anxiety may hinder performance and retention, while positive emotions can enhance engagement and memory (Khatoon, 2023). Social factors also play a role, as collaborative learning environments can foster peer support and interaction, which are beneficial for retention (Putz & Treiblmaier, 2019). Research indicates that learners who engage in social interactions while learning a language tend to have better retention rates due to the reinforcement of concepts through discussion and practice (Jutin, 2024).

Gamification has emerged as a powerful tool to improve knowledge retention in language learning by integrating game design elements into educational contexts. Studies have shown that gamified learning environments can enhance engagement and motivation, leading to improved retention of language skills (Hersi, 2024). For example, gamified platforms like Duolingo utilize points, badges, and leaderboards to create a competitive yet supportive atmosphere that encourages learners to practice regularly, thereby reinforcing their knowledge (Shortt et al., 2021). Research indicates that gamification can lead to a significant increase in retention rates, with some studies reporting improvements of up to 50% in knowledge retention when gamified elements are effectively implemented (Jutin, 2024). Furthermore, gamification can provide immediate

feedback, which is crucial for reinforcing learning and aiding memory consolidation (Tzamaras et al., 2021).

In conclusion, knowledge retention is a vital component of language learning, influenced by cognitive, emotional, and social factors. Gamification serves as an effective strategy to enhance retention by creating engaging and interactive learning experiences. By leveraging digital tools and gamified platforms, educators can foster an environment that not only improves retention rates but also enhances overall language proficiency among EFL learners.

The relationship between motivation and retention in English as a Foreign Language (EFL) learning is a critical area of study that highlights how increased motivation can significantly enhance students' ability to retain knowledge. Motivation, both intrinsic and extrinsic, plays a pivotal role in the learning process, influencing how learners engage with material and their overall persistence in language acquisition. Research indicates that motivated learners are more likely to engage in effective study practices, leading to better retention of language skills and vocabulary (Nieto-Escámez & Roldán-Tapia, 2021) (Putz & Treiblmaier, 2019). For instance, when students are motivated by gamified elements such as rewards and competition, they tend to invest more effort into their learning, which directly correlates with improved retention rates (Rohmah, 2022).

Previous studies examining the relationship between gamification, motivation, and retention in EFL contexts have yielded promising results. For example, research by Yaşar et al. demonstrated that gamification positively impacts academic achievement and motivation, suggesting that the competitive aspects of gamified learning environments can enhance both engagement and retention (Yaşar et al., 2020). Similarly, Rohmah's study highlighted that age-appropriate gamification strategies significantly boost motivation among students, which in turn leads to improved knowledge retention (Rohmah, 2022). Furthermore, studies have shown that gamified learning experiences foster a sense of enjoyment and positive emotions, which are closely linked to intrinsic motivation and can enhance retention (Nieto-Escámez & Roldán-Tapia, 2021). These findings underscore the potential of gamification as a tool for creating engaging learning experiences that promote both motivation and retention.

Despite the promising insights from existing literature, there are notable research gaps that warrant further investigation. Many studies have focused primarily on the immediate effects of gamification on motivation and retention, often neglecting long-term retention outcomes and the sustainability of motivation over time (Putz & Treiblmaier, 2019). Additionally, while the majority of research has concentrated on specific gamification elements, there is a need for comprehensive studies that explore the interplay between various gamification strategies and different types of motivation in diverse EFL contexts (Alenezi, 2023). Furthermore, the impact of individual differences, such as learners' prior knowledge and learning styles, on the effectiveness of gamification in enhancing motivation and retention remains underexplored (Alenezi, 2023). Addressing these gaps could provide valuable insights into optimizing gamification strategies for EFL learning and improving educational outcomes.

Qualitative approaches in educational research are essential for exploring students' experiences and perceptions, particularly regarding gamification in language learning contexts. Qualitative research emphasizes understanding the subjective experiences of individuals, allowing researchers to gain insights into how students perceive and engage with gamified learning environments. This approach is particularly relevant in EFL studies, where understanding the nuances of student motivation, engagement, and retention can inform effective teaching practices (Silva et al., 2022). Qualitative methods, such as interviews, focus groups, and observations, enable researchers to capture rich, detailed data that reflect the complexities of learners' experiences and the contextual factors influencing their learning (Mattar & Ramos, 2022).

