Teaching through Gamification Influences Learners' Motivation, Engagement, And Self Reliance: Evidence from The ESL Classroom

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Abstract

This study investigated how the teaching of the English language through gamification can impact the motivation, engagement, and self-reliance of English as a Second Language (ESL) learners, affective dimensions crucial for language acquisition**.** The research employed a quantitative approach, using a comprehensive questionnaire to survey 218 undergraduate engineering students (202 males and 16 females) at a public sector university in Karachi, Pakistan. Descriptive statistics and regression analysis were employed to investigate the relationships between gamification elements and the motivation, engagement, and autonomy of English as a Second Language (ESL) learners. The Study found a positive correlation between gamification strategies and increased motivation, engagement, and self-reliance among learners. Students exposed to gamification techniques consistently demonstrated higher motivation and autonomy in their language learning experiences. The Study is limited to a single university setting, which may affect the generalizability of the results. Future research should consider expanding the Study to varied educational contexts to further validate these findings**.** The insights gained underscore the potential of gamification to foster a more dynamic and motivating ESL learning environment. Educators can leverage these strategies to enhance student engagement and promote self-directed learning

Keywords: *Gamification, motivation, engagement, self-reliance, ESL learners*

This research adds to the growing body of literature on gamification in education, highlighting its effectiveness as a pedagogical tool, particularly within the context of ESL instruction in Pakistan

Introduction

The The concept of "gamification," introduced by Deterding et al. (2011), involves applying elements commonly found in game design to non-game environments to enhance engagement and motivation. In education, gamification has gained popularity as a method to encourage active learning, increase student participation, and address issues related to low motivation (Kapp, 2012; Landers, 2014) ; Emam, S. (2020) . Supporters of this approach suggest that incorporating game-like features into classroom settings or digital learning platforms can improve educational

outcomes by enhancing student motivation and engagement (Landers, 2014).

Gamification has garnered significant attention in educational research as a means to address challenges in learner motivation, engagement, and autonomy. Researchers such as Bellotti et al. (2013), Buckley and Doyle (2016), Landers (2014), and Novak et al. (2016) have explored the potential of gamification to enhance

educational experiences, particularly by creating dynamic environments where learners navigate challenges while enjoying a sense of progress and achievement. Video games, with their carefully designed mechanics, narratives, and feedback systems, have inspired the development of gamified learning environments that replicate these engaging elements.

While the application of gaming principles in education can be traced back to the latter half of the twentieth century (Deterding et al., 2011; Wolfe & Crookall, 1998), the use of games for serious educational purposes spans much further into history, reflecting a long-standing interest in the motivational power of games (Wolfe & Crookall, 1998). Malone (1980) identified challenge, fantasy, and curiosity as three key features of video games that make them particularly engaging. By leveraging these features, educators can transform traditional learning environments, addressing persistent issues such as low student motivation and engagement, particularly in English as a Second Language (ESL) contexts where learners often face additional linguistic and cultural barriers.

In ESL classrooms, where motivation, engagement, and learner autonomy are essential for effective language acquisition, gamification offers a promising solution. Traditional instructional approaches may not fully address these affective dimensions, resulting in suboptimal learning outcomes (Kapp, 2012). This Study investigates the potential of gamification to improve ESL learning experiences by examining its impact on learners' motivation, engagement, and self-reliance. Therefore, the Study attempts to add to the existing literature regarding the role of gamification in ESL education, particularly within higher education contexts in Pakistan. By exploring these aspects, this Study seeks to provide empirical insights into the efficacy of gamification as a tool for enhancing affective dimensions of language learning, thereby offering valuable guidance for educators aiming to improve student engagement and autonomous learning. The results will benefit not only ESL instructors but also inform curriculum developers and policymakers who consider gamification as a means to enrich language learning. While previous studies have explored gamification in general educational contexts, there is a clear need for more focused research on its specific applications in teaching English as a second language, particularly in developing countries like Pakistan (Buckley & Doyle, 2016), where the 17 Sustainable Development Goals (SDGs) by the United Nations call for an urgent action (UN, 2015) and education being as one of the most prioritized SDG.

