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Undergraduate Students Perceptions of Online Gamification for Malay Language Learning: Evidence from a Malaysian Private University

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Abstract

Online gamification is increasingly used to support engagement in digital higher education, yet evidence relating specifically to Malay language learning at university level remains limited. This study examined undergraduates' perceptions of online gamification, their interest in learning Malay, and the academic benefits they associated with gamified learning. A cross-sectional survey was administered to 80 students at UNITAR International University in 2025. Most respondents were enrolled in Malay Language Education (81.3%), and 62.6% reported using digital learning materials or gamified applications often or very often. The questionnaire contained three five-item scales rated on a five-point Likert scale: online gamification experience, learning interest, and perceived academic benefits. Descriptive statistics and Cronbach's alpha were calculated. Respondents reported highly positive perceptions of online gamification (overall item mean = 4.39), high learning interest (4.34), and positive perceived academic benefits (4.19). The highest-rated items concerned enjoyment when lecturers used gamification (M = 4.47, SD = 0.64) and easier understanding of Malay language concepts (M = 4.39, SD = 0.67). Internal consistency was excellent across the three scales (alpha = .917-.935). The findings indicate strong student acceptance of gamified learning and suggest that enjoyment, interactivity, immediate feedback, and structured challenge may support interest in Malay language learning. However, the study measured self-reported perceptions rather than verified academic achievement, used a single-institution non-probability sample, and did not administer a controlled intervention. The results should therefore be interpreted as descriptive evidence, not as proof that gamification caused improved performance. Multi-institutional experimental or longitudinal research using validated instruments and objective learning outcomes is recommended.

Keywords: Gamification, Malay Language Education, Learning Interest, Perceived Academic Benefits, Higher Education, Malaysia

Introduction

Digital learning has become central to contemporary higher education, with institutions expected to provide learning experiences that are interactive, flexible, and responsive to students' technology-rich lives. Malaysia's Digital Education Policy similarly places emphasis on digitally competent learners, educators, and institutions, and on strengthening the use of technology to improve educational quality and access (Ministry of Education Malaysia, 2023). Within this environment, gamification has attracted sustained interest as a way of redesigning learning activities rather than merely transferring conventional lectures to an online platform.

Gamification is commonly defined as the use of game-design elements in non-game contexts (Deterding et al., 2011). In education, these elements may include points, levels, badges, leaderboards, challenges, progress indicators, immediate feedback, time limits, narratives, and opportunities for collaboration. Gamification is distinct from game-based learning: the former adds selected game-design features to an existing learning activity, whereas the latter uses a complete game as the learning environment. Systematic reviews of higher education identify points, badges, leaderboards, levels, feedback, and challenges as the most frequently used features, while also warning that the educational value of these features depends on pedagogical alignment and implementation quality (Khaldi et al., 2023; Zeybek & Saygı, 2024).

The empirical literature is broadly encouraging but not uniform. Earlier meta-analyses reported small-to-moderate positive effects on cognitive, motivational, and behavioural outcomes (Bai et al., 2020; Sailer & Homner, 2020). A more recent synthesis of 22 experimental studies conducted between 2008 and 2023 found a moderate positive effect on academic performance (Hedges' g = 0.782), but also showed that outcomes varied by educational level, subject, setting, and design features (Zeng et al., 2024). A 2026 higher-education meta-analysis likewise reported a large pooled effect while documenting extremely high heterogeneity, reinforcing that gamification is not a universally effective treatment and should be designed for a specific context and learner group (Gyedu et al., 2026).

