

Perception And Awareness of Gamified Library Services Among Lis Students of Tripura University

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Abstract - This study examines the perception and awareness of gamified library services among Library and Information Science (LIS) students at Tripura University, Agartala. Gamification has emerged as an effective approach to enhance user engagement in academic libraries, yet research focusing on LIS students remains limited. A descriptive survey was conducted among 42 BLIS and MLIS students using a structured questionnaire containing 15 Likert-scale items. Data were analysed using JASP through descriptive statistics, Cronbach's alpha, chi-square, Mann-Whitney U, and Pearson correlation tests. Findings revealed that only 28.57% of respondents were fully aware of gamification, while 38.10% had no prior awareness. The perception scale demonstrated excellent reliability ($\alpha = .902$), with an overall mean score of 4.42, indicating highly positive attitudes. Quiz-based activities and interactive library services received the highest ratings. BLIS students showed significantly greater awareness than MLIS students, while no significant differences were observed by gender or programme level. The study provides valuable insights for LIS education and library service innovation.

Keywords: *Gamification; Library Services; LIS Students; User Perception; Information Literacy; Tripura University; Academic Libraries; Digital Engagement; India; Survey*

1. INTRODUCTION

Academic libraries worldwide are navigating an era of rapid and irreversible transformation. The generation of digital information, the barrier of mobile and online platforms in daily life, and the shifting expectations of digital native student populations have collectively compelled libraries to rethink not only the services they offer but the manner in which those services are delivered, communicated, and experienced. Against this backdrop, gamification broadly defined as the deliberate integration of game design elements such as points, badges, leaderboards, progress bars, quests, and narratives into non game contexts has emerged as a prominent innovation strategy, promising to revive user engagement by harnessing the motivational architecture that has long made games among the most compelling voluntary human activities (Rathod, 2025; Bessette, 2025).

Within the library domain, gamification has been applied across a diverse spectrum of service contexts: library orientation programmes designed to reduce user anxiety and build navigational confidence (Reed & Miller, 2020; Scicluna, 2026), information literacy instruction aimed at improving student competencies in source evaluation, research strategy, and citation (Nwaobasi et al., 2026; Sureephong et al., 2024), reading promotion initiatives targeting youth and undergraduate populations (Downie & Proulx, 2022; Hasani et al., 2026), digital library system design intended to improve resource discovery and engagement (Aminah et al., 2026; Li et al., 2022) and library marketing efforts leveraging user generated content and social mechanics (Maranchak & Maranchak, 2023). The empirical evidence, while still maturing, increasingly supports the proposition that carefully designed gamification meaningfully improves engagement, reduces library anxiety, and enhances learning outcomes.

Library and Information Science students occupy an especially significant position within this gamification landscape. As postgraduate students enrolled in the professional formation programme that will shape their identities and competencies as future librarians, they are simultaneously current users of library services and prospective architects of those services. Their awareness of gamification as a concept, their perceptions of its utility and desirability in library service contexts, and their understanding of the barriers to its implementation are, therefore, of both professional and pedagogical importance.

Despite the rapid growth of the global gamification and library literature, no published study has examined gamification perception and awareness specifically among LIS students in India's Northeast. This study addresses that gap. Drawing on primary survey data collected from 42 LIS students at Tripura University and grounded in a systematic review of 36 directly relevant peer-reviewed publications spanning 2020 to 2026, the study examines

the levels of awareness, prevailing perceptions, preferred gamification elements, and perceived barriers characterising this population.

1.1 Objectives of the Study

- i. To assess the level of awareness of gamification and gamified library services among LIS students at Tripura University.
- ii. To examine perceptions of LIS students regarding the potential effectiveness of gamification in library service delivery.
- iii. To identify the gamification elements that LIS students consider most engaging and relevant for library contexts.
- iv. To recommend evidence based strategies for integrating gamification into LIS education and library service design.

1.3 Significance of the Study

The significance of this study is threefold. First, it contributes empirical evidence from an underrepresented geographic and institutional context Northeast India, to a literature that has been dominated by North American, European, and East Asian case studies. Second, by focusing on LIS students rather than general library users, it illuminates the professional formation dimension of gamification awareness, with direct implications for LIS curriculum design. Third, the study provides actionable intelligence for library administrators and policymakers seeking to align library service innovation with the expectations and professional knowledge of the next generation of library professionals.

2. REVIEW OF LITERATURE

The following review synthesises 36 peer-reviewed publications spanning 2020 to 2026, selected specifically for their relevance to gamification in library and information science contexts. The review is organised thematically to illuminate the conceptual, empirical, and applied dimensions of gamification as they bear on the present study.

2.1 Conceptual Foundations of Gamification

Gamification entered mainstream academic discourse following Deterding et al.'s influential 2011 conceptualisation, and has since been elaborated across education, health, marketing, and library science. Rathod (2025) provides a comprehensive contemporary synthesis, positioning gamification as a deliberate strategy for user engagement and skill development in library environments, distinguishing it from game based learning and serious games. Theoretical grounding for gamification draws primarily from Self-Determination Theory (SDT), which holds that sustained motivation is generated when three basic psychological needs autonomy, competence, and relatedness are satisfied (Shlenova, 2021; BasirianJahromi et al., 2023). The Mechanics Dynamics Aesthetics (MDA) framework has been adopted by Aminah et al. (2026) as both a design and evaluation template for gamified digital library systems. Tyni et al. (2022), through a scientometric analysis, provide quantitative mapping of the rewards research landscape, revealing that points, badges, and leaderboards remain the most extensively studied reward types despite growing evidence that narrative and social rewards may produce more sustained engagement.

