

Article

A Study on the Impact of Gamified Language Learning Design on Students' Learning Persistence

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Abstract: In the context of growing interest in digital and student-centered learning, gamification has emerged as a powerful tool to enhance engagement and motivation in language education. While existing studies have established the short-term benefits of gamified environments, less is known about how gamification influences learners' persistence — the ability to sustain consistent learning effort over time. This study addresses that gap by adopting a qualitative approach to explore how university students experience gamified language learning and what factors affect their continued engagement. Semi-structured interviews were conducted with ten undergraduate students from diverse disciplines who had participated in gamified language learning platforms, either through formal coursework or self-directed applications. Thematic analysis revealed that gamification supports learning persistence through a combination of intrinsic motivation (e.g., progress tracking, role immersion), extrinsic incentives (e.g., badges, rankings), structural features (e.g., modular tasks, habit-forming cues), and social mechanisms (e.g., group challenges, peer accountability). However, the study also identifies potential pitfalls, such as leaderboard-induced pressure, repetitive tasks, and unclear evaluation criteria, which can hinder long-term commitment. These findings contribute to a more nuanced understanding of gamification as a pedagogical design framework and offer practical implications for educators, curriculum designers, and educational technology developers aiming to promote sustainable learner engagement in language education.

Keywords: gamification; language learning; learning persistence; student motivation; educational technology

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1. Introduction

In the era of digital transformation, gamification has become a widely adopted pedagogical strategy to enhance motivation and learner engagement in educational contexts, especially in language learning. Gamification refers to the integration of game elements — such as points, levels, badges, challenges, and narratives — into non-game environments to promote active participation and sustained interaction [1]. Its increasing prevalence in language education is driven by the need to address learners' fluctuating motivation, short attention spans, and declining persistence in long-term language study [2].

Recent studies have consistently shown that gamification can positively impact language learners' motivation, participation, and perceived enjoyment [3]. Game-based language learning systems and applications have been found to improve vocabulary acquisition, oral fluency, and learner confidence, particularly when designed with meaningful feedback and interactive features [4]. However, while the motivational effects of gamification are well established, its influence on students' learning persistence — defined as the ability to maintain consistent learning effort over time — remains underexplored [5].

Moreover, most gamification studies in applied linguistics have relied heavily on quantitative measures, such as test performance, time-on-task, or click rates [6]. These

data, while useful, often fail to capture the personal, affective, and contextual nuances that shape learner engagement and dropout. There is a growing call in recent literature for qualitative investigations that center the learner's voice and explore the subjective mechanisms behind motivational shifts and persistence [7].

To address these gaps, the present study adopts a qualitative approach using semi-structured interviews to investigate how university students experience gamified language learning environments. Specifically, it explores the ways in which different gamification elements (e.g., rewards, challenges, feedback systems, collaborative modes) influence learners' motivation and persistence. The participants in this study include ten undergraduate students from diverse academic backgrounds who have engaged with gamified language learning platforms, either through formal coursework or independent use of learning applications.

This study seeks to answer the following research questions:

- 1) What types of gamification elements do students perceive as most effective or ineffective in supporting long-term language learning persistence?
- 2) How do students' motivational patterns evolve during their engagement with gamified learning systems?
- 3) What internal and external mechanisms contribute to or hinder their ability to sustain language learning over time?

By foregrounding learner perspectives and drawing on in-depth narrative data, this research contributes to a more nuanced understanding of gamification not only as a motivational tool, but as a design framework that can either support or undermine long-term persistence in language acquisition. The findings aim to inform educators, curriculum designers, and educational technology developers in creating more effective, learner-centered gamified experiences.

2. Literature Review

2.1. Overview of Gamified Language Learning Research

With the growing integration of digital technology in education, gamification has become an increasingly popular instructional approach in the field of language learning. Gamification refers to the application of game elements — such as points, badges, levels, challenges, and narratives — into educational settings to increase learner engagement and motivation [1]. As language learners, particularly digital natives, tend to experience fluctuating attention and motivation, gamification has been widely adopted to address these challenges [2].