Language learning is a promising context for gamification because it requires repeated practice, rapid feedback, sustained attention, and willingness to make and correct errors. Quiz platforms such as Kahoot!, Quizizz, and Wordwall can provide low-stakes practice, immediate confirmation, and visible progress. A review of 93 studies on Kahoot! found generally positive effects on learning performance, classroom dynamics, and learner attitudes, although technical problems, time pressure, and overemphasis on competition were recurrent concerns (Wang & Tahir, 2020). In Malaysia, research on Malay language gamification has largely focused on school learners. Mat Husin (2023), for example, reported high interest among lower-secondary students, while Nasip and Zulkiply (2024) found that primary pupils exposed to gamified instruction outperformed those receiving traditional instruction in Malay reading comprehension. Comparable evidence among university students specialising in Malay language education remains limited.

The present study addresses this contextual gap by examining how UNITAR undergraduates perceived online gamification in Malay language learning. Importantly, the source dataset was a cross-sectional self-report survey rather than a controlled teaching intervention. Consequently, the present article is deliberately framed around perceptions, learning

interest, and perceived academic benefits. It does not claim that gamification caused changes in verified grades or test scores.

Literature Review and Theoretical Framework

Gamification, Motivation, and Learning

Positive gamification effects are often explained through Self-Determination Theory (SDT), which proposes that high-quality motivation is supported when learning environments satisfy the needs for autonomy, competence, and relatedness (Ryan & Deci, 2020). Gamified activities may support autonomy by offering meaningful choices or multiple pathways; competence through clear goals, progressive difficulty, visible progress, and informative feedback; and relatedness through team tasks, peer comparison, and shared challenges. Experimental evidence indicates that different game-design elements can satisfy different psychological needs, which means that selecting features solely because they are popular may be less effective than matching them to the intended motivational process (Sailer et al., 2017).

Flow Theory provides a complementary explanation. Flow describes an absorbed state of concentration that is more likely when learners encounter clear goals, immediate feedback, and an appropriate balance between challenge and skill (Csikszentmihalyi, 1990). Well-designed gamified tasks can create short cycles of challenge, action, feedback, and adjustment. Tasks that are too easy may become repetitive, whereas tasks that are too difficult may produce anxiety or withdrawal. Adaptive difficulty, optional hints, and multiple attempts are therefore more educationally useful than points and rankings alone.

The Theory of Gamified Learning further cautions that game elements do not improve learning directly. Instead, they influence learning-relevant behaviours and attitudes - such as time on task, effort, persistence, attention, or strategy use - which may then influence achievement (Landers, 2014). This distinction is important for interpreting perception data. Students may enjoy a gamified class, but enjoyment becomes educationally meaningful only when it supports productive cognitive activity and appropriate practice.

Gamification in Higher Education and Language Learning

Reviews of gamification in higher education show substantial variation in platform, duration, learning design, and outcome measurement. Many studies are short, rely heavily on self-report, or combine several game elements at once, making it difficult to identify which element produced an observed effect (Dichev & Dicheva, 2017; Khaldi et al., 2023). Meta-analytic findings therefore support cautious optimism rather than a simple claim that gamification always works. Sailer and Homner (2020) found significant average effects across cognitive, motivational, and behavioural outcomes, but the motivational and behavioural effects were less robust in higher-rigour subsets. Zeng et al. (2024) similarly found that contextual and design moderators influenced academic outcomes.

For language education, gamification can make repetitive practice more tolerable and can reduce the perceived cost of making mistakes by providing low-stakes attempts. It can also increase the frequency of retrieval practice and enable instructors to identify misconceptions immediately. Nevertheless, competitive leaderboards may discourage lower-performing learners, speed-based quizzes may privilege rapid recall over deep language processing, and extrinsic rewards may displace attention from communicative competence. Effective

language gamification should therefore combine enjoyment with explanatory feedback, opportunities for reflection, inclusive modes of participation, and tasks that require meaningful language use.