2.2 Gamification in Library Orientation and Anxiety Reduction

Library orientation is among the most extensively documented application domains for gamification. Reed and Miller (2020) demonstrate that game-based orientation activities significantly increased student engagement compared to conventional tours. Sureephong et al. (2024) demonstrate that immersive, game-informed metaverse environments produce significant reductions in library anxiety alongside meaningful improvements in knowledge acquisition. Scicluna (2026), grounding analysis in Social Exchange Theory, demonstrates that gamified orientations function as initiatory social transactions that measurably reduce anxiety and increase willingness to return providing robust empirical validation for gamification in this context.

2.3 Gamification in Information Literacy and User Education

Information literacy instruction represents a core application domain for library gamification, with growing empirical evidence of its educational efficacy. Nwaobasi et al. (2026) document systematic improvements in

student competencies in source evaluation, citation practices, and research strategy in Nigerian academic libraries. Nakiyemba (2024) provides systematic evidence for gamification's positive impact on knowledge acquisition. Gorban and Skachenko (2020) document positive user responses to Kahoot based library instruction, while Rafli and Firdaus (2025) demonstrate that gamified assessment platforms effectively integrate language assessment with skills development models readily transferable to information literacy assessment contexts.

2.4 Gamification for Reading Promotion and Youth Engagement

Reading promotion is among the most historically rooted applications of gamification in libraries. Downie and Proulx (2022) find that gamified reading programmes produce significant improvements in reading frequency and enjoyment among young participants. Hasani et al. (2026) provide experimental evidence that gamified e-book reading produced significantly higher engagement and comprehension than non-gamified reading. Haidai (2025) identifies gamification as a central technology for digital transformation of children's libraries, while Cernamorit (2024, 2025) documents how public libraries are incorporating playful elements into cultural programming across Romanian contexts.

2.5 Gamification in Digital Library Systems and Service Design

The design of gamified digital library systems has emerged as a distinct research stream. Aminah et al. (2026) demonstrate that a gamified system integrating points, badges, leaderboards, and challenges more than tripled average monthly usage at an Indonesian university library. Oyinola et al. (2024) identify user centred design principles and institutional readiness factors as critical success conditions. Li et al. (2022) document that infrastructure gaps, limited professional expertise, and insufficient user research are systemic barriers in Chinese university libraries findings consonant with patterns anticipated in the present Indian study.

2.6 Gamification in LIS Education and Professional Development

The professional formation of future librarians constitutes a critical arena for gamification scholarship. Shlenova (2021) demonstrates that gamified instruction in LIS programmes produced significant improvements in knowledge retention, skill application, and professional motivation compared to conventional instruction, distinguishing between gamification as curriculum content and gamification as pedagogical method. Hanshew and Alley (2021) document a distinctive deployment of game mechanics to energise the library strategic planning process itself illustrating that gamification's utility extends beyond user-facing services to encompass internal organisational processes.

2.7 Barriers and Challenges to Library Gamification

The literature consistently surfaces a set of barriers constraining gamification adoption. Infrastructure and technology access emerge as primary obstacles (Li et al., 2022; Oyinola et al., 2024). Professional capacity and training represent a second critical barrier: many LIS professionals lack gamification design competencies, and training programmes have been slow to address this deficit (Shlenova, 2021; Khademi Zare et al., 2024). Institutional priority and administrative support constitute a third barrier cluster. The risk of superficiality where gamification produces short-term engagement spikes without fostering deeper library relationships underscores that design quality and evaluative rigour are indispensable to sustainable gamification.

3. METHODOLOGY

3.1 Research Design

This study adopts a descriptive survey research design, appropriate for investigations seeking to systematically describe and analyse the characteristics, attitudes, and perceptions of a defined population without experimental intervention (Bessette, 2025; Durodolu et al., 2025). The survey approach enables the collection of structured quantitative data supporting both descriptive profiling and inferential statistical analysis. Primary survey data are complemented by a systematic literature review providing the theoretical and comparative framework within which findings are interpreted.

3.2 Study Population and Sampling

The study population comprised all LIS students enrolled in 2025-2026 at the Department of Library and Information Science, Tripura University, across the programme levels - Bachelor of Library and Information Science (BLIS) and Master of Library and Information Science (MLIS). A total census approach was adopted. After screening for completeness, a final sample of N = 42 respondents was retained for analysis, comprising 22

BLIS students (52.38%) and 20 MLIS students (47.62%). All respondents were enrolled in the second semester at the time of data collection.

3.3 Research Instrument

A structured self-administered questionnaire served as the primary data collection instrument, designed in four sections: (i) Demographic Profile- programme level, gender, and age group, (ii) Awareness Assessment- a single categorical item measuring prior familiarity with gamification at three levels (fully aware, partially aware, not aware), (iii) Perception Items- 15 five-point Likert-scale statements (1 = Strongly Disagree; 5 = Strongly Agree) assessing perceptions of gamification's utility across engagement, behavioural intention, and learning outcome dimensions; and (iv) Open-Ended Recommendations- an optional item inviting qualitative comment on game-based library activities. The instrument was developed following review of validated questionnaires from comparable studies (Durodolu et al., 2025; Khademi Zare et al., 2024; Nakiyemba, 2024).

3.4 Data Collection

Data were collected during a defined academic period (February 2026) through direct administration of questionnaires to LIS students within the department at Tripura University. Participation was entirely voluntary, and written informed consent was obtained from all respondents. Questionnaires were reviewed for completeness upon return, incomplete responses were excluded from analysis.

