GAMIFICATION AND EFL WRITING: A PATHWAY TO MOTIVATION AND SKILL DEVELOPMENT IN LOW-RESOURCE CONTEXTS

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Abstract

Writing is often perceived as a daunting task for reluctant English as a Foreign Language (EFL) learners, leading to disengagement and underdeveloped skills. This study investigates how gamification—integrating game mechanics like badges, leaderboards, and narrative-driven tasks—can enhance motivation and writing proficiency among 50 university EFL learners in Pakistan, a low-resource educational context. Using quantitative approach, participants engaged in 8 weeks of gamified writing activities via platforms such as Kahoot! (for sentence-level drills) and Quill.org (for paragraph writing). The results revealed a 22% improvement in writing test scores, with grammar showing the largest gain (50% increase). Self-reported motivation surged by 69%, alongside significant shifts in enjoyment and confidence. Regression analysis highlighted badges as strong predictors of grammar and sentence structure improvements (β = 0.42 and 0.38, respectively), while leaderboards correlated moderately with motivation gains (r = 0.51). However, challenges such as technical constraints and the risk of extrinsic rewards overshadowing intrinsic growth were noted. The findings align with Self-Determination Theory, Flow Theory, and Constructivist principles, demonstrating that gamification mechanics foster competence, relatedness, and scaffolded skill development. This study addresses gaps in writing-specific gamification research and offers actionable insights for educators, emphasizing the need for balanced, context-sensitive implementation. While gamification proves transformative for reluctant writers, sustainable success requires integrating collaborative tasks and addressing infrastructural barriers. Future research should explore longitudinal impacts and cross-cultural adaptability.

Keywords: Gamification mechanics, EFL writing proficiency, motivation, low-resource contexts, Self-Determination Theory.

Introduction

For many EFL learners, writing evokes anxiety. Struggling with grammar, vocabulary, and coherence, reluctant writers often disengage, viewing writing as tedious rather than empowering (Cheng, 2017). This study addresses this challenge by exploring gamification: a strategy that uses points, badges, and leaderboards to make learning interactive. While gamification has boosted engagement in language acquisition (Deterding et al., 2011), its impact on writing, particularly for reluctant learners, remains underexplored.

The current research examines how gamified activities influence motivation, skill development, and attitudes in EFL writing. By focusing on intermediate learners in Pakistan, a context where English proficiency is critical yet under-resourced, the study aims to provide actionable insights for educators.

1. To what extent do gamification elements (e.g., badges, leaderboards) predict improvements in EFL writing skills among reluctant learners?
2. How does participation frequency in gamified writing tasks correlate with self-reported motivation levels?

3. What is the relationship between leaderboard performance and improvements in technical writing skills (e.g., sentence structure, grammar)?
4. Do learners' baseline motivation levels moderate the effectiveness of gamification in improving writing proficiency?
5. How sustainable are the observed gains in writing skills and motivation after the removal of gamification elements?

Literature Review

EFL learners frequently struggle with writing due to cognitive overload, fear of errors, and lack of motivation (Erkan & Saban, 2011). Traditional methods often fail to engage reluctant writers, perpetuating cycles of avoidance (Cheng, 2017). Gamification, however, leverages intrinsic motivators like competition and achievement to foster engagement. Studies show game-based learning improves vocabulary retention and oral fluency (Lee & Hammer, 2011), but writing-specific applications are sparse.

Gamification's success lies in its ability to provide immediate feedback and incremental challenges, reducing anxiety (Deterding et al., 2011). For example, leaderboards can help in developing healthy competition, while narrative-driven tasks such as quests to write a story contextualize learning. However, few studies so far have explored how these mechanics improve writing skills - cohesion or grammar. This shows that there is a for need for in-depth research on of role gamification in transforming reluctant students/learners into confident writers.

Theoretical Framework

This study is based on three foundational theories that explain how gamification help to improve motivation and writing skills among reluctant learners:

1. **Self-Determination Theory**

   Self-Determination Theory (SDT) pens that intrinsic motivation is determined by: competence, autonomy, and relatedness (Deci & Ryan, 1985). Gamification address these needs by offering learners environment and choices to enhance autonomy, introducing easy-to-harder challenges to build competence, and providing immediate corrective feedback. Similarly, it promotes collaboration through team-based activities and peer reviews. Huang et al. (2022) and Zainuddin et al. (2020) reiterate the idea that meeting these psychological needs can help reduce anxiety and maintain consistency in ESL/EFL writing.

2. **Flow Theory**

   Csikszentmihalyi's (1990) Flow Theory put forward that learner, during task, take interest and are engaged when there is a balance between challenge and skill level. Gamification divides these tasks into structured levels. It begins the task with simple sentences and gradually proceed to complex paragraphs. At the same time, rewards like badges or certificates are offered and awarded to maintain interest. Alsawaier's (2018) carried a study in Saudi Arabia. He found that gamified writing tasks significantly increased time management and focus, aligning perfectly with the principles of flow.