Related Malaysian qualitative evidence highlights the need to distinguish unregulated recreational gaming from purposefully designed learning games. Ani et al. (2023) interviewed 30 students aged 10-17 from public and private schools in Kuala Lumpur. Participants described how prolonged late-night gaming could displace homework and revision, reduce sleep and classroom focus, and coincide with declining subject grades. At the same time, they perceived classroom-based online learning games as capable of motivating learning, supporting language development, reducing stress, and strengthening rapid decision-making. Although the study examined online games rather than gamification as a discrete instructional design, it reinforces a central principle: educational benefits depend on purpose, time regulation, and pedagogical structure. Gamified Malay-language activities should therefore be curriculum-aligned, time-bounded, and accompanied by meaningful feedback rather than reproducing unrestricted recreational play.

Evidence from technology-supported language learning in Malaysia also provides relevant contextual support. Selvarajoo et al. (2024) surveyed 50 secondary school students in Petaling Jaya and found that most respondents perceived online technology as improving speaking and reading skills, supporting the acquisition of new skills, and deepening understanding through instructional materials, activities, and discussions. Although the study examined English rather than Malay and technology use more broadly rather than gamification specifically, its findings reinforce the value of engaging, interactive digital environments for language learning while also highlighting the importance of learner differences.

In Malay language education, available Malaysian studies suggest positive acceptance and potential learning benefits, but most evidence has been produced in primary or secondary settings (Mat Husin, 2023; Nasip & Zulkiply, 2024). University learners differ in age, autonomy, assessment demands, and disciplinary expectations. They may respond positively to interactive quizzes while also requiring activities that develop argumentation, grammatical reasoning, discourse analysis, and professional teaching competence. Examining their perceptions is therefore a useful first step before implementing controlled outcome studies.

Research Questions

The study was guided by four research questions:

RQ1. How do undergraduates perceive the use of online gamification in Malay language learning?

RQ2. What level of learning interest do students report when gamification is used?

RQ3. What academic benefits do students perceive from gamified Malay language learning?

RQ4. Do the three questionnaire scales demonstrate acceptable internal consistency?

Method

Research Design and Setting

A quantitative, cross-sectional survey design was used. Data were collected online in 2025 from undergraduates at UNITAR International University, Malaysia. The design was appropriate for describing students' current experiences and perceptions of digital gamification. No gamified intervention was assigned by the researchers, and no pre-test,

post-test, or verified course-grade data were collected. The study therefore reports associations implied by students' perceptions only at a descriptive level and avoids causal interpretation.

Participants and Sampling

The analysed sample comprised 80 students. Recruitment occurred through online class communication channels and produced a non-probability volunteer sample. Although the original project focused on Malay Language Education, 65 respondents (81.3%) were from that programme and 15 (18.8%) were from Mathematics Education, Teaching English as a Second Language (TESL), or other programmes. The broader sample is retained transparently because the available dataset did not provide a defensible basis for post hoc exclusion. Consequently, the results are best interpreted as evidence from a predominantly Malay Language Education sample rather than from Malay language specialists exclusively.

Table 1
Participant characteristics (N = 80)

Characteristic	**n**	**%**
Gender		
Male	18	22.5
Female	62	77.5
Year of study		
Year 1	6	7.5
Year 2	23	28.7
Year 3	32	40.0
Year 4	19	23.8
Programme		
Malay Language Education	65	81.3
Mathematics Education	1	1.3
TESL	3	3.8
Other	11	13.8
Use of digital learning materials/applications		
Never	3	3.8
Rarely	4	5.0
Sometimes	23	28.8
Often	29	36.3
Very often	21	26.3

Characteristic	n	%
Digital-device proficiency		
Moderate	12	15.0
Proficient	38	47.5
Highly proficient	30	37.5

Note. Percentages may not total exactly 100.0 because of rounding.

Instrument

The online questionnaire contained demographic questions and 15 substantive items rated from 1 (strongly disagree) to 5 (strongly agree). The items were organised into three five-item scales: (a) online gamification experience, covering enjoyment, participation, motivation, interactivity, and classroom climate; (b) learning interest, covering interest in Malay, conceptual understanding, enjoyment, continuing motivation, and revision frequency; and (c) perceived academic benefits, covering perceived marks, memory, focus, examination confidence, and thinking or decision-making skills. Common platforms named in the questionnaire included Kahoot!, Quizizz, and Wordwall.