3.5 Data Analysis

Data were coded, entered, and analysed using the JASP. Descriptive statistics including frequency counts, percentages, means (M), and standard deviations (SD) were computed for all major variables. Cronbach's alpha (α) was computed to assess the internal consistency reliability of the 15-item perception scale. Chi-square (χ^2) tests of independence examined associations between demographic characteristics and awareness levels. Mann-Whitney U tests compared perception score distributions across gender and programme groups, as the assumption of normal distribution was not confirmed for all sub-groups. Pearson product-moment correlation (r) examined the association between awareness score and overall perception score. Thematic analysis was applied to open-ended responses.

4. RESULTS AND DISCUSSION

4.1 Demographic Profile of Respondents

A total of 42 LIS students participated in the study, representing a complete census of the accessible student population. Table 1 presents the demographic characteristics of the respondent pool. Gender representation was perfectly equal, with 21 male (50.00%) and 21 female (50.00%) respondents. The dominant age group was 24–26 years (n = 25, 59.52%), followed by 21–23 years (n = 14, 33.33%) and above 26 years (n = 3, 7.14%). Programme representation was approximately balanced, with 22 BLIS students (52.38%) and 20 MLIS students (47.62%). All respondents were enrolled in the second semester, consistent with the cross-sectional nature of the survey. The predominantly 24–26 age profile characteristic of late-undergraduate and early-postgraduate student cohorts is consistent with digital-native or near-digital-native generational membership, providing important context for interpreting awareness and perception findings.

Table 1

Demographic Profile of Respondents (N = 42)

Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	21	50.00
	Female	21	50.00
Age Group	21–23 years	14	33.33
	24–26 years	25	59.52
	Above 26 years	3	7.14
Programme	BLIS	22	52.38

	MLIS	20	47.62
Current Semester	Second	42	100.00
Total		42	100.00

4.2 Awareness of Gamification and Gamified Library Services

The awareness profile of respondents is presented in Table 2 and Figure 1. Results reveal a three-tiered distribution: only 12 respondents (28.57%) reported full prior awareness of gamification, 14 (33.33%) indicated partial familiarity (had heard the term but did not understand it clearly), and 16 (38.10%) reported no prior awareness whatsoever. Cumulatively, 61.90% of respondents had some prior exposure to the concept, but a majority of these possessed only surface-level acquaintance. This two-tiered pattern widespread terminological encounter without depth of understanding closely mirrors findings documented among library staff and users in Iran (Khademi Zare et al., 2024), Nigeria (Durodolu et al., 2025), and Ukraine (Shlenova, 2021), suggesting that limited gamification literacy in LIS professional formation is a cross-national phenomenon and not confined to developing-region contexts.

To examine whether demographic variables were associated with awareness level, chi-square tests of independence were conducted using a binary classification of awareness (Aware = 'Yes, I was aware'; Not Fully Aware = the two remaining categories combined). As shown in Table 3, no statistically significant association was found between awareness and gender [$\chi^2(1, N = 42) = 2.917, p = .088$]. However, awareness was significantly associated with programme of study [$\chi^2(1, N = 42) = 4.832, p = .028$] (Table 4; Figure 2): 45.5% of BLIS students ($n = 10$ out of 22) were fully aware of gamification, compared with only 10.0% of MLIS students ($n = 2$ out of 20). This differential with undergraduate BLIS students demonstrating significantly higher awareness than postgraduate MLIS students is contradictory from a professional development perspective, but may reflect generational and peer-culture differences in familiarity with gaming platforms and digital engagement tools, consistent with the age-distribution finding that BLIS respondents skewed younger. It also suggests that the MLIS curriculum at Tripura University has not yet systematically integrated gamification content, an observation that aligns with Shlenova's (2021) call for explicit gamification literacy development in LIS professional training.

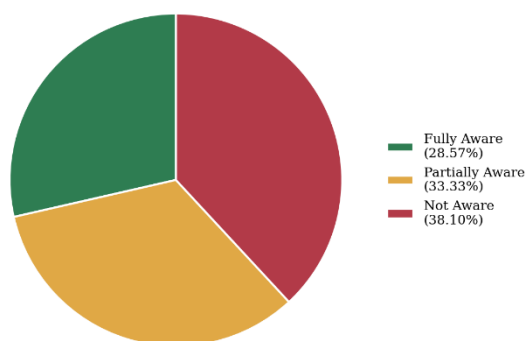
Table 2

Level of Awareness of Gamification Among LIS Students (N = 42)

Level of Awareness	Frequency (f)	Percentage (%)
Yes, I was aware	12	28.57
I had heard the term but did not understand it clearly	14	33.33
No, I was not aware	16	38.10
Total	42	100.00

Note. Response to the question: "Before this survey, were you familiar with the concept of gamification?"

Figure 1



Prior Awareness of Gamification Among LIS Students at Tripura University (N = 42).

Table 3

Chi-Square Test: Awareness of Gamification by Gender

Gender	Aware (Yes)	Not Fully Aware	Total
Male	9	12	21
Female	3	18	21
Total	12	30	42

Note. $\chi^2(1, N = 42) = 2.917, p = .088$. Not statistically significant at $\alpha = .05$.