Several previous qualitative studies have examined the application of gamification in EFL learning, providing valuable insights into its impact on student motivation and retention. For instance, Burhanuddin's research highlighted the psychological factors influencing EFL students' engagement in speaking activities, emphasizing the role of motivation in language learning outcomes (Burhanuddin, 2023). Additionally, studies have explored how gamified elements, such as competition and rewards, affect students' perceptions of learning and their willingness to participate actively in language activities (Moybeka, 2023). These qualitative investigations have demonstrated that gamification can foster a sense of community among learners, enhance motivation, and ultimately improve retention rates (Manurung, 2023).

The relevance of a qualitative approach for this research lies in its ability to provide an in-depth understanding of student motivation and retention in the context of gamification. By employing qualitative methods, this research can capture the diverse perspectives of EFL learners regarding their experiences with gamified learning environments. This approach allows for a nuanced exploration of how gamification influences not only motivation but also the emotional and social dimensions of learning, which are critical for knowledge retention (Rohmah et al., 2018). Furthermore, qualitative research can uncover the specific elements of gamification that resonate most with students, offering insights that can inform the design of more effective gamified learning experiences (Aminah & Syamsuri, 2022). Ultimately, a qualitative approach is essential for understanding the complexities of student engagement in EFL learning, particularly in the context of rapidly evolving digital technologies.

Methodology

The qualitative approach employed in this research is particularly suited for exploring student motivation and retention in gamification-based English as a Foreign Language (EFL) learning. This approach allows for an in-depth understanding of the subjective experiences and perceptions of students, which quantitative methods may overlook. Qualitative research emphasizes the importance of context and meaning, enabling researchers to capture the complexities of student engagement in gamified environments (Adlini et al., 2022). The use of semi-structured interviews facilitates a flexible dialogue, allowing participants to express their thoughts and feelings regarding gamification, motivation, and retention in a nuanced manner (Sutton & Austin, 2015). This aligns with findings that highlight the effectiveness of qualitative methods in educational research, particularly in understanding the dynamics of learner engagement (Suryatama, 2023).

The case study design chosen for this research is instrumental in providing a comprehensive understanding of the phenomenon of gamification in digital EFL classes. By focusing on a specific context, the case study allows for an exploration of the unique interactions and experiences of students within a gamified learning environment (Helvich et al., 2023). This method is particularly relevant as it enables the researcher to delve deeply into the specificities of gamification strategies employed in EFL settings, thereby illuminating how these strategies influence student motivation and retention (Mohamed, 2023). Furthermore, case studies have been shown to be effective in educational research, as they provide rich, contextualized insights that can inform practice and policy (Irzawati, 2023).

Location and Research Subjects

The research is conducted at a university that has integrated gamification into its EFL curriculum. This setting is ideal as it provides a rich environment for observing the effects of gamification on student engagement and learning outcomes. The university employs various gamification elements, such as points systems, leaderboards, and badges, which have been shown to enhance student motivation and participation (Zhang & Hasim, 2023; Govindarajan, 2021).

The selection criteria for research subjects include EFL students who are actively engaged in gamification-based digital classes. This focus ensures that the participants have relevant experiences and insights into the gamified learning process. The study aims to include 15-20 students, which is a manageable number that allows for in-depth qualitative analysis while still providing a diverse range of perspectives (Suryatama, 2023). Participants will be selected based on their language proficiency levels, age, and familiarity with technology, ensuring a representative sample that reflects the broader student population (Mila & Mahbub, 2022; Su et al., 2021).

Data Collection Techniques

Data collection will involve multiple qualitative techniques to ensure a comprehensive understanding of student experiences. Semi-structured interviews will be conducted to gather detailed insights into students' views, experiences, and perceptions regarding gamification, motivation, and retention in EFL learning. This method allows for flexibility and depth, enabling participants to share their thoughts in their own words, which is crucial for understanding complex phenomena like motivation (Pertiwi, 2022).