A comprehensive review by Zainuddin et al. analyzing 65 empirical studies found that gamified language learning significantly enhances learner participation, task completion, and enjoyment, especially in mobile and blended learning contexts [2]. Similarly, Chan and Lo conducted a systematic review of gamification in language education and identified key areas of application such as vocabulary acquisition, oral practice, and writing improvement [8]. However, they noted a lack of in-depth research on long-term impacts, particularly on students' learning persistence — a key aspect for academic success in language acquisition.

2.2. Gamification and Learner Motivation

In recent years, an increasing number of empirical studies have investigated the motivational effects of gamified language learning. Fathali and Okada demonstrated that learners participating in gamified English courses featuring point-based rewards, level progression, and badge systems exhibited significantly higher motivation and task engagement than those in traditional settings [3]. Likewise, a study by Shen, Lai and Wang concluded that gamification exerts a moderate to strong positive effect on language learners' behavioral outcomes such as activity frequency and course completion, particularly among beginners and low-motivation learners [9].

In addition, Rachels and Rockinson-Szapkiw found that immediate feedback mechanisms, such as real-time pronunciation scoring, contribute to increased self-regulation and greater perceived control over the learning process [4]. Wang and Tahir, synthesizing findings from multiple qualitative studies, argued that the motivational value of gamification is not limited to rewards alone but is also closely tied to immersion, narrative design, role-playing, and social collaboration [7]. These elements evoke a strong sense of identity and accomplishment, which are key to maintaining long-term engagement.

2.3. Gamification and Learning Persistence

While the short-term motivational benefits of gamification have been well documented, its influence on learning persistence — that is, the ability to sustain effort and motivation over time — remains an underexplored topic [10]. Zhang and Chen, in a qualitative study of Chinese university students, observed that while many learners were initially attracted to gamified systems, some lost interest over time due to repetitive tasks, limited feedback, and pressure from competitive leaderboards [11]. These findings suggest that poorly designed gamification features may hinder rather than help learner persistence.

Llorens proposed that to promote sustainable engagement, gamified learning environments should integrate three critical elements [12]:

- 1) visualized learning paths that clarify goals and progress.
- 2) adaptive challenge systems that match learners' current ability levels.
- 3) collaborative mechanisms that encourage peer support and accountability.

Koivisto and Hamari further emphasized that the value of gamification lies not merely in its entertainment potential, but in its capacity to foster goal-oriented, autonomous, and sustained learning behaviors through structured design, feedback, and identity development [1].

In summary, the current literature affirms that gamification can effectively enhance motivation, engagement, and short-term learning outcomes in language education. However, its long-term effects on learning persistence have not been sufficiently addressed, particularly from the perspective of learners themselves. As such, this study seeks to fill the research gap by adopting a qualitative, interview-based approach to explore how university students experience gamified language learning and what mechanisms support or hinder their motivation over time. The findings aim to inform more effective and learner-centered gamified design in language instruction.

3. Methodology

3.1. Research Design

This study adopted a qualitative research design based on semi-structured interviews, with the aim of exploring how gamified language learning design influences students' persistence in language study. By focusing on learner experiences, perceptions, and motivational patterns, this study seeks to uncover the mechanisms through which gamification affects sustained engagement. A phenomenological approach was chosen to gain in-depth understanding of the participants' lived experiences with gamified language learning environments. This approach is particularly appropriate for investigating the subjective meanings students attach to different game elements and their influence on learning persistence.

3.2. Participants

A total of 10 undergraduate students from different majors and years of study were purposefully selected through criterion sampling, ensuring that all participants had direct experience with gamified language learning courses or platforms (see Table 1).

Table 1. Demographic Characteristics of Participants.

Participants	Major	Year of Study	Gamified Learning Type
P1	English	Year 2	Course-integrated (writing)
P2	Japanese	Year 3	App-based (speaking)
P3	Computer Science	Year 1	App-based (listening/vocabulary)
P4	English	Year 4	Course-integrated (listening/speaking)
P5	Chinese Language	Year 2	Course-integrated (reading/writing)
P6	Journalism	Year 3	Course-integrated (intercultural speaking)
P7	English	Year 1	App-based (general)
P8	Translation	Year 3	Course-integrated (interpreting)
P9	English Education	Year 2	App-based (comprehensive)
P10	Business	Year 1	Course-integrated (business English)

Here, it is seen that the sample included:

- 1) five students majoring in English or translation.
- 2) three students from non-language disciplines (e.g., Computer Science, Journalism, Business) and two students from other language-related majors (e.g., Japanese, Chinese Literature).

