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STUDENT ACCEPTANCE AND TEACHER ADAPTATION IN TAILORED EFL GAMIFICATION: THE ROLE OF LEARNER DIVERSITY

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Abstract: This study examined how learner diversity influences students' acceptance of tailored gamification in English as a Foreign Language (EFL) classrooms and how both students and teachers perceive its implementation. Using a sequential mixed methods approach, the study first collected questionnaire data from 108 students, followed by semi structured interviews with 12 students and 2 teachers. Quantitative data were analyzed using descriptive statistics, Pearson correlation, multiple regression, and one way ANOVA, while qualitative data were analyzed thematically to explain the statistical results. The findings showed that learner diversity was positively related to students' acceptance of gamified learning ($r = 0.46$, $p < 0.01$) and significantly predicted it ($R^2 = 0.27$, $F(3,104) = 12.87$, $p < 0.001$). Among the predictors, motivation had the strongest effect ($\beta = 0.34$, $p < 0.001$), followed by digital literacy ($\beta = 0.28$, $p < 0.01$) and proficiency level ($\beta = 0.19$, $p < 0.05$). Student acceptance also differed significantly across proficiency groups ($F(2,105) = 6.45$, $p < 0.01$). Qualitative findings highlighted three key themes: differentiated engagement driven by motivation, digital readiness as a condition for participation, and perceived fairness in gamified design. Teachers emphasized the need to adapt gamification to diverse learner needs through flexible and inclusive strategies. Overall, the study suggests that gamification is more likely to be effective when it is designed and implemented in ways that are responsive to learner diversity.
Keywords: *EFL gamification; learner diversity; student acceptance; digital literacy; tailored instruction.*

INTRODUCTION

Digital gamification, defined as the application of game design elements such as points, badges, leaderboards, and challenges in non-game educational contexts, has become a prominent innovation in English as a Foreign Language (EFL) education. A growing body of research demonstrates that gamified instruction can enhance learner motivation, participation, language performance, and self-regulated learning (Chan & Lo, 2024; Zainuddin et al., 2020; S. Zhang & Hasim, 2023; Zhou, n.d.) Furthermore, systematic reviews drawing on major databases such as Web of Science and Scopus highlight its widespread implementation across diverse non English speaking contexts and language skills, underscoring its global relevance (Arip & Hashim, 2024; Jaramillo-mediavilla et al., 2024; Zeng et al., 2024; S. Zhang & Hasim, 2023; W. Zhang et al., 2024).

Despite these promising developments, the effectiveness of gamification remains inconsistent. Recent studies indicate that its impact varies significantly depending on learner characteristics and instructional contexts (Chan & Lo, 2024; Denden et al., 2024; Zeng et al., 2024). In particular, differences in motivation, proficiency, digital literacy, and learning strategies shape how learners engage with gamified environments. Evidence from systematic reviews further suggests that psychological and behavioral outcomes are moderated by individual factors such as personality traits and motivational profiles, highlighting the limitations of one size fits all gamification designs (Denden et al., 2024; Oliveira et al., 2023).

In EFL classrooms, learner diversity is inherently multidimensional. Students differ not

only in language proficiency and motivational orientation but also in their ability to navigate digital platforms, commonly conceptualized as digital literacy (Am et al., 2026; Ameen, 2026; Denden et al., 2024; S. Zhang & Hasim, 2023). Digital literacy plays a critical role in enabling meaningful participation in technology-enhanced learning, as limited competencies may hinder engagement and reduce the effectiveness of gamified instruction (Alnuaim, 2024; Feng & Sumettikoon, 2024; Yousofi et al., 2025; Zeng et al., 2024; Rosydiyah, 2022). Moreover, while motivation is widely recognized as a key driver of engagement, its influence depends on the alignment between gamification design and learner needs (Chan & Lo, 2024; Zeng et al., 2024; S. Zhang & Hasim, 2023).

Beyond learner related factors, the successful implementation of gamification also depends on teachers' acceptance and readiness. Research grounded in the Technology Acceptance Model (TAM) shows that perceived usefulness, ease of use, and contextual readiness significantly influence teachers' intention to adopt gamified instructional tools (Albaqami, 2024; Berdousis & Nicosia, 2025; Çeşme & Akdağ Çimen, 2026; Luo, 2024; Maruf et al., 2024), At the same time, teachers' decisions are closely shaped by students' engagement and classroom dynamics (Balalle, 2024; Denden et al., 2024; Julieth et al., 2024; Luo, 2024). However, prior research has largely examined student and teacher acceptance separately, with limited attention to their interdependence.