3. **Constructivist Learning Theory**

Constructivism focusses on active, learner-cantered knowledge construction (Vygotsky, 1978). This theory is supported by gamification through offering scaffolded activities, such as guided writing missions, and peer feedback in writing games. Huang and Hew's (2023) conducted a research study with Taiwanese EFL learners shows that gamified supported writing not only improved learners' cohesion and creativity but also made the learning process more engaging and effective.

Relevant Studies

Huang et al. (2022) carried out a research study to see the impact of gamification on Chinese ESL/EFL learners' writing. The findings of the study showed that using badges and leaderboards significantly increased writing frequency. It shows that reward-based elements can significantly enhance engagement in writing tasks.

Similarly, Zainuddin et al. (2020) explored gamified peer review activities in English Language learning classrooms in Indonesia. The study found that these activities helped improve writing coherence and reduced grammatical errors. This shows the importance and utility of interactive, game-based feedback mechanisms for writing in foreign language.

Sailer and Homner (2020) analysed the motivational effects of gamification components. The study reported that points and levels had largest impact on the motivation of the learners. This underscores the importance of well-crafted progression systems in keeping up engagement in the gamified learning classroom.

Huang and Hew (2023) investigated the function of narrative-based writing games in Taiwan. The students' creativity was reported to be developed through such games. It was also discovered that it decreased writing anxiety to a large extent. It can be inferred that storytelling features contribute to a less threatening and more interesting language class.

Aljaloud et al. (2023) explored gamified grammar drills in one of the universities in Saudi Arabian. He noticed a noticeable improvement in sentence structure accuracy among EFL learners. It shows that incorporating gaming elements into grammar teaching can significantly improve linguistic proficiency.

Conceptual Framework

The conceptual framework of the current study combines gamification mechanics, motivational drivers, and writing outcomes to illustrate their interconnected relationships. It consists of four main components:

1. **Gamification Elements**: Mechanics like points, badges, leaderboards, and narratives, as well as dynamics such as progression systems and feedback loops (Sailer & Homner, 2020).
2. **Motivational Drivers**: Intrinsic factors (e.g., enjoyment, curiosity, mastery) and extrinsic factors (e.g., rewards, competition) (Deterding et al., 2011).
3. **Writing Skills**: Micro-skills (grammar, vocabulary, sentence structure) and macro-skills (coherence, cohesion, argumentation).
4. **Learner Attitudes**: Reduced anxiety, increased confidence, and the perceived usefulness of gamified tasks.

This framework shows how these components interact. For example, badges can foster a sense of competence (rooted in SDT), leading to improvements in grammar. Leaderboards promote relatedness (SDT), encouraging collaborative writing, while narrative-driven tasks can induce a state of flow, sustaining engagement. These connections demonstrate how gamification can enhance both the process and outcomes of writing development.

Research Gaps

While existing research has made significant strides, several gaps remain. First, most studies focus on vocabulary acquisition or speaking skills, leaving a lack of exploration into how gamification can improve writing skills. Second, there is limited research on gamification's effectiveness for reluctant learners, especially in low-resource contexts like Pakistan. Finally, few frameworks explicitly link gamification mechanics to the development of both micro- and macro-skills in writing. This study aims to address these gaps by providing a deeper understanding of how gamification can support writing development in diverse educational settings, including Pakistan.

Methodology

Participants

The study involved 50 EFL learners (18-22) at postgraduate level in Pakistan, selected based on pre-intervention surveys identifying them as reluctant writers (scoring below average on motivation and writing proficiency scales).

Study Design

A quantitative pre-test/post-test design was employed to measure the impact of gamified writing activities on motivation and skill development. Data was collected through structured survey questionnaires, administered before and after the 8-week intervention.

Data Collection Instruments

The study employed a combination of pre-test and post-test writing surveys to gather data on participants' motivation and writing proficiency. The Motivation Scale, a 15-item Likert-scale questionnaire (adapted from Huang et al., 2022), assessed motivation levels using statements such as, "I enjoy writing tasks that feel like games," and "Earning points/badges makes me want to write more." Writing proficiency was evaluated through a rubric-based assessment, where participants completed timed writing tasks (e.g., composing a paragraph on a given topic). These tasks were graded by two independent raters, ensuring reliability ($\alpha = 0.87$). Additionally, the gamified intervention utilized platforms like Kahoot! for sentence-level drills and Quill.org for paragraph writing. Participants engaged in daily tasks, earning points and badges (e.g., "Grammar Master" for error-free sentences) and competing on weekly leaderboards to track progress.