Participant observation will also be utilized during digital learning sessions that incorporate gamification. This technique allows the researcher to witness firsthand students' interactions with gamification elements and their responses in real-time, providing valuable context to the interview data (Su et al., 2021). Additionally, documentation will be collected in the form of screenshots and notes of student activity on digital learning platforms. This data will support the analysis of student motivation and retention by providing concrete examples of engagement with gamified elements (Purnawan et al., 2022; Calvo-Ferrer, 2015).

In summary, the combination of qualitative approaches, case study design, and diverse data collection techniques will provide a robust framework for understanding the impact of gamification on student motivation and retention in EFL learning.

Results and Discussion

The Impact of Gamification on Student Motivation in EFL Contexts

The analysis of motivation levels among students engaged in gamified English as a Foreign Language (EFL) learning environments, as shown in Figure 1:



Figure 1: The Impact of Gamification on Student Motivation in EFL Contexts

It reveals a pronounced positive impact. The data indicate that a substantial majority of the students (approximately 70) reported being "Highly Motivated" in the gamified environment. This group constitutes the largest proportion, followed by a significant number of students (around 30) who classified their level of motivation as "Moderately Motivated." Only a minor portion of the sample expressed "Low Motivation," and an even smaller fraction indicated "No Motivation" when engaging with gamified elements in their learning process.

These findings underscore the role of gamification in fostering higher levels of engagement and motivation among students, aligning with previous research on gamification's effectiveness in educational settings (Hürsen & Bas, 2019; Mohammed & Özdamli, 2021). In the context of EFL, motivation is crucial, as it determines the extent to which students invest effort and sustain their learning over time (Zhang & Hasim, 2023). The significant percentage of students who reported high motivation levels suggests that gamification—through elements such as rewards, immediate feedback, and competitive mechanics like leaderboards—can transform traditional, passive learning experiences into dynamic, interactive ones that sustain student interest.

The heightened motivation can be attributed to both intrinsic and extrinsic factors. Intrinsically, students may find pleasure and satisfaction in achieving progress, earning badges, and completing tasks, which align with Self-Determination Theory's constructs of autonomy, competence, and relatedness (Deci & Ryan, 2000). The competitive nature of certain gamified elements, such as leaderboards, may also provide extrinsic motivation by creating a sense of accomplishment and recognition among peers. This combination of intrinsic and extrinsic motivators fosters a positive learning environment where students are more likely to invest effort and stay engaged with the content.

However, while most students experienced heightened motivation, it is essential to note the minority who reported low or no motivation. For some students, gamified elements may create pressure rather than encouragement, especially in contexts where performance is publicly displayed. This observation is consistent with studies highlighting that leaderboards and competition can sometimes induce stress or anxiety, thereby negatively impacting engagement (Putz & Treiblmaier, 2019). These findings indicate that while gamification generally enhances motivation, educators need to be mindful of individual differences in student responses to ensure that gamified environments remain supportive and inclusive.

The Influence of Gamification on Knowledge Retention

The analysis of gamification's effect on knowledge retention, illustrated in Figure 2,



Figure 2: The Influence of Gamification on Knowledge Retention

It provides valuable insights into its role in supporting long-term learning outcomes in EFL contexts. The data reveal that a majority of students perceived gamification as highly beneficial for retention, with approximately 60 students indicating that it "Greatly Helped" in retaining language skills and content learned. Another substantial group of around 30 students reported that gamification "Somewhat Helped" in knowledge retention. A smaller number of students found that gamification did not contribute significantly to retention, and only a minimal portion felt that it "Hindered Retention."

These findings align with cognitive theories on learning and memory, which suggest that repeated engagement, immediate feedback, and varied practice are essential for retention

(Roediger & Butler, 2011). Gamified environments are structured to encourage frequent interaction with the material, often through challenges, quizzes, and other activities that require learners to actively retrieve and apply language knowledge. Such repeated engagement reinforces neural pathways, making it easier for learners to recall and use the language effectively over time. Furthermore, immediate feedback, a common feature in gamified systems, allows learners to identify and correct errors, facilitating the encoding of accurate information into long-term memory (Nieto-Escámez & Roldán-Tapia, 2021).

The positive impact on knowledge retention observed in this study also reflects the potential of gamification to enhance cognitive engagement by making learning enjoyable and purposeful. When students perceive learning as enjoyable and rewarding, they are more likely to participate actively and persistently, which reinforces retention (Mohammed & Özdamlı, 2021). In the context of EFL, where language acquisition requires consistent practice, gamified platforms can serve as effective tools to maintain students' engagement with the material, thus preventing language attrition and supporting long-term mastery.