This gap in the literature is particularly significant. While a growing number of studies have examined tailored gamification in education (Bai et al., 2020; Hong et al., 2024; Oliveira et al., 2023; Rosyidah et al., 2026) and learner diversity in gamified environments (Denden et al., 2024; Fellipe et al., 2025; Susana et al., 2026), few have simultaneously integrated learner diversity, tailored gamification design, and both student and teacher acceptance within a single unified framework. As a result, there is limited empirical understanding of how diverse learner characteristics collectively shape both sides of acceptance, and how student and teacher acceptance interact with each other in gamified EFL classrooms. Addressing this gap is particularly urgent given that EFL classrooms across Indonesia and other non-English speaking contexts are increasingly heterogeneous encompassing students of varying proficiency, motivational profiles, and digital readiness making uniform gamification approaches both pedagogically insufficient and potentially inequitable (Chan & Lo, 2024; Denden et al., 2024; Yousofi et al., 2025; Zainuddin et al., 2020.; Mujayanah et al., 2023).

Recent studies have explored gamification in EFL learning, primarily focusing on its impact on motivation and engagement. For instance, previous research has consistently reported positive effects of gamified environments on learner engagement; however, these studies often overlook differences in learner profiles and individual characteristics (Fu & Liu, 2022; Jaramillo-mediavilla et al., 2024; Panmei & Waluyo, 2023). Similarly, Zainuddin et al. (2023) highlighted the role of gamification in enhancing participation, but their work emphasized general instructional design rather than adaptive or personalized approaches (Zainuddin, 2023). In another study, Lee (2021) said that learner motivation was identified as a key determinant of language learning success, while research grounded in the Technology Acceptance Model has further demonstrated that learners' perceptions and self-efficacy influence their engagement with digital tools, however, limited attention has been given to how teacher acceptance interacts with diverse learner needs (Alamer & Lee, 2024; Alrashidi & Alshammari, 2025; Lee, 2021; Mekheimer, 2025; Pan & Chen, 2021). In contrast, the present study integrates learner diversity, tailored gamification, and both student and teacher acceptance into a single framework, thereby addressing the lack of holistic and context sensitive research (Coelho & Abreu, 2025; Helvich et al., 2023; Ofosu-ampong & Ofosu-ampong, 2023; Sambo et al., 2025).

Despite extensive research on gamification in EFL education, there remains a limited understanding of how gamified instruction can be systematically tailored to accommodate learner diversity while simultaneously considering both student and teacher acceptance. Existing studies tend to examine these factors in isolation, resulting in a fragmented understanding of their combined impact. Therefore, this study aims to investigate the role of learner diversity in shaping student and teacher acceptance of tailored gamification in EFL classrooms. Specifically, this study addresses the following research questions: (1) How does learner diversity influence students' acceptance of gamified learning? (2) How do teachers perceive and respond to learner diversity when implementing gamified EFL instruction? and (3) How are student and teacher acceptance

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interrelated within tailored gamified EFL instruction?

METHOD

This study employed an explanatory sequential mixed-methods design to examine how learner diversity influences students' acceptance of tailored gamification in EFL classrooms and to explore how teachers perceive and respond to such diversity in the implementation of gamified instruction. In this design, the study began with a quantitative phase focused on students, followed by a qualitative phase involving both selected students and teachers to explain and elaborate on the quantitative findings.

This design was considered appropriate because the study addressed two complementary goals. First, it sought to identify the extent to which learner related factors, particularly English proficiency, learning motivation, and digital literacy predicted students' acceptance of gamified learning. Second, it aimed to explain how these statistical patterns were experienced by learners and interpreted pedagogically by teachers in actual classroom practice. Quantitative analysis alone was insufficient to capture the contextual and experiential dimensions underlying students' responses to gamification; therefore, qualitative inquiry was used as an explanatory follow-up.