Table 4

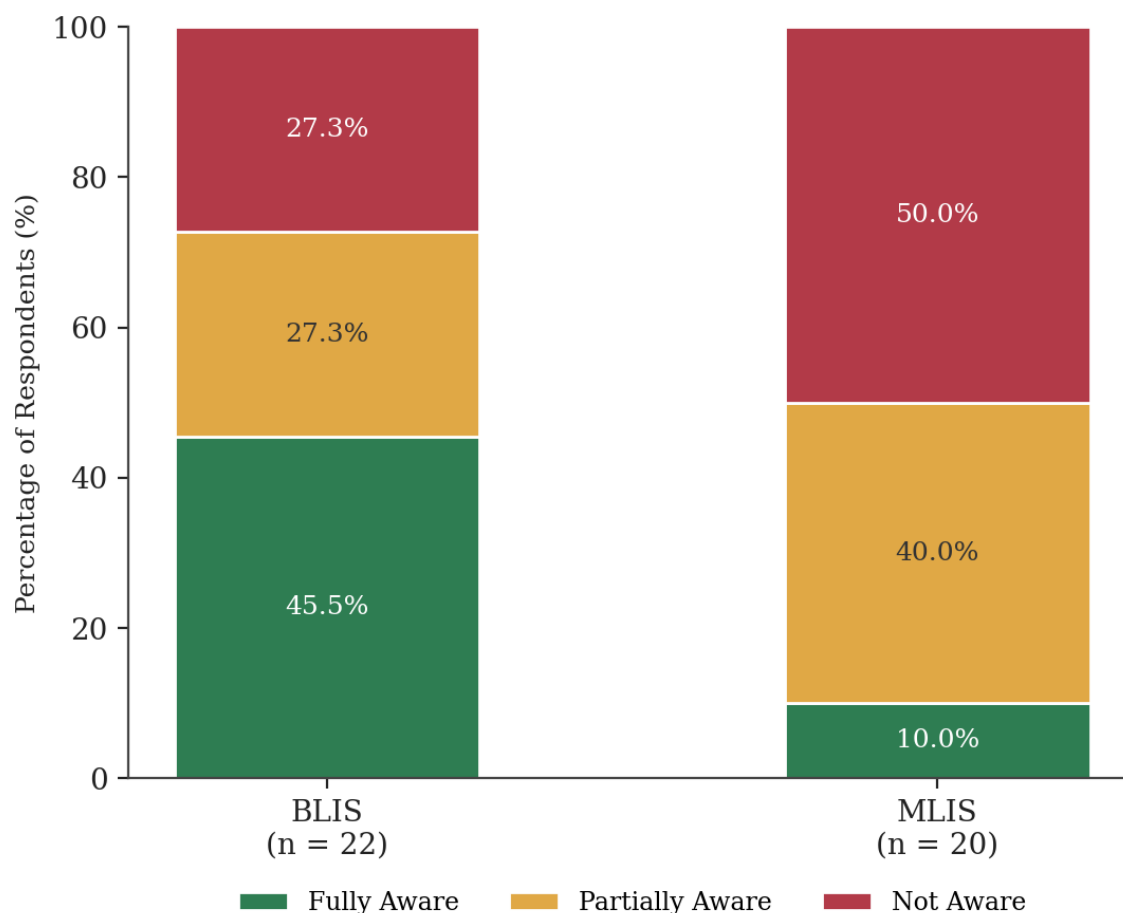
Chi-Square Test: Awareness of Gamification by Programme of Study

Programme	Aware (Yes)	Not Fully Aware	Total
BLIS	10	12	22
MLIS	2	18	20
Total	12	30	42

Note. $\chi^2(1, N = 42) = 4.832, p = .028^*$. * $p < .05$. Statistically significant.

Figure 2

Gamification Awareness Level (Fully Aware, Partially Aware, Not Aware) by Programme of Study.



4.3 Perceptions of Gamified Library Services

The 15-item perception scale demonstrated excellent internal consistency (Cronbach's $\alpha = .902$, N items = 15, $N = 42$), exceeding the threshold of $\alpha \geq .80$ recommended for social science research (Table 5). This finding justifies

the treatment of the scale as a unified, reliable measure of gamification perception and supports the validity of the aggregate score as an overall perception indicator.

Table 6 and Figure 3 presents descriptive statistics for each Likert item together with rank and interpretation using the standard five-point scale interpretive scheme (3.41–4.20 = Agree; 4.21–5.00 = Strongly Agree). The overall scale mean was $M = 4.42$ ($SD = 0.47$), confirming strongly positive perceptions of gamified library services across the entire respondent population. Critically, all 15 items achieved mean scores above 4.00, indicating that no dimension of gamification perception elicited neutral or negative responses. Table 7 and Figure 4 present the full frequency distribution of responses across all five Likert categories for each item.

The highest-rated items were Q2 ('Quiz-based activities can help students learn how to use library resources'; $M = 4.52$, $SD = 0.594$) and Q11 ('I prefer libraries that offer interactive and engaging services'; $M = 4.52$, $SD = 0.671$), closely followed by Q4 ('Game-like activities can increase student engagement with library services'; $M = 4.50$), Q5 ('Interactive activities make learning library skills easier'; $M = 4.50$), and Q15 ('Game-based approaches can support self-learning among students'; $M = 4.50$). These highest-rated items collectively indicate that respondents are most persuaded by gamification's capacity to enhance the educational and engagement dimensions of library service — findings directly aligned with the quasi-experimental evidence of Sureephong et al. (2024) and the systematic review evidence of Nwaobasi et al. (2026) for gamification's information literacy efficacy.

The lowest-rated item was Q8 ('I am willing to try quiz-based or challenge-based library activities'; $M = 4.02$, $SD = 0.950$), which was also the only item registering any Strongly Disagree ($n = 1$, 2.4%) or Disagree ($n = 1$, 2.4%) responses, alongside the highest neutral response count ($n = 9$, 21.4%). This nuanced result warrants interpretive attention: despite strongly positive general perceptions of quiz-based learning (Q2 was the highest-rated item), individual willingness to participate in competitive quiz formats is somewhat more guarded. This divergence is consistent with research on evaluation anxiety and academic self-efficacy, which documents that students may appreciate the educational value of competitive activity formats while remaining personally risk-averse regarding public performance visibility (BasirianJahromi et al., 2023). Library gamification designers should therefore offer varied participation modes — including non-competitive, self-paced, and team-based formats — to accommodate the full spectrum of student motivational profiles.