The third scale is labelled perceived academic benefits in this article because its items asked students what they believed gamification did for their learning. It did not contain independently verified grades, standardised test scores, or performance records. This terminology prevents self-reported impressions from being presented as objective academic achievement.

Data Collection and Ethical Considerations

The questionnaire was distributed through Google Forms and online class communication channels. Responses were exported for analysis. Participation was described as voluntary, and data were reported in aggregate without identifying individual respondents. Before journal submission, the authors should provide the name of the institutional approving body, the approval or exemption reference, the consent procedure, and the data-retention arrangements in accordance with the target journal's research-ethics requirements.

Data Analysis

Frequencies and percentages were used to describe the sample. Item means and standard deviations summarised responses to the 15 Likert items. An overall descriptive mean was calculated for each scale by averaging its five item means. Cronbach's alpha assessed internal consistency. Construct-level correlation or regression analyses were not reported because the available project output contained item-by-item correlation matrices, including diagonal self-correlations of 1.000, rather than valid correlations between scale composites. Treating those self-correlations as evidence of relationships among constructs would be statistically incorrect.

Results

Respondent Profile

As shown in Table 1, most respondents were women (77.5%) and were in their second or third year of study (68.7%). Malay Language Education students represented 81.3% of the sample.

Digital readiness was high: 62.6% used digital learning materials or applications often or very often, while 85.0% described themselves as proficient or highly proficient in using digital devices. The results therefore reflect a sample with substantial prior exposure to digital learning.

Descriptive Findings

Table 2

Item-level descriptive statistics

Scale	Item	M	SD
Online gamification experience	I enjoy lessons when the lecturer uses gamification elements.	4.47	0.636
Online gamification experience	I am interested in participating because the gamification elements are advanced and attractive.	4.39	0.646
Online gamification experience	My self-motivation increases when the lecturer uses gamification in academic activities.	4.31	0.704
Online gamification experience	Gamification elements can make the class more interactive.	4.40	0.628
Online gamification experience	The learning environment becomes more conducive when gamification is used.	4.38	0.753
Learning interest	I become more interested in learning Malay when gamified applications are used.	4.34	0.693
Learning interest	Gamified applications help me understand Malay language concepts more easily.	4.39	0.665
Learning interest	I like gamified applications because they make Malay language learning more enjoyable.	4.38	0.736
Learning interest	Gamified applications increase my motivation to continue learning Malay.	4.38	0.663
Learning interest	I revise Malay language lessons more frequently when I use gamified applications.	4.19	0.797
Perceived academic benefits	Gamified applications help me obtain higher Malay language marks than when I do not use them.	4.15	0.748
Perceived academic benefits	I can remember facts and lesson content more easily through gamified activities.	4.21	0.758

Scale	Item	M	SD
Perceived academic benefits	I focus better during teaching and learning when the lecturer uses gamified applications.	4.20	0.701
Perceived academic benefits	I feel more confident answering examination questions after learning through gamification.	4.14	0.775
Perceived academic benefits	Gamified applications improve my thinking and decision-making skills in learning.	4.25	0.684

Note. Responses ranged from 1 (strongly disagree) to 5 (strongly agree). M = mean; SD = standard deviation.

Perceptions of the online gamification experience were highly positive. Item means ranged from 4.31 to 4.47, with an overall item mean of 4.39. Enjoyment when lecturers used gamification was the highest-rated statement (M = 4.47, SD = 0.64). The lowest item in this scale concerned increased self-motivation (M = 4.31, SD = 0.70), although the mean remained well above the scale midpoint.

Learning interest was also high, with an overall item mean of 4.34 and item means ranging from 4.19 to 4.39. Respondents most strongly agreed that gamified applications helped them understand Malay language concepts more easily (M = 4.39, SD = 0.67). More frequent revision was rated lowest (M = 4.19, SD = 0.80). This difference suggests that positive classroom experiences and perceived understanding may not automatically produce equally strong changes in independent study habits.