Procedure

The study followed a structured three-phase procedure. First, a pre-test was conducted to establish baseline levels of motivation and writing skills through surveys and timed writing tasks. Next, participants underwent an 8-week intervention, engaging in 30-minute daily gamified writing sessions designed to enhance their skills. Finally, a post-test was administered using the same surveys and writing tasks to measure changes in motivation and proficiency, allowing for a clear comparison of pre- and post-intervention outcomes.

Rationale for Methods

The study employed regression analysis to quantify the relationship between badges earned (independent variable) and improvements in grammar and sentence structure (dependent variables). This method was chosen because beta coefficients (β) measure the strength and direction of effects, while p-values test statistical significance, isolating the unique contribution of badges. Correlation analysis was used to assess the association between leaderboard rank and motivation gains, with Pearson's r identifying linear relationships. The quantitative focus was essential for analysing numerical data (e.g., badges, ranks, test scores) to identify generalizable patterns, supported by p-values and effect sizes. Practical considerations included using data from gamified learning platforms and pre/post skill assessments, ensuring efficiency and scalability. However, limitations such as causality (e.g., badges may reflect effort rather

than cause improvement) and confounding variables (e.g., prior skill level) were acknowledged and addressed.

Alignment with Research Goals

The chosen methods directly tested the impact of gamified elements (e.g., badges, leaderboards) on skill development and motivation, aligning with the study's objectives. By providing actionable insights, the results informed program design, such as optimizing badge systems for language learning or leveraging leaderboards to boost engagement. This approach ensured that the study not only contributed to academic understanding but also offered practical applications for educators and program developers.

Detailed Interpretation of Tables
1. Motivation Survey Results

Metric	Pre-Test (Mean ± SD)	Post-Test (Mean ± SD)	p-value
Overall Motivation	2.3 ± 0.8	3.9 ± 0.6	< 0.001
Enjoyment of Writing	1.8 ± 0.7	3.5 ± 0.9	< 0.001
Confidence in Writing	2.1 ± 0.6	3.7 ± 0.7	< 0.001

The results reveal significant improvements in key areas of motivation and writing-related attitudes. Overall motivation saw a notable increase, with the mean score rising from 2.3 to 3.9 on a 5-point Likert scale—a 69% improvement. The reduction in standard deviation (SD: 0.8 → 0.6) suggests that post-intervention, students' motivation levels became more consistent across the group, with less variability. The statistically significant p-value (<0.001) further confirms that this improvement is not due to random chance but is a direct result of the intervention.

When it comes to enjoyment of writing, scores jumped from 1.8 to 3.5, marking a 94% increase. This shift indicates a move from initial aversion to moderate enjoyment of writing tasks. While the slight increase in standard deviation (0.7 → 0.9) suggests that some students enjoyed the gamified tasks more than others, the overall trend remains strongly positive. Similarly, confidence in writing improved from 2.1 to 3.7, a 76% gain. The small increase in standard deviation (0.6 → 0.7) implies that while most students felt more capable of tackling writing tasks, individual confidence levels varied slightly more post-intervention. These findings align closely with Self-Determination Theory (SDT). The badges encourage competence and hard work. On the other hand, leaderboards establish a sense of mutual support and relatedness among students. Along with these, gamified elements encourage students to focus more on writing tasks. Additionally, the nature of the challenges such as progressing from simple sentence to complex paragraph helped establish and maintain a state of flow, sustaining focus and improvement over time. This combination of competence, relatedness, and flow provides a detailed theoretical explanation for the improvements in motivation level, sense of enjoyment, and boost in confidence.

2. Writing Proficiency Scores

Skill	Pre-Test (Mean ± SD)	Post-Test (Mean ± SD)	p-value
Grammar	5.2 ± 1.4	7.8 ± 1.2	< 0.001
Vocabulary	4.9 ± 1.1	6.5 ± 1.3	< 0.001

Skill	Pre-Test (Mean ± SD)	Post-Test (Mean ± SD)	p-value
Sentence Structure	5.0 ± 1.3	7.2 ± 1.5	< 0.001
Coherence	4.5 ± 1.0	6.1 ± 1.4	< 0.001

Tablet No. 02 shows significant improvements in writing skills, with grammar the most improved component where a degree of improvement went up hill from 5.2 to 7.8 - 50% improvement. It shows the effectiveness of gamified drills like Kahoot! quizzes in reinforcing technical accuracy. The reduced standard deviation (SD: $1.4 \rightarrow 1.2$) suggests that students achieved more uniform mastery of grammatical concepts.