The two phases were integrated at three points. First, the quantitative results informed the selection of interview participants. Second, the qualitative interview protocol was developed on the basis of salient statistical findings, including differences across learner profiles and levels of acceptance. Third, the qualitative findings were used to interpret and contextualize the quantitative results, thereby generating a more comprehensive understanding of tailored gamification in a diverse EFL setting.

The study was conducted at SMK Negeri Tambakboyo, Tuban, East Java, Indonesia. The participants in the quantitative phase consisted of 108 students enrolled in EFL classes. These students represented varied learner profiles in terms of English proficiency, learning motivation, and digital literacy, which were central to the concept of learner diversity examined in this study.

For the quantitative phase, participants were selected using a purposive stratified sampling approach. The strata were defined based on three key learner characteristics: (1) English proficiency level (low, medium, high), determined from students' recent English scores and teacher classification, (2) learning motivation (low, moderate, high), identified through preliminary questionnaire screening, and (3) digital literacy level (low, moderate, high) assessed using a short self report scale prior to the main data collection. These strata were used to ensure that students with different combinations of learner characteristics were proportionally represented in the sample. This approach enabled the study to capture sufficient variation across learner profiles and to examine how these differences related to students' acceptance of gamified learning.

In the qualitative phase, 12 students and 2 English teachers were selected purposively. The student participants were chosen using maximum variation sampling, based on their questionnaire results, to represent diverse combinations of proficiency, motivation, digital literacy, and levels of gamification acceptance. The two teachers who taught the participating classes were included as key informants because of their direct experience in implementing gamified instruction and adapting it to diverse learner needs. Their inclusion provided pedagogical insight into how learner diversity was perceived and managed in classroom practice.

The study was conducted in two sequential phases.

In the quantitative phase, permission to conduct the study was first obtained from the school administration. Students were informed about the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. After consent had been obtained, a structured questionnaire was administered during regular class sessions to maintain the natural learning context. Participants were given clear instructions and sufficient time to complete the questionnaire independently. After collection, the responses were screened, coded, and entered into statistical software for analysis.

The qualitative phase was conducted after the quantitative results had been analyzed. Based on the statistical findings, selected students representing different learner profiles and levels of acceptance were invited to participate in semi-structured interviews. The two English teachers were also interviewed to provide explanatory insight into classroom implementation, student readiness, and instructional adaptation. The interview guide was developed from the key quantitative findings, particularly those related to motivation, digital literacy, proficiency differences, and levels of student acceptance. All interviews were conducted in a flexible and

conversational manner to allow participants to elaborate on their experiences while remaining focused on the aims of the study. With participants' consent, the interviews were audio-recorded and transcribed for analysis.

Finally, the findings from both phases were integrated during interpretation. The qualitative findings were used to explain why certain learner characteristics were associated with higher or lower student acceptance and how teachers adjusted gamified instruction to respond to diverse learner needs.

The quantitative data were collected through a structured questionnaire administered to 108 students. The instrument was designed to measure two main domains: learner diversity and student acceptance of tailored gamification.

Learner diversity was operationalized through three dimensions identified in the literature as particularly relevant to gamified EFL learning: English proficiency, learning motivation, and digital literacy. Student acceptance referred to students' perceptions of and willingness to engage with gamified learning activities, including their perceived usefulness, ease of participation, enjoyment, and overall receptiveness to the instructional approach.

The questionnaire used a five point Likert scale, ranging from strongly disagree to strongly agree. Prior to the main administration, the instrument was reviewed and refined to improve clarity, relevance, and alignment with the constructs being measured. The questionnaires were distributed during regular classroom sessions to ensure a familiar context and to maximize response completeness. After the questionnaires had been collected, all responses were checked for completeness and consistency before being coded for statistical analysis.

The qualitative data were collected through semi structured interviews with 12 students and 2 English teachers. This phase was intended to explain and deepen the interpretation of the quantitative results.

Student interview participants were selected from the quantitative sample to represent contrasting cases, such as students with relatively high and low acceptance of gamified learning, different levels of proficiency, and varying degrees of digital readiness and motivation. This allowed the study to explore how learner diversity shaped students' experiences of gamification in more detail.

The two teachers were interviewed as key pedagogical informants. Their interviews focused on how they perceived learner diversity, how they implemented gamified learning activities, what challenges they encountered, and how they adjusted instructional strategies to accommodate students with different levels of readiness and participation.