Participants ranged from first-year to fourth-year students, and their learning contexts included both in-class gamified instruction and independent use of gamified language learning applications. The diversity of disciplines and academic levels allowed for a broader range of perspectives on motivation and persistence in different gamified learning environments.

3.3. Data Collection

Data were collected through semi-structured, one-on-one interviews, each lasting approximately 30 to 45 minutes. The interviews were conducted either face-to-face or via video conferencing, depending on the participants' availability. An interview guide was developed based on five key thematic sections:

- 1) Basic Information & Learning Background.
- 2) Gamified Learning Experience.
- 3) Changes in Motivation and Learning Behavior.
- 4) Persistence in Language Learning.
- 5) Reflections and Suggestions. Each interview included 15 open-ended questions to elicit detailed and nuanced responses.

All interviews were recorded (with consent) and later transcribed verbatim for analysis. The use of open-ended prompts encouraged participants to reflect freely on their experiences and insights, while the structure ensured comparability across interviews.

3.4. Data Analysis

Interview transcripts were analyzed using thematic analysis following Braun and Clarke's six-phase model [13]:

- 1) Familiarization with the data through repeated reading.
- 2) Generating initial codes across the data set.
- 3) Searching for themes that represented patterns of meaning.
- 4) Reviewing themes in relation to the coded data.
- 5) Defining and naming themes to clarify conceptual boundaries.
- 6) Producing the report with thematic narratives and supporting excerpts.

Coding was conducted manually and iteratively to capture both common patterns (e.g., motivational triggers, effective gamification mechanisms) and unique individual perspectives. Particular attention was paid to recurring concepts such as task feedback, progress visualization, peer competition, and role immersion. To ensure credibility, the

researcher maintained analytic memos and engaged in peer debriefing with a co-researcher familiar with educational technology research.

3.5. Ethical Considerations

Ethical approval was obtained from the university's research ethics committee. All participants provided informed consent, were assured of confidentiality and anonymity, and were informed of their right to withdraw at any stage without penalty. Pseudonyms were used in all transcripts and reporting.

4. Findings

Based on the thematic analysis of ten in-depth interviews, three overarching themes emerged that illuminate how gamified language learning design influences students' persistence: sources of motivation, mechanisms of sustained engagement, and perceptions of effective and ineffective gamification features. Within each theme, the diversity of student perspectives is captured through multiple quotes and contextualized with percentage-based reporting.

4.1. Sources of Motivation

4.1.1. Intrinsic Motivation through Progress and Achievement

70% of participants (7 out of 10) highlighted that their persistence was primarily fueled by intrinsic motivation, derived from tracking visible progress, leveling up, and completing challenges. These elements offered a psychological sense of competence and personal achievement. For example:

"I didn't just feel like I was doing homework. When I hit the next level in the app, I felt like I had earned something." (P3, Computer Science)

"It was satisfying to see my skill points increase — like I was actually getting stronger at something." (P9, English Education)

Many participants mentioned that these gamified metrics provided instant gratification and a sense of reward. Unlike traditional coursework where progress is abstract and cumulative, gamification allowed students to "see" themselves advance, day by day. For instance:

"In other courses, I don't really know how much I'm improving. But here, I could literally see my vocabulary tree grow. That visual growth motivated me." (P9, English Education)

"Even when I had a bad day, ticking off one small mission gave me a sense of progress." (P4, English)

This sense of "small wins" was especially important for participants who previously lacked confidence in language learning, helping to reframe the process as manageable and rewarding.