This Study's conceptual framework centers on the role of gamification as a pedagogical tool in enhancing three key affective dimensions in ESL learning: motivation, engagement, and autonomy. Drawing on self-determination theory, which emphasizes the importance of intrinsic motivation for effective learning, this Study posits that gamification can fulfill basic psychological needs for competence, autonomy, and relatedness (Deci & Ryan, 1985). The framework conceptualizes motivation as the learner's drive to engage with language tasks, engagement as the level of active participation and effort invested, and autonomy as the learner's ability to independently navigate their learning process (Deci & Ryan, 1985). By grounding the Study in these constructs, the framework provides a basis for understanding how gamification can address key challenges in ESL instruction and contribute to more effective language acquisition outcomes.

In recent years, gamification has garnered significant attention as a pedagogical strategy in English as a Foreign Language (EFL) education, particularly in Pakistani English as a Second Language (ESL) and English as a Foreign Language (EFL) contexts. Traditional teaching methods in Pakistan often struggle to engage students effectively, leading to low motivation and high dropout rates. Studies, such as those by Raza, Zafar, and Iqbal (2023), suggest that integrating game elements—like points, badges, and leaderboards—into educational settings can transform classrooms into interactive and engaging environments. Ahmed and Hussain (2022) emphasize that tailoring gamification strategies to local needs can help students overcome challenges in language acquisition, especially in contexts where English is rarely spoken outside academic settings.

Research highlights the effectiveness of gamification in boosting student motivation and engagement in EFL classrooms. Alam and Shahid (2023) conducted a study on secondary school students in Lahore, revealing that those involved in a gamified English learning program demonstrated higher engagement levels than traditional methods. Similarly, Ali and Abbas (2023) found that a gamified reading comprehension app significantly improved reading motivation and comprehension among Pakistani English as a Foreign Language (EFL) learners.

Internationally, Flores (2015) supports the notion that gamification enhances participation and motivation in second language learning, with game elements such as leaderboards and immediate feedback fostering student

enthusiasm. Hanus and Fox (2015) conducted a longitudinal study in the United States, showing that gamified classrooms enhanced motivation and encouraged sustained academic effort and social interaction. Kiryakova, Angelova, and Yordanova (2014) observed similar results in Europe, where they found that gamification improved retention and participation in university-level language courses.

Beyond engagement, gamification has been shown to support self-reliance and autonomous learning, which are critical in Pakistan's teacher-centered educational landscape. Research by Sadiq and Iqbal (2023) found that Pakistani students in gamified environments were more inclined to set personal learning goals and work independently, fostering self-regulated learning. This shift is particularly beneficial in large classrooms with limited resources, where providing personalized instruction can be challenging.

Globally, gamification has demonstrated its role in fostering learner autonomy. Hwang and Chang (2021) examined gamified vocabulary learning among Taiwanese English as a Foreign Language (EFL) students, finding that gamification tools empowered learners to manage their progress. Similarly, Yildirim and Sahan (2022) observed that gamification encouraged Turkish EFL students to take the initiative in their speaking tasks, thereby reducing their reliance on teacher intervention.

Gamification's adaptability to various learner needs is particularly relevant in Pakistan, where English as a Foreign Language (EFL) classrooms often include students with varying levels of proficiency. Malik and Ahmed (2023); Al-Sabbagh, A. (2023) investigated adaptive gamification techniques that adjust game difficulty and offer tailored feedback based on individual performance. Their Study showed significant improvements in motivation and retention, suggesting that adaptive gamification can bridge proficiency gaps in heterogeneous classrooms.

International research corroborates these findings. Landers and Landers (2015) found that adaptive gamification techniques, such as personalized feedback and customizable difficulty levels, increased engagement and academic performance in diverse classroom settings. These strategies are particularly valuable in addressing the unique challenges second language learners face.

Gamification has also been shown to reduce language learning anxiety, a common issue in Pakistani classrooms where students often hesitate to participate due to fear of making mistakes. Shah and Rehman (2022) found that game elements, such as collaborative tasks, feedback, and rewards, help create a supportive learning environment. Tariq and Usman (2023) reported that a gamified speaking course increased participants' willingness to engage in oral activities and reduced their anxiety, highlighting the potential of gamification to create a safe space for language practice.

Similar outcomes have been reported globally. Yildirim and Sahan (2022) observed that gamification reduced language learning anxiety in Turkish EFL classrooms, while Hwang and Chang (2021) noted that Taiwanese students using gamified vocabulary tools felt more confident in their learning, leading to greater willingness to take risks and participate.