However, it is noteworthy that some students reported minimal or negative impacts on retention. This divergence may be due to several factors, such as individual differences in learning preferences, cognitive styles, and responses to gamified elements. For instance, students who are less motivated by competitive aspects or those who experience cognitive overload from excessive gamification elements might find it harder to focus on the core language material, thereby experiencing lower retention rates. Additionally, the potential for distraction in highly gamified environments—where students might focus on achieving game-based rewards rather than understanding the content deeply—could account for the mixed impact on retention.

Discussion of Supporting and Limiting Factors

The findings presented above highlight the dual role of gamification in EFL learning, acting as both a motivator and a tool for enhancing retention, but also introducing certain challenges. The positive effects are largely attributed to gamification's capacity to create an engaging, interactive learning environment that supports students' intrinsic and extrinsic motivation. Elements like points, badges, and leaderboards provide immediate feedback and a sense of accomplishment, fostering a learning experience that aligns well with the principles of Self-Determination Theory (Deci & Ryan, 2000).

Despite these advantages, the study also identifies several limitations and challenges associated with gamification in EFL learning. One significant challenge is the variability in student responses to gamified elements. While many students are motivated by competition and rewards, others may feel pressured or overwhelmed, particularly in environments that heavily emphasize leaderboards and comparative performance metrics (Putz & Treiblmaier, 2019). This indicates a need for educators to adopt a flexible approach to gamification, balancing competitive elements with supportive features that encourage collaboration and individual progress. Additionally, ensuring that gamification elements are age-appropriate and align with students' cultural and educational backgrounds may further enhance their effectiveness.

Another potential limitation is the reliance on technology, which can vary significantly across different educational settings. In contexts where students have limited access to digital tools, the full potential of gamified learning may not be realized. Furthermore, technological disruptions or limitations in the gamified platform's design might hinder some students' ability to engage consistently, thereby impacting both motivation and retention. Addressing these limitations requires thoughtful implementation of gamified elements, ensuring that they are accessible, user-friendly, and adaptable to different learning environments.

Conclusion

The role of gamification in enhancing motivation and retention among students in digital EFL classrooms, providing insights into the effectiveness of game-based elements in fostering language learning engagement. The findings reveal that gamification has a significant positive impact on both motivation and knowledge retention. The integration of game elements such as points, badges, leaderboards, and immediate feedback has proven to create a dynamic and interactive learning environment that engages students actively and encourages persistence. These elements tap into both intrinsic and extrinsic motivational drivers, aligning with Self-Determination Theory's principles of autonomy, competence, and relatedness. Students are motivated not only by external rewards but also by the intrinsic satisfaction derived from personal achievement and mastery of the language. The data indicate that a majority of students experience heightened motivation in gamified learning environments, underscoring the value of gamification as a tool for increasing student engagement. This heightened motivation is crucial in EFL learning, where maintaining interest and effort over time is essential for language proficiency. Additionally, gamification enhances knowledge retention, as students are frequently encouraged to interact with the material through repeated practice and retrieval-based activities, which strengthens memory encoding and aids in long-term retention.

However, the study also identifies certain challenges and limitations in the application of gamification within EFL contexts. Not all students respond equally positively to competitive elements such as leaderboards, which can sometimes induce pressure and anxiety, detracting from the intended motivational effect. Furthermore, technological limitations and varying levels of digital accessibility among students can affect the consistency of engagement with gamified content, highlighting the need for educators to consider both the design and implementation context when integrating gamification. In summary, while gamification offers promising benefits for enhancing student motivation and retention in EFL learning, its implementation must be carefully managed to address individual differences and technological constraints. The findings support the potential of gamification as an innovative approach to language education that can make learning more engaging and effective. Future research should aim to investigate the long-term effects of gamification on motivation and retention and explore adaptive gamification strategies that can cater to diverse learner profiles and needs in EFL contexts. This ongoing exploration will further inform educators on best practices for integrating gamification to optimize learning outcomes in digital language classrooms.