Table 5
 Reliability Statistics for the 15-Item Gamification Perception Scale

Cronbach's Alpha (α)	Number of Items	N (Respondents)
.902	15	42

Note. $\alpha \geq .80$ indicates excellent internal consistency; $\alpha \geq .70$ is acceptable; $\alpha \geq .90$ is excellent.

Table 6
 Descriptive Statistics and Rank Order for Likert-Scale Perception Items ($N = 42$)

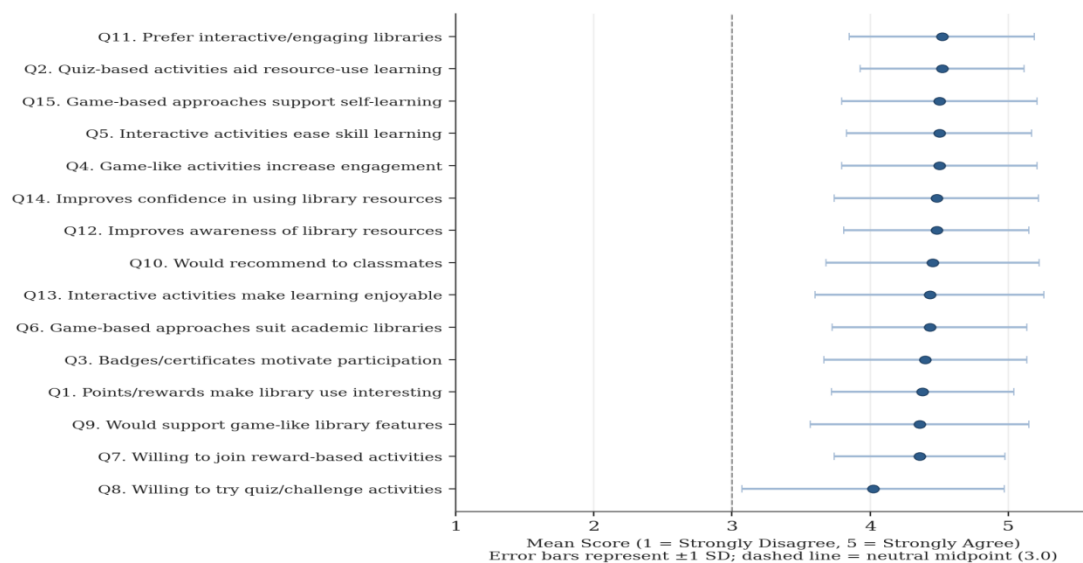
Q#	Item Statement	M	SD	Rank	Interpretation
Q1	Using points or rewards can make library use more interesting.	4.38	0.661	12	Strongly Agree
Q2	Quiz-based activities can help students learn how to use library resources.	4.52	0.594	1	Strongly Agree
Q3	Badges or certificates can motivate students to participate in library activities.	4.40	0.734	11	Strongly Agree
Q4	Game-like activities can increase student engagement with library services.	4.50	0.707	3	Strongly Agree
Q5	Interactive activities make learning library skills easier.	4.50	0.672	3	Strongly Agree
Q6	Game-based approaches are suitable for academic libraries.	4.43	0.703	9	Strongly Agree
Q7	I would like to participate in reward-based or point-based library activities.	4.36	0.618	13	Strongly Agree

Q8	I am willing to try quiz-based or challenge-based library activities.	4.02	0.950	15	Agree
Q9	I would support the introduction of game-like features in library services.	4.36	0.791	13	Strongly Agree
Q10	I would recommend such activities to my classmates.	4.45	0.772	8	Strongly Agree
Q11	I prefer libraries that offer interactive and engaging services.	4.52	0.671	1	Strongly Agree
Q12	Game-like activities can improve awareness of library resources.	4.48	0.671	5	Strongly Agree
Q13	Interactive library activities can make learning enjoyable.	4.43	0.831	9	Strongly Agree
Q14	Such activities can improve confidence in using library resources.	4.48	0.740	5	Strongly Agree
Q15	Game-based approaches can support self-learning among students.	4.50	0.707	3	Strongly Agree
	Overall Scale Mean	4.42	0.472	—	Strongly Agree

Note. Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Interpretation: 3.41–4.20 = Agree; 4.21–5.00 = Strongly Agree. N = 42 for all items. Ranks with ties share the same rank position.

Figure 3

Mean Perception Scores for the 15 Gamification Perception Items, Ranked in Descending Order (N = 42).



Note. Points represent item means; horizontal bars represent ± 1 SD. The dashed vertical line marks the neutral midpoint (3.0) of the five-point scale.