The interview protocol was developed directly from the quantitative findings. It included questions about learners' experiences with game elements, perceived benefits and difficulties, participation barriers, and classroom adaptation. All interviews were conducted in a supportive setting to encourage open responses. With participants' consent, the interviews were audio recorded and transcribed verbatim. Field notes were also taken to capture contextual observations relevant to the interpretation of the data**.**

The quantitative data were analyzed using statistical software. Before the main analysis, all questionnaire responses were screened to identify incomplete or invalid data. Only complete and usable responses were included in the final dataset.

Descriptive statistics were first computed to summarize the participants' responses and to provide an overview of the main variables, including learner diversity and student acceptance of tailored gamification. Reliability analysis using Cronbach's alpha was then conducted to examine the internal consistency of the questionnaire scales.

To address the research questions, Pearson correlation analysis was used to examine the relationships between learner diversity and student acceptance. Subsequently, multiple regression analysis was performed to determine the extent to which the dimensions of learner diversity namely proficiency, motivation, and digital literacy predicted students' acceptance of gamified learning. In addition, one way ANOVA was conducted to examine whether student acceptance differed significantly across proficiency groups. These analyses enabled the study to identify both overall relationships and the relative contribution of specific learner-related factors.

The qualitative data were analyzed using thematic analysis. After the interviews had been transcribed, the researcher read the transcripts repeatedly to become familiar with the data and to identify preliminary ideas relevant to the research focus.

The analysis then proceeded through coding meaningful units of data related to students' experiences of gamification, their motivational orientations, digital readiness, perceptions of

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fairness and difficulty, and teachers' strategies in adapting instruction. Similar codes were grouped into broader categories, which were then refined into themes that represented recurring patterns across the interview data.

The qualitative analysis served an explanatory purpose. Therefore, emerging themes were continuously compared with the quantitative findings to identify areas of convergence and elaboration. This process helped explain why some students responded more positively to gamified learning than others and how teachers interpreted and managed learner diversity in practice.

To ensure the quality of the quantitative instrument, both validity and reliability were established through several procedures. Content validity was first examined through expert review by specialists in EFL pedagogy and educational technology. Their feedback was used to revise unclear or overlapping items and to improve alignment with the intended constructs.

Construct validity was assessed using exploratory factor analysis (EFA). Prior to the analysis, sampling adequacy was confirmed with a Kaiser Meyer Olkin (KMO) value of 0.84, indicating that the data were suitable for factor analysis and Bartlett's Test of Sphericity was significant ($\chi^2 = 612.45$, $p < 0.001$), supporting factorability. The EFA results revealed a clear factor structure corresponding to the intended dimensions of learner diversity (motivation, digital literacy, proficiency) and student acceptance. All retained items showed factor loadings above 0.60, while items with loadings below 0.50 or cross loadings were removed. The extracted factors collectively explained 68.3% of the total variance, indicating satisfactory construct representation.

Internal consistency reliability was assessed using Cronbach's alpha. The learner diversity scale demonstrated good reliability ($\alpha = 0.82$), while the student acceptance scale showed high reliability ($\alpha = 0.88$), both exceeding the recommended threshold of 0.70.

A pilot study was also conducted prior to the main data collection to evaluate the clarity, wording, and usability of the instrument. Feedback from the pilot participants led to minor revisions, ensuring that the questionnaire functioned appropriately in the target context.

To enhance the trustworthiness of the qualitative findings, the study applied strategies related to credibility, dependability, and confirmability. Credibility was strengthened through member checking, in which selected participants reviewed the researcher's interpretations of their responses. Dependability was supported by maintaining an audit trail documenting key decisions during data collection, coding, and theme development.

Confirmability was addressed through continuous comparison between qualitative findings and quantitative results to minimize researcher bias. Reflective notes were maintained throughout the analysis to enhance transparency and reflexivity. These procedures ensured that the findings were grounded in participants' perspectives and analytically rigorous.

Prior to data collection, permission to conduct the study was obtained from the school administration. All participants were informed about the purpose of the research, the voluntary nature of participation, and their right to withdraw at any stage without penalty. Confidentiality and anonymity were maintained throughout the study by removing identifying information from the dataset and interview transcripts. Audio recordings and research data were stored securely and used solely for academic purposes.