Digital gamification tools hold promises for rural Pakistani schools, where resources are scarce, and there is limited English exposure. Yousaf and Akhtar (2023) ; darwesh, D., & fayed, S. (2024)suggest that even low-tech gamification strategies, such as classroom-based games and reward systems, can significantly boost motivation and participation. An experimental study by Mehmood and Ali (2023) in rural Sindh implemented a gamified vocabulary program with physical rewards, which resulted in increased vocabulary retention and student engagement. This demonstrates that cost-effective gamification methods can have a significant impact on resource-constrained environments.

Globally, researchers such as Flores (2015) emphasize the importance of designing gamification strategies that account for resource limitations, advocating for impactful yet straightforward game elements that maximize learner motivation and engagement.

Despite its benefits, the success of gamification in Pakistani EFL contexts depends on careful design and implementation. Waseem and Khan (2021) emphasize the importance of balancing extrinsic rewards (such as points and badges) with intrinsic motivators (like mastery and personal growth) to ensure long-term engagement. This balance is especially critical in Pakistan, where the education system heavily relies on rote learning and extrinsic rewards, yet fostering intrinsic motivation is crucial for sustainable language development.

Hanus and Fox (2015) similarly emphasize the importance of aligning gamification elements with learners' intrinsic goals to prevent overreliance on external rewards, which can undermine long-term motivation.

In summary, current research suggests that gamification can effectively enhance motivation, engagement, and self-reliance among Pakistani English as a Foreign Language (EFL) learners. These findings align with global studies showing that gamification fosters interactive and
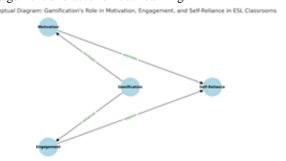
supportive learning environments. Its flexibility in meeting diverse learning needs, reducing anxiety, and adapting to resource-limited contexts makes it a valuable tool for educators. However, the effectiveness of gamification hinges on the thoughtful integration of game elements that cater to intrinsic and extrinsic motivators. Future research should focus on refining gamification strategies to address the specific challenges faced by Pakistani English as a Foreign Language (EFL) learners and explore the long-term impact of gamification on language proficiency and academic achievement.

In ESL classrooms, where motivation, engagement, and learner autonomy are essential for effective language acquisition, gamification offers a promising solution. Traditional instructional approaches may not fully address these affective dimensions, resulting in suboptimal learning outcomes (Kapp, 2012). This Study investigates the potential of gamification to improve ESL learning experiences by examining its impact on learners' motivation, engagement, and self-reliance. Accordingly, the following research questions guide this Study:

RQ1: How does gamification influence ESL learners' motivation to learn language within language classes?

RQ2: How does gamification impact ESL learners' engagement in language learning within language classes?

RQ3: In what ways does gamification affect ESL learners' self-reliance (autonomy) in language learning within language classes?

These questions aim to fill a gap in the literature regarding the role of gamification in English as a Second Language (ESL) education, particularly within higher education contexts in Pakistan. By exploring these aspects, this Study seeks to provide empirical insights into the efficacy of gamification as a tool for enhancing critical affective dimensions of language learning, thereby offering valuable guidance for educators aiming to improve student engagement and autonomous learning.

Grounded in self-determination theory (Deci & Ryan, 1985), this Study posits that gamification can enhance ESL learners' motivation, engagement, and autonomy by fulfilling their psychological needs for competence, autonomy, and relatedness.

Quizizz application:

Quizizz is a widely accessible, user-friendly digital platform designed to enhance English language teaching and learning (Lim & Yonus, 2021; Degirmenci, 2021). Known for its versatility, it offers a vast library of customizable quizzes, allowing educators to tailor content for English as a Second Language (ESL) classrooms, aligning with specific language objectives and proficiency levels (Lim & Yonus, 2021). This flexibility empowers teachers to seamlessly integrate it into lessons, creating an engaging and interactive context for language acquisition (Gursoy & Goksun, 2019; Mohamad, 2020).

Quizizz's gamified features, including competitive play and game-like experiences, help foster student motivation and engagement. Mohamad (2020) notes that the platform enables learners to interact with vocabulary and grammar while competing, enhancing both intrinsic and extrinsic motivation (Razali et al., 2020; Degirmenci, 2021). Quizizz also provides immediate feedback and progress tracking, which reinforce a sense of accomplishment and support autonomous learning behaviors (Ahmed, 2016; Suryaman et al., 2020; Priyanti et al., 2020).