Table 7

Frequency Distribution of Responses Across Likert Categories (N = 42)

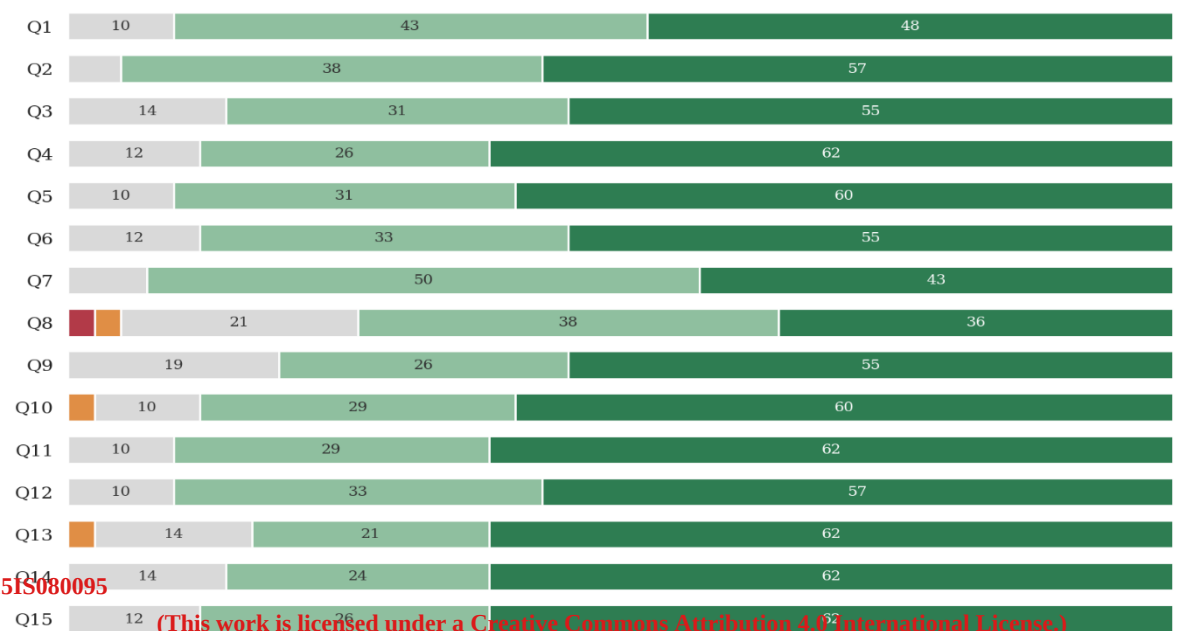
Q#	Item Statement (Abbreviated)	SD (1)	D (2)	N (3)	A (4)	SA (5)	M	SD
Q1	Using points or rewards can make library use more interesting.	0 (0.0)	0 (0.0)	4 (9.5)	18 (42.9)	20 (47.6)	4.38	0.661
Q2	Quiz-based activities can help students learn how to use libra...	0 (0.0)	0 (0.0)	2 (4.8)	16 (38.1)	24 (57.1)	4.52	0.594

Q3	Badges or certificates can motivate students to participate in...	0 (0.0)	0 (0.0)	6 (14.3)	13 (31.0)	23 (54.8)	4.40	0.734
Q4	Game-like activities can increase student engagement with libr...	0 (0.0)	0 (0.0)	5 (11.9)	11 (26.2)	26 (61.9)	4.50	0.707
Q5	Interactive activities make learning library skills easier.	0 (0.0)	0 (0.0)	4 (9.5)	13 (31.0)	25 (59.5)	4.50	0.672
Q6	Game-based approaches are suitable for academic libraries.	0 (0.0)	0 (0.0)	5 (11.9)	14 (33.3)	23 (54.8)	4.43	0.703
Q7	I would like to participate in reward-based or point-based lib...	0 (0.0)	0 (0.0)	3 (7.1)	21 (50.0)	18 (42.9)	4.36	0.618
Q8	I am willing to try quiz-based or challenge-based library acti...	1 (2.4)	1 (2.4)	9 (21.4)	16 (38.1)	15 (35.7)	4.02	0.950
Q9	I would support the introduction of game-like features in libr...	0 (0.0)	0 (0.0)	8 (19.0)	11 (26.2)	23 (54.8)	4.36	0.791
Q10	I would recommend such activities to my classmates.	0 (0.0)	1 (2.4)	4 (9.5)	12 (28.6)	25 (59.5)	4.45	0.772
Q11	I prefer libraries that offer interactive and engaging services.	0 (0.0)	0 (0.0)	4 (9.5)	12 (28.6)	26 (61.9)	4.52	0.671
Q12	Game-like activities can improve awareness of library resources.	0 (0.0)	0 (0.0)	4 (9.5)	14 (33.3)	24 (57.1)	4.48	0.671
Q13	Interactive library activities can make learning enjoyable.	0 (0.0)	1 (2.4)	6 (14.3)	9 (21.4)	26 (61.9)	4.43	0.831
Q14	Such activities can improve confidence in using library resour...	0 (0.0)	0 (0.0)	6 (14.3)	10 (23.8)	26 (61.9)	4.48	0.740
Q15	Game-based approaches can support self-learning among students.	0 (0.0)	0 (0.0)	5 (11.9)	11 (26.2)	26 (61.9)	4.50	0.707

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. Values in parentheses are column percentages (%). M = Mean; SD = Standard Deviation.

Figure 4

Percentage Distribution of Responses Across the Five Likert Categories for Each Perception Item (N = 42).



Note. Segments smaller than 8% are not numerically labelled for legibility. Corresponding values are reported in Table 7.

4.4 Preferred Gamification Elements

While the survey instrument did not directly solicit rankings of discrete gamification elements, the relative endorsement of items referencing specific mechanics permits inferential ordering of respondent preferences. Quiz-based activities (Q2; M = 4.52) and general interactive/engaging library services (Q11; M = 4.52) received the highest endorsement, followed closely by game-like engagement activities (Q4; M = 4.50), interactive skill-building (Q5; M = 4.50), and game-based self-learning support (Q15; M = 4.50). Points and reward-based activities (Q1; M = 4.38) and badge/certificate mechanics (Q3; M = 4.40) received somewhat lower but still strongly positive ratings. The relatively lower endorsement of competitive quiz participation (Q8; M = 4.02) compared to quiz-based learning in general (Q2; M = 4.52) suggests that respondents prefer the educational affordances of quiz mechanics over their competitive social dynamics.