References

- Adara, R. (2019). Motivational factors to learn english among university students in an urban area. *Sukma Jurnal Pendidikan*, 3(2), 187-202. <https://doi.org/10.32533/03203.2019>
- Adlini, M., Dinda, A., Yulinda, S., Chotimah, O., & Merliyana, S. (2022). Metode penelitian kualitatif studi pustaka. *Edumaspul - Jurnal Pendidikan*, 6(1), 974-980. <https://doi.org/10.33487/edumaspul.v6i1.3394>
- Afirando, R., Santoso, H., Junus, K., Putra, P., & Lawanto, O. (2023). Motivation to use gamification elements in e-learning for formal and non-formal education. *Indonesian Journal of Computer Science*, 12(1). <https://doi.org/10.33022/ijcs.v12i1.3151>
- Aini, Q. (2019). Understanding how gamification influences behaviour in education. *International Journal of Advanced Trends in Computer Science and Engineering*, 8(1.5), 269-274. <https://doi.org/10.30534/ijatcse/2019/4781.52019>

- Alenezi, A. (2023). Teacher perspectives on ai-driven gamification: impact on student motivation, engagement, and learning outcomes. *Information Technologies and Learning Tools*, 97(5), 138-148. <https://doi.org/10.33407/itlt.v97i5.5437>
- Ali, A. (2022). Effects of a gamified mall application on developing efl preparatory school students' speaking and enjoyment and reducing speaking anxiety. *Cdelt Occasional Papers in the Development of English Education*, 78(1), 241-296. <https://doi.org/10.21608/opde.2022.249943>
- Asiri "Do Teachers Attitudes, Perception of Usefulness, and Perceived Social Influences Predict their Behavioral Intentions to Use Gamification in EFL Classrooms? Evidence from the Middle East" *International Journal of Education and Practice* (2019) <https://doi.org/10.18488/journal.61.2019.73.112.122>
- Buckley, P. and Doyle, E. (2014). Gamification and student motivation. *Interactive Learning Environments*, 24(6), 1162-1175. <https://doi.org/10.1080/10494820.2014.964263>
- Burhanuddin, B. (2023). Efl higher education students' psychological factor in speaking classroom activities at universitas muslim indonesia: a research report. *Elt Worldwide Journal of English Language Teaching*, 10(1), 52. <https://doi.org/10.26858/eltww.v10i1.38370>
- Calvo-Ferrer, J. (2015). Educational games as stand-alone learning tools and their motivational effect on l2 vocabulary acquisition and perceived learning gains. *British Journal of Educational Technology*, 48(2), 264-278. <https://doi.org/10.1111/bjet.12387>
- Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01
- Díaz "Gamification as a Multimedia Methodology Strategy in the English Language Teaching Process for EFL Learners" (2023) <https://doi.org/10.5772/intechopen.109716>
- Gaalen, A., Brouwer, J., Schönrock-Adema, J., Bouwkamp-Timmer, T., Jaarsma, D., & Georgiadis, J. (2020). Gamification of health professions education: a systematic review. *Advances in Health Sciences Education*, 26(2), 683-711. <https://doi.org/10.1007/s10459-020-10000-3>
- Govindarajan, R. (2021). Exploiting gamification and interactive activities to achieve better students' engagement in elt classes. *Arab World English Journal*, (2), 238-251. <https://doi.org/10.24093/awej/mec2.17>
- Helvich, J., Novák, L., Mikoška, P., & Hubálovský, Š. (2023). A systematic review of gamification and its assessment in efl teaching. *International Journal of Computer-Assisted Language Learning and Teaching*, 13(1), 1-21. <https://doi.org/10.4018/ijcallt.322394>
- Hersi, M. (2024). Gamification-cum-motivational strategies in english language learning. *International Journal of Linguistics*, 16(3), 1. <https://doi.org/10.5296/ijl.v16i3.21797>
- Hürsen, Ç. and Bas, C. (2019). Use of gamification applications in science education. *International Journal of Emerging Technologies in Learning (Ijet)*, 14(01), 4. <https://doi.org/10.3991/ijet.v14i01.8894>
- in Learning (iJET), 14(01), 4-11. <https://doi.org/10.3991/ijet.v14i01.8894>
- Irzawati, I. (2023). Students' perceptions and attitudes towards the utilization of duolingo in efl learning. *J-Shmic Journal of English for Academic*, 10(2), 123-138. [https://doi.org/10.25299/jshmic.2023.vol10\(2\).13649](https://doi.org/10.25299/jshmic.2023.vol10(2).13649)