As a tool for targeted language skill development, Quizizz has been shown to improve vocabulary acquisition and reading comprehension by enabling dynamic, contextual learning (Icin & Orta, 2018; Zukriyah & Pratolo, 2020). This Study examines Quizizz's role in promoting motivation, engagement, and self-reliance among Pakistani ESL students, providing insights into its broader potential for gamification in language education

METHODOLOGY

This study employs a quantitative, survey-based cross-sectional design to assess the impact of gamification on motivation, engagement, and self-reliance among first-year mechanical engineering students enrolled in a Functional English course. After the Quizizz intervention, data were collected through a structured questionnaire administered to the entire cohort of 218 ESL students across all course sections.

Instrumentation

The data collection instrument was a questionnaire adapted from Alswaeir (2018) and Khatoon (2023), designed to measure students' motivation, engagement, and self-reliance following their experience with gamification. Alswaeir's (2018) work informed the gamification aspects, while Khatoon's (2023) framework, based on Huang and Liang (2018), provided cultural

relevance for ESL learners in Pakistan, aligning the items with the Study's language learning objectives.

Gamification Intervention: Quizizz Mastery Peak Model

The intervention employed Quizizz's Mastery Peak model, which combines game-based learning with spaced repetition. In this interactive mode, students answer questions to "climb a mountain" in real time, reattempting questions they answered incorrectly to reinforce their understanding. Through a series of mini-games, obstacles, and power-ups, students practiced vocabulary and listening skills, with the live dashboard displaying real-time progress and leaderboard positions. Observations of students' enjoyment and excitement as they engaged with the leaderboard provided additional insights into how gamification fosters motivation and engagement.

Sampling and Participants

Total population sampling was used, including all 218 first-year mechanical engineering students enrolled in the Functional English course. This comprehensive approach provides generalizable insights into the effects of gamification on motivation, engagement, and self-reliance within this specific educational context.

Data Collection Procedure

Data collection involved a two-part process:

Students participated in Quizizz's Mastery Peak mode, focusing on vocabulary and listening skills.

They completed a questionnaire on motivation, engagement, and self-reliance after the activity. The Mastery Peak mode facilitated a collaborative experience with competitive and supportive game elements that aimed to foster motivation and engagement throughout the language learning activity.

Data Analysis

This Study used descriptive statistics, Pearson correlation, and regression analysis to assess the impact of gamification on motivation, engagement, and self-reliance:

Descriptive statistics, including calculated means, minimums, maximums, and standard deviations, provided an overview of the data distribution. Motivation, engagement, and self-reliance showed similar mean scores, with self-reliance exhibiting higher variability (see Table 3).

Pearson Correlation: Significant positive correlations were found between gamification and each variable, with motivation showing the strongest correlation ($r = 0.675$), followed by engagement and self-reliance, indicating that gamification enhances these aspects of language learning (see Table 4).

Regression Analysis: The results of the regression analysis showed that gamification significantly predicts motivation, engagement, and self-reliance (all p-values < 0.001). Motivation was most affected ($F = 180.721$), followed by engagement and self-reliance (see Table 5).

Result Analysis and Discussion:

This Study utilized total population sampling, collecting data from 218 first-year engineering students (202 males, 16 females) enrolled in a Functional English course at a public university in Karachi, Pakistan. The predominantly male and young sample may limit generalizability, suggesting future research should consider more diverse demographics.

Table 1: Demographic Profile of Participants

Demographic	Frequency (N = 218)	Percentage (%)
Gender		
Male	202	92.7
Female	16	7.3
Age		
18-20 years	188	86.2
20-22 years	27	12.4
22-25 years	3	1.4

While the sample represents a homogenous group within a specific context, the limited diversity in gender and age could constrain the generalizability of the findings. Future research should consider including a more diverse sample to examine how gamification impacts ESL learners across different demographics

Quizizz Mastery Peak Mode

The Quizizz Mastery Peak mode, incorporating game-based features such as virtual mountain climbing, power-ups, and real-time feedback, was employed as the gamification intervention. While the interactive nature of Quizizz engages students, its competitive format may benefit some learners while potentially causing anxiety in others.

Table 2: Summary of Quizizz Mastery Peak Mode

Gamified Feature	Description
Mastery Peak Mode	Students climb a virtual mountain, answering previously incorrect questions to reach accuracy objectives.
Power-Ups	Students can use in-game tools to overcome challenges or receive assistance.
Real-Time Dashboard	Teachers track students' progress and leaderboard standings.
Feedback Mechanisms	Students receive instant feedback on their performance.