4.1.2. Extrinsic Rewards: Badges, Titles, and Rankings

60% of participants (6 out of 10) described how external motivators — including badges, ranking boards, or earned titles — played a significant role, particularly in the initial engagement phase. These systems appealed to students' sense of competition, recognition, or desire for measurable success. As these two participants mentioned:

"I was hooked at first because I wanted to collect all the badges. It was like Pokemon but for grammar." (P1, English)

"The title system made me feel recognized. I worked hard to get promoted from 'beginner' to 'strategic speaker'." (P10, Business)

However, some participants noted that while extrinsic rewards were effective in the short term, their long-term motivation eventually shifted toward internal satisfaction. As P6 stated:

"At first, I did everything for the points. But after a while, it became more about seeing myself improve." (P6, Journalism)

Notably, a few students also reported that overemphasis on rankings could be demotivating when they constantly found themselves at the bottom of the leaderboard.

4.1.3. Contextual Immersion and Role-Based Identity

Half of the participants (5 out of 10) expressed strong appreciation for scenario-based, role-playing formats in gamified courses. These learners described how being assigned "real-world" roles — such as a journalist, negotiator, or translator — allowed them to emotionally and cognitively engage with the content at a deeper level. As P6 and P10 related:

"I felt like I was preparing for my future job when I acted as a news reporter in the simulation." (P6, Journalism)

"Using English to handle a fictional business negotiation felt much more meaningful than just doing grammar exercises." (P10, Business)

These immersive learning tasks also encouraged risk-taking and confidence-building, especially among students who were typically hesitant to speak in class. Taking P2 as an example:

"I don't usually speak up, but when I was 'in role', I forgot my fear and just focused on playing the character well." (P2, Japanese)

For these learners, language use was no longer an abstract goal, but an immediate functional necessity, thus deepening their investment.

4.2. Mechanisms Supporting Learning Persistence

4.2.1. Micro-Tasks and Visualized Progress

80% of participants (8 out of 10) emphasized that task modularity and visible learning paths helped maintain their focus over time. The ability to complete small tasks — like "5-minute drills", "3-word challenges" or "single-topic missions" — was cited as crucial to sustaining engagement amidst other academic and personal obligations. Taking P7 and P4 as the cases:

"When I'm tired, I tell myself I'll just do one mini-task — and then I usually end up doing more." (P7, English)

"Seeing progress bars fill up felt like a to-do list being checked off. It helped me stay consistent." (P4, English)

In contrast to traditional instruction, which often presents language learning as a long, undefined journey, gamified environments offered clear signposts and benchmarks for progress, which is proved by P3's statement:

"Traditional English class feels like climbing a mountain with no top. The gamified system gave me a map." (P3, Computer Science)

4.2.2. Habit Formation through Daily Reminders and Check-Ins

Six participants (60%) credited their learning continuity to the influence of streaks, reminders, and habit-forming mechanics like daily login rewards or "language tree vitality." E.g.:

"The '7-day streak' reward was simple but super effective. I kept going because I didn't want to break the chain." (P2, Japanese)

"When the app said 'Your language tree is wilting', I immediately went back to finish my task. It was silly but motivating." (P9, English Education)

These systems not only kept students coming back but also created a sense of personal accountability over time. For some, even simple visual cues acted as emotional triggers. Just as P7 declared:

"When the interface turned gray to show that I missed a day, I actually felt bad. It made me take the process more seriously." (P7, English)

4.2.3. Peer Accountability and Team Dynamics

Five participants (50%) described collaborative missions and group-based challenges as an essential motivator. In these settings, social relationships and group progress often carried more weight than personal reward.

"We had to submit a group interpreting task. I couldn't let the others down, so I stayed up late to do my part." (P8, Translation)

"It's not just about me anymore. We're a team — so I pushed myself even when I didn't feel like it." (P6, Journalism)

Interestingly, the emotional investment in peers' success fostered stronger persistence behaviors, particularly among students who admitted struggling with self-discipline in solo settings.

4.3. Perceived Effective and Ineffective Gamification Elements

4.3.1. Effective Gamification Features

All 10 participants (100%) identified one or more gamified elements that positively influenced their motivation and persistence. The most commonly cited effective features included:

- 1) Real-time feedback on pronunciation or writing quality.
- 2) Narrative progression through storytelling or character-based challenges.
- 3) Achievement systems (badges, titles, unlocked content).
- 4) Skill maps and growth trees that visualize learning.
- 5) Collaborative group tasks for shared responsibility.