These preferences are consistent with the motivational profile predicted by Self-Determination Theory (SDT): the highest-rated items predominantly address competence (skill-building, learning ease, self-learning support) and intrinsic engagement, while more overtly competitive or visibility-based elements (leaderboards, public challenge participation) are implicitly less preferred. This pattern is observed in comparable studies — Peng and Kim's (2024) case study found student preferences for quest-based and educational mechanics over purely reward-driven ones, and BasirianJahromi et al. (2023) found that competence-satisfying gamification features produced the strongest self-determination effects. Taken together, these findings suggest that library gamification at Tripura University should foreground educational quiz games, interactive skill challenges, and self-paced learning pathways over competitive leaderboard mechanics.

4.5 Inferential Analysis: Comparison of Perception Scores Across Groups

To determine whether perception scores differed significantly across gender and programme groups, Mann-Whitney U tests were conducted on the composite perception mean score (total scale mean across all 15 items). As presented in Table 8 and Figure 5, no statistically significant difference was found in perception scores between male (M = 4.371, SD = 0.515, Mdn = 4.33) and female (M = 4.473, SD = 0.431, Mdn = 4.53) respondents [U = 197.00, p = .562]. This finding indicates that gamification perception among LIS students at Tripura University is not gendered — a conclusion consistent with Durodolu et al.'s (2025) Nigerian study, which similarly found no gender-based differences in gamification engagement perceptions among library users.

Table 9 presents the Mann-Whitney U test comparing perception scores between BLIS and MLIS students. Although BLIS students achieved a numerically higher mean perception score (M = 4.524, SD = 0.431, Mdn = 4.63) than MLIS students (M = 4.310, SD = 0.500, Mdn = 4.27), this difference did not attain statistical significance [U = 281.50, p = .123]. This result indicates that while BLIS students are significantly more aware of gamification (Table 4), this awareness advantage does not translate into significantly different perceptions of its utility — both groups hold uniformly high perceptions of gamification's potential for library services.

Table 10 presents the Pearson correlation between awareness score (coded 1–3) and overall perception mean score. The correlation was non-significant [$r(40) = -.167, p = .292$], indicating that the level of prior gamification awareness does not predict the strength of positive perceptions of gamified library services. This finding has an important practical implication: even respondents with no prior familiarity with gamification expressed strongly positive perceptions once the concept was explained to them through the survey instrument. This suggests that gamification awareness-raising — through LIS curriculum, library workshops, or digital outreach — is likely to generate strong receptivity rather than scepticism, given that positive perception appears to be independent of prior exposure.

Table 8
Mann-Whitney U Test: Comparison of Perception Scores by Gender

Group	n	M	SD	Mdn	U	p
Male	21	4.371	0.515	4.33		
Female	21	4.473	0.431	4.53	197.00	.562

Note. U = Mann-Whitney U statistic; M = Mean perception score (15-item composite mean); Mdn = Median; Not statistically significant (p > .05).

Table 9

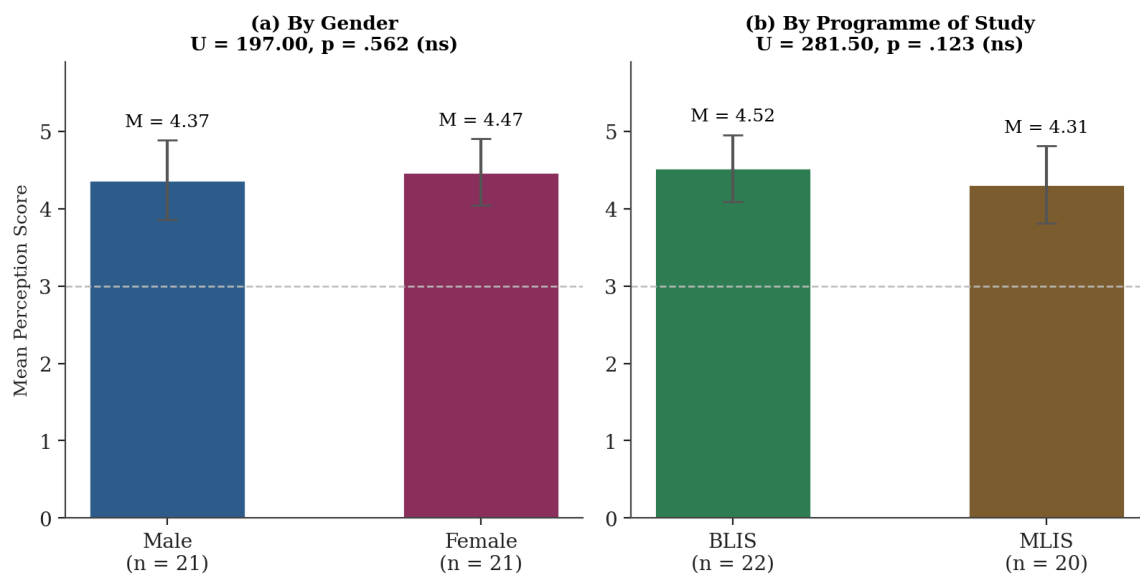
Mann-Whitney U Test: Comparison of Perception Scores by Programme of Study

Group	n	M	SD	Mdn	U	p
BLIS	22	4.524	0.431	4.63		
MLIS	20	4.310	0.500	4.27	281.50	.123

Note. Not statistically significant ($p > .05$). BLIS = Bachelor of Library and Information Science; MLIS = Master of Library and Information Science.

Figure 5

Overall Perception Mean Scores ($\pm$ SD) by (a) Gender and (b) Programme of Study, With Mann-Whitney U Test Results.