The use of Quizizz adds an interactive element to the Study, aligning with the research focus on gamification. However, the potential novelty effect could inflate the

observed motivation and engagement levels, as students may be more excited by the new tool than by the learning content itself. Additionally, the competitive nature of the platform may not suit all learning styles, potentially leading to anxiety or disengagement in some students.

Table 3: Descriptive Statistics for Motivation, Engagement, and Self-Reliance

Variable	N	Min	Max	Mean	Std. Deviation
Motivation	218	1.00	3.60	1.34	0.47
Engagement	218	1.00	3.00	1.32	0.45
Self-Reliance	218	1.00	4.00	1.37	0.57
Gamification	218	9.00	25.00	14.77	2.89

The mean scores for motivation, engagement, and self-reliance are relatively close to each other, suggesting a moderate impact of gamification across these variables. The standard deviations indicate some variability in responses, particularly in self-reliance, where the higher standard deviation suggests greater differences in how students perceive their independence in learning.

Table 4: Pearson Correlation Coefficients between Gamification and Dependent Variables

Variable Pair	Pearson Correlation (r)	Significance (p-value)
Gamification - Motivation	0.675	< 0.001
Gamification - Engagement	0.589	< 0.001
Gamification - Self-Reliance	0.446	< 0.001

The correlation analysis reveals a positive and statistically significant relationship between gamification and all three dependent variables. The strongest correlation is with motivation (r = 0.675), indicating that gamification has a significant impact on increasing students' motivation in the English as a Second Language (ESL) context. The relationship between self-reliance and self-reliance is weaker (r = 0.446), suggesting that while gamification positively influences self-reliance, the effect is less pronounced compared to motivation and engagement.

Table 5: Regression Analysis of Gamification on Motivation, Engagement, and Self-Reliance

Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.
Motivation	21.675	1	21.675	180.721	0.000
Engagement	15.074	1	15.074	114.849	0.000
Self-Reliance	13.992	1	13.992	53.577	0.000

The regression analysis reveals that gamification significantly predicts all three dependent variables (p < 0.001 for all). The F-values indicate that the model explaining motivation (F = 180.721) and engagement (F = 114.849) is powerful, suggesting that these factors are highly influenced by the use of gamification in the ESL classroom. The lower F-value for self-reliance (F = 53.577) suggests that while gamification contributes to fostering independence, its effect is less robust compared to its impact on motivation and engagement.

Findings and Discussion

This Study investigated the potential of gamification to enhance the performance of ESL learners, with a focus on motivation, engagement, and self-reliance. The findings revealed that gamification had a positive influence on motivation and engagement, while its impact on self-reliance was less pronounced. The discussion below is organized according to the Study's three research questions.

RQ1: How Does Gamification Influence ESL Learners' Motivation?

Motivation emerged as the strongest predictor of language learning performance. The findings align with earlier research by Kapp (2012) and Cheng et al. (2019), which emphasize that gamified elements—such as instant feedback, rewards, and challenges—significantly enhance intrinsic motivation by making learning more engaging. The current Study confirms that gamified tools, such as Quizizz, can heighten motivation among ESL learners.

Additionally, these results align with those of Li et al. (2022), who, through a meta-analysis, demonstrated that personalized gamification further enhances motivation. When learners feel that game mechanics are tailored to their individual needs, their sense of control and purpose increases. Similarly, students in this Study reported that real-time feedback and game-like features made them more eager to participate and engage in learning tasks.

RQ2: How Does Gamification Affect Student Engagement in ESL Classrooms?

Gamification also had a strong positive effect on student engagement. Consistent with Hamari et al. (2014) and Cagiltay et al. (2015), the Study found that interactive elements—such as progress bars, point systems, and engaging interfaces—encouraged sustained participation.

Students were observed to be more actively involved, both individually and in group settings. This observation aligns with Yang et al. (2022), who argue that social components, such as leaderboards and team challenges, significantly increase engagement by introducing collaborative competition. In this Study, Quizizz

contributed to creating a classroom environment that was more dynamic, interactive, and student-centered.

RQ3: What Is the Impact of Gamification on ESL Learners' Self-Reliance?

Compared to motivation and engagement, the impact of gamification on self-reliance was **weaker and more varied** in nature. Although some students felt more confident in completing tasks independently, others relied heavily on game cues and external feedback mechanisms to guide their progress.