RESULTS AND DISCUSSION

This section presents the findings in accordance with the three research questions guiding the study. The results are organized into three main parts: (1) the quantitative findings addressing the influence of learner diversity on students' acceptance of tailored gamification, (2) the qualitative findings explaining how students with different learner profiles experienced and perceived gamified learning, and (3) the qualitative findings concerning how teachers perceived and responded to learner diversity in implementing gamified EFL instruction.

RQ1. How does learner diversity influence students' acceptance of tailored gamification in EFL classrooms?

To answer the first research question, quantitative analyses were conducted using descriptive statistics, reliability testing, Pearson correlation, multiple regression, and one-way ANOVA. These analyses examined the extent to which learner diversity, particularly motivation, digital literacy, and proficiency, was associated with and predictive of students' acceptance of tailored gamification.

A total of 108 students participated in the quantitative phase. Overall, the descriptive results indicated moderate to relatively high levels across

the main variables. Learner diversity, operationalized through differences in motivation, digital literacy, and proficiency, showed a mean score of 3.42 (SD = 0.51), suggesting noticeable variation across learner characteristics. Students' acceptance of gamified learning was relatively high (M = 3.78, SD = 0.56), indicating generally positive attitudes toward the use of gamification in the EFL classroom.

Table 1. *Descriptive statistics*

Variable	N	Mean (M)	Std. Deviation (SD)
Learner Diversity	108	3.42	0.51
Student Acceptance	108	3.78	0.56

Reliability analysis

The internal consistency of the questionnaire scales was assessed using Cronbach's alpha. The results showed acceptable reliability for all relevant scales. The learner diversity scale obtained an alpha coefficient of 0.82, while the student acceptance scale showed a coefficient of 0.88. These values exceed the commonly accepted threshold of 0.70, indicating that the instrument was sufficiently reliable for further analysis.

Table 2. Reliability Analysis

Variable	Cronbach's Alpha (α)	Interpretation
Learner Diversity	0.82	Reliable
Student Acceptance	0.88	Highly Reliable

Correlation between learner diversity and student acceptance

Pearson correlation analysis revealed a moderate positive relationship between learner diversity and student acceptance of gamified learning ($r = 0.46$, $p < 0.01$). This result suggests that students with more favorable learner related characteristics, particularly in terms of motivation, digital literacy, and proficiency, tended to report higher acceptance of tailored gamification.

Table 3. *Correlation between learner diversity and student acceptance*

Variables	1	2
1. Learner Diversity	—	
2. Student Acceptance	0.46**	—

Note. $p < 0.01$

Predictive role of learner diversity

To further examine the extent to which learner diversity predicted student acceptance, a multiple regression analysis was conducted using motivation, digital literacy, and proficiency level as predictors. The model was statistically significant, $F(3,104) = 12.87$, $p < 0.001$, explaining 27% of the variance in student acceptance ($R^2 = 0.27$).

Among the prdictors, motivation emerged as the strongest predictor of student acceptance ($\beta = 0.34$, $p < 0.001$), followed by digital literacy ($\beta = 0.28$, $p < 0.01$), and proficiency level ($\beta = 0.19$, $p < 0.05$). These findings indicate that students who were more motivated, digitally competent, and linguistically prepared were more likely to respond positively to gamified learning.

Table 4. Multiple Regression Results Predicting Student Acceptance

Predictor	β	p-value	Significance
Motivation	0.34	< 0.001	Significant
Digital Literacy	0.28	< 0.01	Significant
Proficiency Level	0.19	< 0.05	Significant

Differences in student acceptance across proficiency levels

A one way ANOVA was conducted to examine whether student acceptance differed across proficiency groups (low, medium, and high). The analysis showed a statistically significant difference, $F(2,105) = 6.45$, $p < 0.01$.

Table 5. *ANOVA results for student acceptance across proficiency levels*

Source	df	F	p-value	Significance
Between Groups	2	6.45	< 0.01	Significant
Within Groups	105	—	—	—

Post-hoc analysis using Tukey's test indicated that high proficiency students (M = 3.95) reported significantly higher acceptance than low proficiency students (M = 3.52). No significant difference was found between the medium and high proficiency groups or between the medium and low proficiency groups. These findings suggest that proficiency level influenced students' responses to gamified learning, with higher-proficiency learners tending to perceive gamification more positively.