Perceived academic benefits had an overall item mean of 4.19. The highest-rated benefit was improvement in thinking and decision-making skills (M = 4.25, SD = 0.68), followed by easier recall of facts and lesson content (M = 4.21, SD = 0.76). Confidence in answering examination questions was the lowest-rated item (M = 4.14, SD = 0.78). All means nevertheless indicated generally positive perceptions.

Internal Consistency

Table 3

Scale summary and internal consistency

Scale	Items	Overall item mean	Item SD range	Alpha
Online gamification experience	5	4.39	0.628-0.753	.927
Learning interest	5	4.34	0.663-0.797	.935
Perceived academic benefits	5	4.19	0.684-0.775	.917

Note. Alpha refers to Cronbach's alpha. The overall item mean is the arithmetic mean of the five reported item means for each scale.

Cronbach's alpha values ranged from .917 to .935, indicating excellent internal consistency within this sample. The values show that the items in each scale produced highly consistent responses. They do not, by themselves, establish construct validity, criterion validity, or causal relationships among the scales.

Discussion

Strong Acceptance of Online Gamification

The first major finding was the very favourable perception of online gamification. Enjoyment received the highest item mean in the study, while interactivity and a conducive learning environment were also rated strongly. These findings are consistent with the argument that rapid feedback, visible progress, manageable challenge, and social participation can make digital activities more engaging. They also align with prior reviews in which students commonly described gamified learning as enjoyable and motivating (Bai et al., 2020; Wang & Tahir, 2020).

SDT provides a useful interpretation. Immediate feedback and progressive tasks can support competence, while opportunities to choose attempts, pace, or challenge can support autonomy. Collaborative quizzes or team missions can support relatedness. However, these motivational benefits are not guaranteed by a platform itself. A leaderboard that publicly ranks struggling students, for example, may weaken competence and relatedness. Lecturers should therefore use game elements selectively and provide alternative participation modes when competition creates discomfort.

Learning Interest and Conceptual Understanding

Students reported high learning interest, and the strongest item concerned easier understanding of Malay language concepts. This result is educationally important because it moves beyond enjoyment and points towards perceived cognitive support. Gamified questions can break complex material into shorter retrieval cycles, provide immediate correction, and expose misconceptions before formal assessment. In Malay language courses, these features may be useful for grammar, vocabulary, morphology, syntax, discourse conventions, and reading comprehension.

The result is compatible with Malaysian evidence. Mat Husin (2023) found high interest in gamified Malay language materials among lower-secondary students, and Nasip and Zulkiply (2024) reported higher Malay reading-comprehension scores in a gamified primary-school group than in a traditional group. The present university sample extends this discussion by showing that positive acceptance is not confined to school learners. Nevertheless, it does not replicate the experimental evidence because no objective comprehension test was administered.

Revision frequency was the lowest-rated interest item. Although still positive, this pattern suggests that a stimulating classroom activity may not be sufficient to develop sustained self-regulated learning. To encourage transfer beyond the lesson, lecturers could use spaced challenges, cumulative question banks, delayed feedback activities, reflective error logs, or optional mastery levels that reward improvement rather than one-time speed.

Perceived Academic Benefits and the Limits of Self-Report

Respondents perceived benefits for thinking, memory, focus, examination confidence, and marks. These perceptions are plausible in light of meta-analytic evidence that gamification can support learning outcomes on average (Sailer & Homner, 2020; Zeng et al., 2024). The highest-rated item in this scale - thinking and decision-making - may reflect the value of rapid choices, problem solving, and immediate consequences within gamified tasks.