For example:

"Getting instant feedback on my speaking made me improve way faster — it was specific and immediate." (P4, English)

"I couldn't wait to see what the next chapter in the story was about. It felt like I was playing a role in a drama." (P6, Journalism)

Students found these features not only helpful for sustaining focus, but also for enhancing language output, especially in speaking and writing tasks where traditional feedback was often delayed.

4.3.2. Ineffective or Demotivating Elements

However, 7 participants (70%) also pointed out specific features that negatively affected their experience. These included:

- 1) Excessive leaderboard pressure (reported by 4 participants).
- 2) Repetitive or overly simple tasks (3 participants).
- 3) Unclear grading or feedback in group challenges (2 participants).
- 4) Sudden spikes in task difficulty (3 participants).

For instance:

"I stopped caring about the leaderboard — it made me feel like I was always behind, no matter how much I tried." (P5, Chinese Language)

"Some challenges got way too hard all of a sudden. I didn't know how to prepare for them." (P10, Business)

These comments highlight that gamification is not universally beneficial. Its success depends heavily on alignment with learner profiles, clarity in task design, and scaffolded progression.

In a word, the findings of this study reveal that gamified language learning environments can significantly influence students' motivation and persistence through a combination of internalized goal tracking, external incentives, and immersive, task-based learning experiences. Participants reported a wide range of motivational triggers, including both intrinsic factors such as personal growth and extrinsic elements like badges and rankings. The mechanisms that supported long-term engagement included modular task design, habit-forming structures, and collaborative dynamics.

5. Discussion

This study explored the ways in which gamified language learning design impacts students' learning persistence by drawing on the experiences of ten university students from diverse academic backgrounds. The findings reveal that gamification can support sustained language learning behaviors through a variety of motivational, behavioral, and contextual mechanisms. This discussion interprets the key findings in light of existing literature and theoretical frameworks, and reflects on their implications for instructional design and educational practice.

5.1. Gamification as a Dual Motivational Driver

The data strongly support the assertion that gamification can trigger both intrinsic and extrinsic motivation, a finding consistent with Self-Determination Theory and recent empirical work by Fathali and Okada [3,14]. The majority of participants reported that visible progress tracking, small achievements, and mastery-based progression contributed to a sense of competence and autonomy, key drivers of intrinsic motivation. This echoes Wang and Tahir's claim that gamification fosters engagement not only through reward systems but through meaningful experiences that cultivate identity and ownership [7].

However, the findings also show that extrinsic incentives, such as badges, titles, and rankings, played a particularly important role in the early stages of gamified learning. As several participants pointed out, these features helped them get started or stay consistent in the short term, even if their primary motivation later became internalized. This supports Rachels and Rockinson-Szapkiw's argument that extrinsic elements serve as scaffolding tools that initiate engagement, especially for learners with low confidence or discipline [4]. Nevertheless, the study also confirms that overreliance on external rewards — particularly competitive rankings — can backfire by inducing pressure or disengagement in certain learners, as observed by P5 and P10.

5.2. Persistence through Structure, Feedback, and Habit

One of the most notable insights of this study is the importance of task modularity and visualized progress in promoting persistence. Nearly all participants emphasized that short, manageable tasks with immediate feedback enabled them to maintain learning routines even during busy or low-motivation periods. This supports the findings of Su and Cheng and aligns with Smirani and Yamani's recommendation that gamified learning systems should prioritize "low-friction entry points" to accommodate learners' fluctuating attention and schedules [5,15].

Furthermore, this study highlights the role of habit-forming systems, such as daily streaks and reminders, in transforming short-term engagement into long-term behavioral routines. This finding resonates with Koivisto and Hamari's claim that gamification operates not just through reward-based mechanisms, but through behavioral conditioning and environmental cues [1]. Participants described these systems as "nudges" that encouraged consistency and discouraged dropout, suggesting that gamification can foster persistence through design patterns that subtly regulate learner behavior over time.