Table 6. *Post-hoc (Tukey test) summary*

Group Comparison	Mean Difference	Significance
High vs. Low Proficiency	0.43	Significant
Medium vs. High	—	Not Significant
Medium vs. Low	—	Not Significant

Overall, the quantitative findings indicate that learner diversity significantly influenced students' acceptance of tailored gamification. In particular, motivation and digital literacy were the most influential predictors, while proficiency level also contributed to differences in acceptance across learner groups.

RQ2. How do students with different learner profiles experience and perceive tailored gamification in EFL classrooms?

The second research question was addressed through semi-structured interviews with 12 students selected to represent diverse learner profiles and varying levels of acceptance of gamified learning. The qualitative data were analyzed using a thematic analysis approach following six stages: familiarization, initial coding, theme development, review, definition, and reporting. Two coders were involved in the analysis. An initial coding framework was developed independently and then compared, resulting in an inter-coder agreement of 0.86 (Cohen's kappa), indicating high reliability. Discrepancies were discussed until consensus was reached.

Three major themes emerged: (1) differentiated engagement driven by motivation, (2) digital readiness as a condition for participation, and (3) perceived fairness and inclusivity in gamified learning design.

Theme 1: Differentiated engagement driven by motivation

This theme was reported by 8 out of 12 students, particularly those with higher levels of motivation. These students described gamified activities as engaging and rewarding, emphasizing how game elements supported sustained participation:

> "I like when there are points and levels because it feels like a real game. When I see my score improving, I feel motivated to continue and try harder in the next activity. It makes learning English less boring."

In contrast, 4 students with lower motivation expressed more ambivalent or negative experiences. For them, competitive elements sometimes created pressure rather than engagement:

> "Sometimes I feel left behind when others get higher scores, and it makes me less interested. I feel like I cannot catch up, so I just stop trying seriously."

A small number of negative cases (2 students) showed resistance regardless of motivation level, indicating that gamification did not universally enhance engagement:

> "Even with games, I still prefer normal learning because I feel distracted. The game makes it fun, but I don't always focus on the lesson."

These findings suggest that gamification may amplify existing motivational differences rather than reduce them.

Theme 2: Digital readiness as a condition for participation

This theme was evident in 9 out of 12 students, highlighting the importance of digital literacy in enabling participation. Students with higher

digital readiness described smooth interaction with the platform:

> "It's easy for me because I already use apps like this before. I don't need to think about how to use it, so I can focus on answering the English questions and finishing the tasks quickly."

However, 3 students reported significant challenges related to limited digital skills:

> "Sometimes I don't understand how to use the app, so I just follow my friends. I feel confused at the beginning, and it makes me slower than others."

A notable contradictory case emerged in which one digitally skilled student still reported frustration due to technical issues rather than ability:

> "I know how to use the app, but sometimes the connection is slow, and it interrupts the activity. That makes me annoyed even if I understand the system."

These findings indicate that digital readiness is necessary but not always sufficient, as contextual factors (e.g., technical constraints) may also influence participation.

Theme 3: Perceived fairness and inclusivity in gamified design

The third theme relates closely to the ANOVA findings showing that high-proficiency students reported higher acceptance than low proficiency students. Students did not perceive gamified learning in the same way, particularly when they evaluated the fairness and accessibility of tasks.

This theme was reported by 7 out of 12 students, particularly in relation to proficiency differences. Higher-proficiency students viewed gamification as motivating and appropriate:

> "I like competition because it pushes me to do better. When I compete with my friends, I feel challenged, and it helps me improve my English faster."

In contrast, 5 lower-proficiency students perceived gamified tasks as less fair or harder to achieve:

> "If the game is too difficult, I feel like I cannot win. Even if I try, I still get a low score, so I don't really enjoy the activity."

However, two students expressed mixed perceptions, suggesting that fairness could be improved through design adjustments:

> "I think the game is fun, but sometimes it's too fast for me. If there were easier levels or more time, I would enjoy it more."

These findings indicate that perceptions of fairness are closely tied to task difficulty and alignment with learner ability, reinforcing the need for differentiated design.

Overall, the qualitative findings provide a more nuanced explanation of the quantitative results. While motivation, digital literacy, and proficiency were identified as predictors statistically, the interview data show how these factors shape actual learner experiences, including both positive and contradictory cases.