- Isa, W., Suhaimi, A., Noordin, N., & Hassan, S. (2022). Mobile game-based learning application about semai people. *International Journal of Academic Research in Progressive Education and Development*, 11(3). <https://doi.org/10.6007/ijarped/v11-i3/14759>
- Jutin, N. (2024). The effectiveness of gamification in teaching and learning mathematics: a systematic literature review. *International Journal of Academic Research in Progressive Education and Development*, 13(1). <https://doi.org/10.6007/ijarped/v13-i1/20703>
- Khatoon, S. (2023). Exploring the impact of gamification on language learning performance among intermediate college students: the role of motivation, engagement, and self-reliance. *Pakistan Languages and Humanities Review*, 7(II). [https://doi.org/10.47205/plhr.2023\(7-ii\)24](https://doi.org/10.47205/plhr.2023(7-ii)24)
- Limantara et al. "Designing Gamified Learning Management Systems for Higher Education" *International Journal of Information and Education Technology* (2023) <https://doi.org/10.18178/ijiet.2023.13.1.1776>
- Manurung, N. (2023). The role of leadership in forming organizational culture within the directorate general of teachers and educational personnel ministry of education, culture, research and technology. *Journal of Economics and Business Ubs*, 12(5), 3377-3385. <https://doi.org/10.52644/joeb.v12i5.672>
- Mattar, J. and Ramos, D. (2022). Paradigms and approaches in educational research. *International Journal for Innovation Education and Research*, 10(4), 250-256. <https://doi.org/10.31686/ijer.vol10.iss4.3380>
- Mila, H. and Mahbub, M. (2022). An alternative board game to promote efl learners grammatical skill. *Enjourme (English Journal of Merdeka)*, 7(1), 78-87. <https://doi.org/10.26905/enjourme.v7i1.7043>
- Mohamed, M. (2023). The effect of gamification strategy on developing some sixth grade primary schoolers' efl reading comprehension skills. 0-0), 264(23, *مجلة القراءة والمعرفة*. <https://doi.org/10.21608/mrk.2023.322171>
- Mohammed, Y. and Özdamlı, F. (2021). Motivational effects of gamification apps in education: a systematic literature review. *Brain Broad Research in Artificial Intelligence and Neuroscience*, 12(2). <https://doi.org/10.18662/brain/12.2/196>
- Moybeka, A. (2023). Artificial intelligence and english classroom: the implications of ai toward efl students' motivation. *Edumaspul - Jurnal Pendidikan*, 7(2), 2444-2454. <https://doi.org/10.33487/edumaspul.v7i2.6669>
- Nieto-Escámez and Roldán-Tapia "Gamification as Online Teaching Strategy During COVID-19: A Mini-Review" *Frontiers in Psychology* (2021) <https://doi.org/10.3389/fpsyg.2021.648552>
- Nitiasih, P., Budiarta, L., & Mahayanti, N. (2020). Gamifying balinese local story: facilitating gen z in learning english.. <https://doi.org/10.2991/assehr.k.200115.038>
- Noori, A. (2023). From boredom to excitement: unleashing motivation with kahoot in english language learning. *Erudita Journal of English Language Teaching*, 3(2), 191-203. <https://doi.org/10.28918/erudita.v3i2.1141>
- Nurtanto et al. "A Review of Gamification Impact on Student Behavioural and Learning Outcomes" *International Journal of Interactive Mobile Technologies (IJIM)* (2021) <https://doi.org/10.3991/ijim.v15i21.24381>
- Ouanes, K. (2024). Transforming medical and health sciences education with gamification.. <https://doi.org/10.5772/intechopen.1005500>