Vocabulary scores also rose by 33% ($4.9 \rightarrow 6.5$), likely due to the contextualized learning embedded in narrative-driven tasks, such as story-based missions. However, the slight increase in standard deviation ($1.1 \rightarrow 1.3$) indicates that retention rates varied among students. Similarly, sentence structure improved by 44% ($5.0 \rightarrow 7.2$), though the increase in SD ($1.3 \rightarrow 1.5$) suggests that while most students enhanced their skills, some faced challenges with more complex sentence construction.

Coherence, a macro-level writing skill, saw a 36% improvement ($4.5 \rightarrow 6.1$), reflecting better organization of ideas. However, the higher standard deviation ($1.0 \rightarrow 1.4$) implies variability in students' ability to grasp and apply these broader writing skills.

These improvements can be explained through the lens of Constructivist Learning Theory. Scaffolded tasks, such as those on Quill.org, allowed learners to build their skills incrementally, reinforcing foundational knowledge before tackling more complex challenges. In addition, instant feedback helps students to refine their work, showing a continuous improvement and polishing their skills. This are coincided with the flow theory, which propounds a balance in challenge and skill to maintain learners' engagement and enhance growth. these theoretical frameworks offer a detailed and solid explanation for the improvement in grammar, vocabulary, sentence structure, and coherence.

Regression Coefficients Table

Predictor	Outcome Variable	β (Beta)	p-value	Interpretation
Badges Earned	Grammar Improvement	0.42	0.003	Significant positive effect.
Badges Earned	Sentence Structure	0.38	0.007	Significant positive effect.

The table shows that for badge earned, a 0.42-unit increase in grammar scores and a 0.38-unit increase in sentence structure. This confirms Aljaloud et al. (2023) findings which reiterate the role of rewards in reinforcing repetitive practice.

Correlation Analysis Table

Variable 1	Variable 2	r (Pearson)	p-value	Interpretation
Leaderboard Rank	Motivation Gains	0.51	<0.001	Strong positive correlation.

The table shows a moderate positive correlation (r = 0.51) between leaderboard rank and motivation. It indicates that competition played a crucial role in engaging learners. However, the dependency on extrinsic motivators, such as leaderboards, might overshadow the intrinsic growth in learning (Hamari et al., 2014). It can be concluded that leaderboards play a principal role in learners' participation, however, they need to be balanced with collaborative tasks to mitigate stress level and encourage a more holistic learning experience.

The findings provide deep insights for educators, practitioners and policy makers. Badges proved highly effective for mastering micro-skills like grammar and sentence structure, helping

increase technical accuracy. Similarly, although leaderboards boosted participation it is suggested that they should be integrated with collaborative activities to control stress level and nourish a joyful learning environment.

Discussion

 The over all impression of the study, on the basis of findings, is that gamification significantly improves motivation level and writing proficiency among reluctant university-level EFL learners. After the treatment, Grammar proficiency came up with the most notable improvement. Similarly, badges and leaderboards that enhanced the motivation level of the learner in terms of competence, relatedness, and balanced challenges, penned by Self-Determination Theory and Flow Theory. However, the strong correlation between leaderboard performance and motivation shows that the stress level surges. It also denotes an uphill tend showing over-reliance on extrinsic rewards. It is therefore, suggested to integrate collaborative tasks to create a more inclusive and less stressful learning classroom environment. This confirms Hamari et al.'s (2014) findings, arguing that excessive competition can significantly reduce intrinsic motivation, potentially affecting long-term engagement.

The study further confirms that although gamification can be highly effective for skills like grammar and sentence structure, it is less effective when comes higher-order skills such as coherence. It provides a justification for introducing activities such as peer reviews and collaborative activities to address problem with higher order thinking skills. It confirms finding of Zainuddin et al. (2020), who argued that gamified peer review activities improved writing coherence and reduced grammatical errors, reiterating that the importance of collaborative learning in developing advanced writing skills. The study also highlights the problems tied with low-resource teaching and learning contexts, where technical constraints like intermittent power failure and limited or weak internet access can affect the gamification-based teaching and learning. Moreover, a complete reliance on rewards poses a serious question about the persistence and sustainability of motivation and skill retention once the element of gamification is eliminated. It clearly resonates with Deci and Ryan (1985) findings who warned that extrinsic motivators can hinder intrinsic growth if not balanced. Overall, gamification is a revolutionary and transformative approach to EFL writing which can enhance writing miraculously. However, it also requires skilful design to balance competition, collaboration, and accessibility for long-term success.

Conclusion

This quantitative study demonstrates that gamification significantly enhances motivation and writing skills among reluctant EFL learners. Badges and leaderboards emerged as critical tools for driving engagement, while structured, game-like tasks improved technical writing skills. Educators in similar contexts should consider integrating gamified platforms like Kahoot! and Quill.org, though competition-heavy designs may require moderation to avoid undue stress. Future research should explore longitudinal impacts and cross-cultural applicability.

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