RQ3. How do teachers perceive and respond to learner diversity in implementing gamified EFL instruction?

The third research question was addressed through interviews with two English teachers. The same thematic analysis procedures were applied. Two main themes emerged: (1) teacher perceptions of learner readiness and classroom feasibility, and (2) adaptive implementation of gamified instruction.

Theme 1: Teacher perceptions of learner readiness and classroom feasibility

Both teachers emphasized that gamification effectiveness depends on student readiness. One teacher explained:

> "Gamification works well when students are active and understand the system. But in my class, not all students are ready, so I need to adjust the difficulty and give more explanation."

The second teacher highlighted contextual constraints:

> "It is useful, but it takes more preparation time. Also, students have different abilities, so sometimes it is difficult to make one activity that fits all."

These responses indicate that teacher acceptance is conditional and shaped by classroom realities.

Theme 2: Adaptive implementation of gamified instruction

The second theme shows how teachers

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responded to learner diversity through instructional adaptation. Rather than applying gamification uniformly, the teachers described making practical adjustments to support students with different levels of readiness and participation.

Both teachers described using adaptive strategies to address learner diversity. One teacher stated:

> "I try to mix strong and weak students so they can help each other. This way, the weaker students don't feel left behind, and the stronger ones can support them."

Another teacher added:

> "Sometimes I simplify the instructions or reduce the competition. I also give extra guidance for students who are not familiar with the technology."

These findings suggest that teachers play a key mediating role in ensuring that gamification remains inclusive.

Across both student and teacher data, the findings show that learner diversity strongly shapes how gamification is experienced and implemented. Importantly, the inclusion of negative and mixed cases demonstrates that gamification is not uniformly effective, but depends on the interaction between learner characteristics, instructional design, and teacher adaptation.

Across the three research questions, the findings consistently show that learner diversity played a central role in shaping the implementation and reception of tailored gamification in EFL classrooms. Quantitatively, motivation, digital literacy, and proficiency significantly influenced students' acceptance of gamified learning. Qualitatively, students' accounts explained why these learner related factors mattered, while teachers' perspectives demonstrated how learner diversity shaped pedagogical adaptation and classroom implementation.

Taken together, the results suggest that gamification is most effective when it is designed and implemented in ways that are responsive to learner differences. A one size fits all approach is unlikely to support all students equally, particularly in classrooms characterized by variation in motivation, digital readiness, and proficiency.

The present study set out to examine how learner diversity shapes both student and teacher acceptance of tailored gamification in EFL classrooms. The findings offer a more integrated understanding of gamified learning by demonstrating that its effectiveness is not inherent in the use of game elements themselves, but rather emerges from the interaction between learner characteristics, instructional design, and teacher mediation. In doing so, this study extends prior research that has largely treated these variables in isolation.

From a quantitative perspective, the results indicate that learner diversity significantly predicts students' acceptance of gamified learning, with motivation emerging as the strongest predictor, followed by digital literacy and proficiency. This finding aligns with previous research suggesting that motivation plays a central role in shaping engagement in gamified environments (Baah & Govender, 2024; Chan & Lo, 2024; S. Zhang & Hasim, 2023). However, the present study adds nuance by showing that motivation does not operate uniformly, rather it interacts with gamification design. The qualitative findings reveal that highly motivated students perceive game elements such as points and levels as rewarding, while less motivated learners may experience competition as discouraging. This suggests that gamification can amplify existing motivational differences rather than mitigate them, supporting concerns raised by Denden and Oliveira regarding the limitations of one size fits all designs (Denden et al., 2024; Oliveira et al., 2023; Xiao & Hew, 2024).

Digital literacy also emerged as a significant predictor, reinforcing its role as a prerequisite for meaningful participation in technology enhanced learning (Feng & Sumettikoon, 2024; Yousofi et al., 2025). The qualitative data illustrate that students with higher digital competence are able to focus on learning tasks rather than technical navigation, thereby experiencing smoother engagement. Conversely, students with limited digital skills face barriers that reduce their participation and confidence. Interestingly, the findings also highlight that digital readiness alone is insufficient; external factors such as technical issues (e.g., unstable internet connection) can disrupt engagement even for digitally competent learners. This extends prior literature by emphasizing that both individual and contextual factors must be considered when implementing gamified instruction.