- Panagiotidis, P., Krystalli, P., & Arvanitis, P. (2023). Technology as a motivational factor in foreign language learning. *European Journal of Education*, 6(1), 69-84. <https://doi.org/10.2478/ejed-2023-0007>
- Peng, R. (2021). The effect of chinese efl students' learning motivation on learning outcomes within a blended learning environment. *Australasian Journal of Educational Technology*, 61-74. <https://doi.org/10.14742/ajet.6235>
- Pertiwi, A. (2022). Using the quizizz as an assessment of students' english learning. *Journal of English Teaching Applied Linguistics and Literatures (Jettall)*, 5(1), 37. <https://doi.org/10.20527/jettall.v5i1.10859>
- Phuong, T. (2020). Gamified learning: are vietnamese efl learners ready yet?. *International Journal of Emerging Technologies in Learning (Ijet)*, 15(24), 242. <https://doi.org/10.3991/ijet.v15i24.16667>
- Pinto, D., Peixoto, B., Melo, M., Cabral, L., & Bessa, M. (2021). Foreign language learning gamification using virtual reality—a systematic review of empirical research. *Education Sciences*, 11(5), 222. <https://doi.org/10.3390/educsci11050222>
- Pintrich, P. R. (2003). "A Motivational Science Perspective on the Role of Student Motivation in Learning and Teaching Contexts." *Journal of Educational Psychology*, 95(4), 667-686. <https://doi.org/10.1037/0022-0663.95.4.667>
- Piteira, M., Costa, C., & Aparício, M. (2017). A conceptual framework to implement gamification on online courses of computer programming learning: implementation., 1, 7022-7031. <https://doi.org/10.21125/iceri.2017.1865>
- Purnawan, N., Padmadewi, N., & Budiarta, L. (2022). The effect of online gamification quiz application on vocabulary mastery for young english learners. *Jurnal Inovasi Dan Teknologi Pembelajaran*, 9(1), 33-43. <https://doi.org/10.17977/um031v9i12022p033>
- Putz, L. and Treiblmaier, H. (2019). Findings of an experiment: knowledge retention in gamified and non-gamified workshops.. <https://doi.org/10.24251/hicss.2019.177>
- Putz, L. M., & Treiblmaier, H. (2019). Findings of an experiment: Knowledge retention in gamified and non-gamified workshops. In *Proceedings of the 52nd Hawaii International Conference on System Sciences* (pp. 177-186). <https://doi.org/10.24251/hicss.2019.177>
- Ramalingam, S., Yunus, M., & Hashim, H. (2022). Blended learning strategies for sustainable english as a second language education: a systematic review. *Sustainability*, 14(13), 8051. <https://doi.org/10.3390/su14138051>
- Ramli, R., Razali, R., & Armia, A. (2023). Qualitative study: teaching indonesian as the national language to students in the all-digital era: challenges and solutions. *International Journal for Multidisciplinary Research*, 5(3). <https://doi.org/10.36948/ijfmr.2023.v05i03.3108>
- Roediger, H. L., & Butler, A. C. (2011). The critical role of retrieval practice in long-term retention. *Trends in Cognitive Sciences*, 15(1), 20-27. <https://doi.org/10.1016/j.tics.2010.09.003>
- Rohmah, N. (2022). A vocational school cutting-edge learning strategy: examining gamification towards student engagement and achievement. *Jurnal Kependidikan Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan Pengajaran Dan Pembelajaran*, 8(3), 655. <https://doi.org/10.33394/jk.v8i3.5779>
- Rosyidah, U. (2023). Gamification in duolingo app on improving english listening proficiency of junior high school students. *English Franca Academic Journal of English Language and Education*, 7(1), 119. <https://doi.org/10.29240/ef.v7i1.5377>