5.3. Role of Collaboration and Social Accountability

Another theme that emerged prominently in this study is the value of collaborative gamified tasks. Half of the participants identified peer responsibility, shared goals, and team missions as key factors that encouraged them to persist with learning tasks they might otherwise abandon. This supports the social dimension of gamification discussed by Zainuddin et al. and aligns with Llorens et al.'s emphasis on community-driven engagement models [2,12].

Interestingly, the emotional investment in team performance not only motivated task completion, but also fostered a sense of belonging and accountability, particularly among

students who struggled with self-directed learning. This suggests that collaborative gamification elements may compensate for low self-regulation by externalizing responsibility through group dynamics — a valuable insight for educators designing interventions for mixed-ability or low-motivation cohorts.

5.4. Critical Reflections on Gamification Design

While the study affirms the overall positive impact of gamification on learning persistence, it also surfaces important limitations and potential pitfalls. Repetitive task design, inconsistent challenge levels, and unclear assessment criteria were frequently mentioned as demotivating factors. These findings reinforce the caution raised by Zhang and Chen, who argued that poorly designed gamification systems can exacerbate frustration, especially if learners lack control or understanding of task expectations [11].

Additionally, the mixed reactions to leaderboards reflect a broader debate in gamification research: whether competition enhances or undermines learning. In this study, some participants thrived on ranking-based challenges, while others reported anxiety or disengagement. This variation suggests that gamification design must be adaptive and learner-sensitive, offering both competitive and non-competitive pathways for engagement.

5.5. Theoretical and Practical Implications

The findings of this study extend existing gamification research by highlighting how specific design elements translate into sustained learning behaviors, especially in the context of language education. In contrast to previous studies that focused on short-term gains, this study emphasizes the longitudinal dimension of motivation and engagement. It demonstrates that gamified systems are most effective when they:

- 1) Foster autonomy and self-efficacy through transparent feedback and achievable goals.
- 2) Build habitual engagement through cues, reminders, and micro-achievements.
- 3) Integrate collaborative tasks to create social accountability and emotional investment.
- 4) Avoid overgeneralized competitive models, instead allowing personalized engagement routes.

For practitioners, these insights underscore the need for intentional and balanced gamification design — one that leverages motivational science, supports individual learning styles, and sustains engagement across the full learning cycle.

6. Conclusion

6.1. Summary of Key Findings

This study investigated how gamified design influences university students' learning persistence in language education contexts, using semi-structured interviews with ten learners who engaged with gamified platforms either through coursework or independent learning. The findings revealed that:

- 1) Gamification supports persistence by activating both intrinsic and extrinsic motivation, especially through mechanisms such as progress visualization, feedback, rewards, and immersive tasks.
- 2) Micro-task structure, habit-forming features (e.g., daily streaks), and modular progression play a central role in helping students maintain learning consistency.
- 3) Collaborative gamified tasks enhance motivation and commitment by introducing peer accountability and social interaction.
- 4) While gamification generally improves persistence, poorly designed elements — such as overly competitive leaderboards, repetitive activities, or unclear feedback — can demotivate learners.

Together, these insights confirm that gamification, when strategically designed, can serve not only as an engagement enhancer but also as a mechanism for sustaining learner effort over time.

6.2. Limitations and Future Directions

While this study offers valuable insights, it also has several limitations:

- 1) The sample size was limited to ten university students, which restricts the generalizability of findings across broader populations.
- 2) All participants were self-reported learners, and their reflections may be subject to recall bias or social desirability effects.
- 3) The study focused on qualitative experiences without direct observation of learning behavior or performance data.

Future research could address these limitations by:

- 1) Conducting longitudinal mixed-method studies that combine self-reported motivation with behavioral analytics and performance metrics.
- 2) Comparing different types of gamification systems (e.g., mobile apps vs. LMS-integrated tools) to assess their respective impacts on persistence.
- 3) Exploring gamification's effect across age groups, language proficiency levels, and cultural contexts, to uncover more targeted design principles.

By deepening our understanding of how learners experience gamified language learning environments, this study underscores the importance of designing gamification not as a gimmick, but as a strategic and pedagogically grounded practice. With careful implementation, gamified learning can not only increase short-term excitement, but also foster long-term resilience and learning persistence among language learners.

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