This finding aligns with Hassan et al. (2021), who suggest that gamification may support autonomy when adaptive learning paths are provided. However, the structured and often competitive nature of gamified environments may emphasize extrinsic rewards over internal regulation, a concern highlighted by Nicholson (2015).

The results also align with those of Wu et al. (2022), who observed that while gamification enhances short-term motivation, it may not always lead to long-term independence or deep learning. As this Study primarily measured short-term effects, the sustainability of benefits related to self-reliance remains uncertain.

Sustainability and Long-Term Impact of Gamification

This Study raises important questions regarding the longevity of gamification's effects. Hanus and Fox (2015) cautioned that the novelty of gamification might diminish over time, reducing student engagement. Similarly, Mekler et al. (2017) noted that while gamified strategies initially boost participation, they may not sustain motivation unless tied to meaningful and contextually relevant content.

Future studies should adopt longitudinal designs to investigate whether the motivational and engagement benefits persist and whether students continue developing independent learning strategies over time.

Practical Implications for ESL Pedagogy

The findings offer valuable insights for ESL instructors and curriculum designers, particularly in higher education contexts such as those in Pakistan. Incorporating gamified features—such as real-time feedback, leaderboards, and reward systems—can significantly improve learner participation, intrinsic motivation, and classroom engagement.

These strategies can be instrumental in transitioning from traditional, teacher-centered instruction to more learner-centered approaches, fostering autonomy and active student involvement.

Limitations and Future Research

This Study is not without limitations. The study was conducted at a single public university, with a participant pool consisting primarily of engineering students, which limits the generalizability of the findings. Additionally, the reliance on **self-**reported data may introduce social desirability bias.

As emphasized by Sailer et al. (2021), future gamification research should incorporate objective behavioral measures to assess learner performance and engagement more accurately. Broader studies should also investigate gamification across diverse disciplines, institutions, and learner profiles to validate and extend these findings.

Furthermore, future research should investigate the use of adaptive gamification, in which game mechanics are tailored to individual learners. This personalized approach better supports the development of self-reliance and promotes long-term engagement and learning gains.

Conclusion

This Study investigated the impact of gamification on ESL learners' motivation, engagement, and self-reliance in a university-level Functional English course. The findings reveal that gamified learning environments—particularly those incorporating tools like Quizizz—positively influence students' intrinsic motivation and active classroom engagement. These effects are consistent with existing literature, which supports the motivational potential of game-based learning elements such as feedback, rewards, and competition.

However, the Study also found that gamification's influence on learner self-reliance was less pronounced. While some students demonstrated increased confidence in completing language tasks, others showed a dependency on external rewards and prompts, raising concerns about the long-term sustainability of such learning strategies. These mixed results suggest that gamification should be thoughtfully integrated and balanced with pedagogical strategies that foster autonomy and internal motivation.

The findings have significant implications for ESL educators, particularly in Pakistani higher education, where traditional teacher-centered models remain prevalent. Gamification offers a pathway to transition toward student-centered instruction, making learning more interactive, collaborative, and responsive to individual learner needs.

Future research should explore the effects of adaptive gamification tailored to diverse learners and conduct longitudinal studies to assess the lasting impact of gamified instruction on motivation, engagement, and language proficiency.

In conclusion, gamification holds significant promise as an instructional strategy in English as a Second

Language (ESL) classrooms. When implemented with pedagogical care, it can enhance learner engagement and motivation, paving the way for more dynamic and autonomous learning environments.

This study contributes to the growing body of research on gamification in language learning by providing empirical evidence on the impact of gamified instruction on motivation, engagement, and self-reliance among English as a Second Language (ESL) learners. Grounded in Self-Determination Theory and based on a large-scale quantitative analysis, the study offers localized insights from a Pakistani public-sector university, addressing an under-researched context in the gamification literature. The findings inform both educators and language practitioners about the potential of game-based platforms such as Quizizz Mastery Peak to enhance learner autonomy and motivation in English language classrooms. Furthermore, this study reinforces the applicability of SDT constructs in evaluating technology-assisted language learning

Ethical Approval Declaration

"All procedures involving human participants in this study were conducted in accordance with the ethical standards set by applicable research guidelines and the principles of the 1964 Declaration of Helsinki and its subsequent amendments. Ethical approval was secured before the commencement of data collection."

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Data availability:-
The datasets generated and analysed during the current study will be available from the author upon reasonable request.

Consent for publication:-
I hereby provide consent for the publication of the manuscript detailed above.

Competing interests:-
The authors declare no competing interests.

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Appendix