However, perceived benefit is not the same as measured achievement. A student may feel more focused or believe that a quiz improved marks without a corresponding change in an independently assessed outcome. Conversely, a challenging activity may feel less enjoyable while still producing substantial learning. The present findings should therefore be interpreted as evidence of acceptability and perceived usefulness. Claims about academic effectiveness require pre-test/post-test designs, comparison groups, objective assessment scores, and adequate control of prior achievement.

This cautious interpretation is consistent with the wider literature. Recent meta-analyses show positive average effects but also substantial heterogeneity across studies (Gyedu et al., 2026; Zeng et al., 2024). The practical question is not simply whether gamification works, but which design works, for whom, for which learning objective, and over what period.

Implications for Malay Language Teaching

The findings support four practical principles for university teaching:

Align mechanics with learning outcomes. Points and badges should recognise meaningful language performance - such as accurate analysis, effective explanation, revision after feedback, or collaborative problem solving - rather than mere attendance or speed.

Prioritise explanatory feedback. After each item, students should see why an answer is correct or incorrect, with examples and links to the relevant language rule. Feedback is more valuable than a score alone.

Balance competition with inclusion. Team modes, anonymous response options, mastery paths, and recognition of improvement can reduce the risk that public rankings demotivate less-confident learners.

Design for continuity and access. Gamified activities should be brief, repeatable, mobile-friendly, and usable under variable internet conditions. A low-bandwidth alternative

should be available, and activities should form part of a coherent sequence rather than isolated entertainment.

At institutional level, professional development should focus on learning design rather than only platform operation. Lecturers need support in writing high-quality questions, interpreting response data, managing competition, ensuring accessibility, and connecting gamified activities to assessment. Such support is consistent with the capacity-building aims of Malaysia's Digital Education Policy (Ministry of Education Malaysia, 2023).

Limitations and Future Research

Several limitations constrain the interpretation of this study. First, the sample was small, voluntary, and drawn from a single private university. It was also predominantly female and included 15 students outside Malay Language Education. The findings cannot be generalised to all UNITAR students or to Malaysian university students more broadly. Second, the study relied entirely on self-report and may be affected by social-desirability bias, acquiescence, common-method variance, and respondents' general enthusiasm for technology.

Third, no controlled gamification intervention, baseline measure, comparison group, or objective achievement outcome was available. The study cannot establish temporal order or causation. Fourth, the scales demonstrated high internal consistency, but evidence of content validity, factor structure, convergent validity, and measurement invariance was not reported. Very high alpha values can also arise when items are similar in wording. Fifth, the available project output did not include valid construct-level correlations; therefore, hypotheses about relationships among gamification, interest, and performance were not tested in this article.

Future research should recruit larger multi-institutional samples and use validated scales. A strong follow-up design would randomly assign comparable classes to pedagogically aligned gamified and non-gamified instruction, collect pre-test and post-test scores, and include delayed retention measures. Researchers should calculate scale composites, assess factor structure through confirmatory factor analysis, and use regression or structural equation modelling only after assumptions and measurement quality are established. Qualitative interviews or classroom observations could explain why particular game elements support or undermine autonomy, competence, relatedness, and flow. Longitudinal work is especially important because short-term novelty may not produce durable study habits or achievement.

Conclusion

UNITAR undergraduates reported highly positive perceptions of online gamification in Malay language learning. They particularly valued enjoyment, interactivity, and easier understanding of language concepts, and they perceived benefits for focus, memory, and thinking skills. The three survey scales also showed excellent internal consistency. These findings support the educational acceptability of carefully designed gamified activities in university Malay language courses.

The evidence should nevertheless be interpreted within the limits of the design. The study describes what students believed and experienced; it does not demonstrate that gamification caused higher academic performance. Publication and future implementation should retain this distinction. The most defensible conclusion is that gamification is a promising, well-

accepted pedagogical approach whose academic effectiveness in this context now requires rigorous testing with objective outcomes and stronger research designs.

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Conflict of Interest Statement

The author declares that there are no conflicts of interest regarding the publication of this study.

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