Proficiency level, while a weaker predictor compared to motivation and digital literacy, still significantly influenced student acceptance. The

ANOVA results, supported by qualitative insights, show that higher-proficiency students tend to perceive gamification more positively, particularly in competitive contexts. In contrast, lower-proficiency learners often perceive gamified tasks as less fair or overly challenging. This finding is consistent with earlier studies (Jaramillo-mediavilla et al., 2024; Zainuddin et al., 2020) but adds depth by linking these perceptions to the concept of fairness. The qualitative evidence suggests that when tasks are not aligned with learners' abilities, gamification may inadvertently reinforce feelings of inadequacy. Therefore, perceived fairness emerges as a critical factor in determining whether gamification is inclusive or exclusionary.

Beyond student related factors, this study highlights the crucial role of teachers in mediating the effectiveness of gamification. The findings show that teacher acceptance is not unconditional but depends on perceived student readiness and classroom feasibility, consistent with the Technology Acceptance Model. Teachers in this study recognized the potential benefits of gamification but also expressed concerns about the time required for preparation and the challenge of addressing diverse learner needs. This suggests that teacher acceptance is shaped not only by perceptions of usefulness and ease of use but also by practical classroom realities.

Importantly, the study demonstrates that teachers actively adapt gamified instruction to accommodate learner diversity. Strategies such as grouping students with mixed abilities, simplifying instructions, and reducing competitive pressure reflect a shift from standardized to responsive pedagogy. These findings support recent calls for adaptive and personalized gamification and highlight the teacher's role as a key agent in ensuring inclusivity. In this sense, teacher acceptance and student acceptance are not independent constructs but are dynamically interconnected. Teachers adjust their practices based on students' responses, while students' experiences are shaped by how teachers implement and adapt gamification.

Taken together, the findings contribute to the literature in three important ways. First, they provide empirical evidence that learner diversity significantly shapes student acceptance of gamification, not only statistically but also experientially. Second, they demonstrate that gamification can produce both positive and negative outcomes depending on how well it aligns with learner characteristics. Third, they highlight the interdependent relationship between student and teacher acceptance, offering a more holistic perspective than previous studies.

Pedagogically, these findings suggest that effective gamification requires more than simply incorporating game elements into instruction. Instead, it requires careful alignment between task design and learner profiles. Differentiated difficulty levels, flexible pacing, and supportive scaffolding may help address disparities in proficiency and digital readiness. Additionally, reducing excessive competition and incorporating collaborative elements may create a more inclusive environment for less motivated learners.

CONCLUSION

This study examined how learner diversity shapes both student and teacher acceptance of tailored gamification in EFL classrooms, offering a nuanced understanding of its effectiveness. The findings indicate that gamification is not inherently effective; rather, its success depends on alignment with learners' characteristics and thoughtful classroom implementation. From the student perspective, motivation, digital literacy, and proficiency significantly influence acceptance. Motivation emerged as the strongest factor, suggesting that highly motivated students benefit more from gamified environments. However, gamification may also reinforce existing disparities, particularly when competitive elements are not carefully designed. Digital literacy was found to be a necessary condition for participation, though not sufficient on its own due to contextual constraints such as technical issues. Additionally, lower-proficiency students were more likely to perceive gamified activities as less fair or more challenging.

From the teacher perspective, acceptance is shaped by classroom realities, including student readiness, time constraints, and instructional feasibility. Teachers play a crucial mediating role by adapting strategies to accommodate diverse learners, demonstrating that student and teacher acceptance are dynamically interconnected. These findings imply that gamification should be implemented as a flexible and adaptive approach, incorporating differentiated tasks, adjustable difficulty, and inclusive participation. Furthermore, digital literacy support and teacher professional development are essential to ensure equitable and effective implementation.

In conclusion, a one size fits all approach to gamification is insufficient in diverse EFL contexts. Effective practice requires alignment

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between learner needs, instructional design, and teacher adaptation. For future research, it is recommended to develop and empirically test adaptive gamification models that respond to learner differences, conduct longitudinal studies to examine long-term impacts across diverse learner groups, and further explore the reciprocal relationship between student and teacher acceptance. Such directions will contribute to more inclusive and context sensitive gamified learning environments.

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