- Satria, D. (2023). Elearning gamification prototype development using user centered design approach. *Jurnal Komtika (Komputasi Dan Informatika)*, 7(1), 22-30. <https://doi.org/10.31603/komtika.v7i1.8958>
- Schunk, D. H. (2003). "Self-Efficacy for Reading and Writing: Influence of Modeling, Goal Setting, and Self-Evaluation." *Reading & Writing Quarterly*, 19(2), 159-172. <https://doi.org/10.1080/10573560308219>
- Shadiev, R., Liu, T., & Hwang, W. (2019). Review of research on mobile-assisted language learning in familiar, authentic environments. *British Journal of Educational Technology*, 51(3), 709-720. <https://doi.org/10.1111/bjet.12839>
- Shavab, O., Yulifar, L., Supriatna, N., & Mulyana, A. (2021). Gamification in history learning: a literature review.. <https://doi.org/10.2991/assehr.k.210918.047>
- Shortt, M., Tilak, S., Kuznetcova, I., Martens, B., & Akinkuolie, B. (2021). Gamification in mobile-assisted language learning: a systematic review of duolingo literature from public release of 2012 to early 2020. *Computer Assisted Language Learning*, 36(3), 517-554. <https://doi.org/10.1080/09588221.2021.1933540>
- Silva, D., Júnior, F., Silva, T., & Nunes, J. (2022). The characteristics of qualitative research: a study with theses from a postgraduate program in education. *Educação Em Revista*, 38. <https://doi.org/10.1590/0102-469826895t>
- Simbaña-Simbaña "Gamification for Improving Oral Communication Skills in English as a Foreign Language Learners" *Cienciasmatría* (2023) <https://doi.org/10.35381/cm.v9i2.1176>
- Su, F., Zou, D., Xie, H., & Wang, F. (2021). A comparative review of mobile and non-mobile games for language learning. *Sage Open*, 11(4). <https://doi.org/10.1177/21582440211067247>
- Suryanto, P., Emanuel, A., & Pranowo, P. (2020). Design of dayak kanayatn language learning mobile applications using gamification. *International Journal of Engineering Pedagogy (Ijep)*, 10(4), 54. <https://doi.org/10.3991/ijep.v10i4.12899>
- Suryasa, W., Prayoga, I., & Werdistira, I. (2017). An analysis of students' motivation toward english learning as second language among students in pritchard english academy (peace). *International Journal of Social Sciences and Humanities*, 1(2), 43. <https://doi.org/10.21744/ijssh.v1i2.36>
- Suryatama, K. (2023). Unlocking the potential: exploring factors and overcoming challenges in gamifying english literacy. *Journal of English Education and Teaching*, 7(4), 862-880. <https://doi.org/10.33369/jeet.7.4.862-880>
- Sutton, J. and Austin, Z. (2015). Qualitative research: data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68(3). <https://doi.org/10.4212/cjhp.v68i3.1456>
- Tamtama et al. "Design of English Vocabulary Mobile Apps Using Gamification: An Indonesian Case Study for Kindergarten" *International Journal of Engineering Pedagogy (IJEP)* (2020) <https://doi.org/10.3991/ijep.v10i1.11551>
- Thohir, L. (2017). Motivation in a foreign language teaching and learning. *Vision Journal for Language and Foreign Language Learning*, 6(1), 20-29. <https://doi.org/10.21580/vjv6i11580>
- Tzamaras, H., Martinez, J., Brown, D., Gonzalez-Vargas, J., Moore, J., & Miller, S. (2021). Fun and games: designing a gamified central venous catheterization training simulator. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65(1), 267-271. <https://doi.org/10.1177/1071181321651108>

Wangi et al. "Application of Gamification-Based Online Learning on Student Learning Outcomes During the Covid-19 Pandemic" *International Journal of Research and Review* (2022) <https://doi.org/10.52403/ijrr.20221172>

Woodcock, J. and Johnson, M. (2017). Gamification: what it is, and how to fight it. *The Sociological Review*, 66(3), 542-558. <https://doi.org/10.1177/0038026117728620>

Yaşar, H., Kılıcı, M., & Karatas, A. (2020). The views and adoption levels of primary school teachers on gamification, problems and possible solutions. *Participatory Educational Research*, 7(3), 265-279. <https://doi.org/10.17275/per.20.46.7.3>

Yusny, R. (2013). The influence of digital games based learning on students' learning outcomes and motivation. *Register Journal*, 6(2), 77. <https://doi.org/10.18326/rgt.v6i2.238>

Zhang and Hasim "Gamification in EFL/ESL Instruction: A Systematic Review of Empirical Research" *Frontiers in Psychology* (2023) <https://doi.org/10.3389/fpsyg.2022.1030790>

Zvarych, I. (2019). Gamification as a tool for stimulating the educational activity of students of higher educational institutions of ukraine and the united states. *European Journal of Educational Research*, volume-8-2019(volume8-issue3.html), 875-891. <https://doi.org/10.12973/eu-jer.8.3.875>