Note. The dashed horizontal line marks the neutral midpoint (3.0) of the five-point scale. ns = not statistically significant ($p > .05$).

Table 10

Pearson Correlation: Gamification Awareness Score and Overall Perception Mean Score

Variables	r	p	Interpretation
Awareness Score $\times$ Perception Mean Score	-.167	.292	Weak negative correlation; not statistically significant

Note. r = Pearson correlation coefficient; $df = 40$; $p > .05$ (two-tailed). Awareness coded: 1 = Not aware; 2 = Partially aware; 3 = Fully aware.

4.6 Qualitative Findings: Open-Ended Respondent Perspectives

The open-ended item invited respondents to share suggestions or opinions regarding game-based or interactive library activities. Of the 42 respondents, 9 (21.43%) provided substantive written responses. Thematic analysis of these responses identified four recurring themes, summarised in Table 11.

Table 11

Thematic Analysis of Open-Ended Responses ($n = 9$ responses from $N = 42$)

Theme	Representative Respondent Perspectives	f	%
General Positive Reception	Responses expressing overall enthusiasm (e.g., described initiatives as "very helpful for students", "fantastic", and expressing love for new gamified ideas).	4	44.44

Enhanced User Engagement and Library Attendance	Responses highlighting engagement and footfall (e.g., "encouraging the users to come to the library"; "make library services more engaging, boost learning, and attract more users").	2	22.22
Learning Retention and Skill Development	Responses emphasising educational outcomes (e.g., "improve learning retention, and attract users by turning information use into an enjoyable experience").	2	22.22
Qualified Support with Knowledge Gap	A response expressing theoretical appreciation with noted lack of practical experience (e.g., "great initiative, but without experience, I don't know how gamification works, but theoretically it's a great thing").	1	11.11
Total		9	100.00

Note. Themes are non-mutually exclusive; individual responses may reflect more than one theme. Percentages refer to proportions of written responses.

The qualitative findings reinforce and contextualise the quantitative results. The dominance of general positive reception affirms the strongly positive perception profile documented in Tables 6 and 7. The emergence of user engagement and library attendance as a recurrent theme reflects respondents' intuitive grasp of gamification's foot-traffic and engagement potential — consistent with the quantitative finding that game-like activities for engagement (Q4; $M = 4.50$) and interactive library preference (Q11; $M = 4.52$) were among the highest-rated items. Notably, one respondent articulated a qualified position, expressing enthusiasm for gamification in theory while acknowledging a practical knowledge gap. This response exemplifies the awareness-perception paradox identified in the quantitative analysis: positive perceptions can coexist with limited experiential knowledge of gamification, underscoring the need for hands-on professional exposure within the LIS curriculum.

5. DISCUSSION

The findings of this study constitute the first systematic empirical portrait of gamification awareness and perception among LIS students in Northeast India, and contribute to a growing international literature that positions LIS students as both research subjects and critical professional actors in the gamification of library services. Several themes emerging from the analysis warrant extended interpretive discussion.

The awareness pattern with 28.57% fully aware, 33.33% partially aware, and 38.10% unaware constitutes perhaps the study's most practically significant finding. It indicates that the concept of gamification has not yet achieved systematic visibility within LIS education at Tripura University. This gap is not unique to the Indian context, comparable awareness deficits have been documented among library professionals in Ukraine (Shlenova, 2021), Iran (Khademi Zare et al., 2024), Nigeria (Durodolu et al., 2025), and China (Li et al., 2022). The implication is that LIS programmes globally face a shared curriculum development challenge providing students not only with general digital literacy but with library-domain gamification literacy including familiarity with the evidence base, design principles, and professional discourse surrounding gamified library services.

The strongly positive perceptions expressed by respondents particularly regarding quiz-based learning and interactive service engagement suggest that the motivational logic of gamification is intuitively compelling to a population whose professional formation has centred on understanding user needs and service design. All 15 perception items achieved means above 4.00, and the overall scale mean of $M = 4.42$ substantially exceeds the midpoint of 3.00, confirming that even respondents who had never previously encountered the term 'gamification' perceived its potential applications positively upon exposure. This finding aligns with Durodolu et al.'s (2025) Nigerian study and Nakiyemba's (2024) Ugandan study, providing cross-continental evidence that LIS students and library users hold favourable orientations toward gamification regardless of prior familiarity.

The finding that awareness level (coded 1–3) did not significantly predict perception scores [$r(40) = -.167$, $p = .292$] has significant pedagogical implications. It suggests that gamification awareness-raising does not merely confirm pre-existing enthusiasm but generates new enthusiasm among previously unaware respondents. This indicates that embedding gamification content within the LIS curriculum will likely produce genuine professional value-add rather than merely formalising knowledge that students have already acquired informally. The negative (though non-significant) correlation direction suggesting that higher awareness is not associated with higher perception scores may reflect that fully aware students hold slightly more nuanced and less uniformly enthusiastic views, having already encountered discussions of gamification's limitations as well as its benefits in the academic literature.

The significant programme-level difference in awareness [$\chi^2(1, N = 42) = 4.832, p = .028$], with BLIS undergraduates (45.5% fully aware) demonstrating significantly greater gamification familiarity than MLIS postgraduates (10.0% fully aware), is the study's most counterintuitive finding. It challenges the assumption that postgraduate professional education produces greater awareness of emerging library innovations. One plausible explanation is generational and peer-culture: BLIS students, who skewed younger (predominantly 24–26 or 21–23 years), may have more extensive engagement with gaming platforms and gamified commercial applications in their peer social contexts, producing incidental gamification awareness independent of formal education. A second explanation is that MLIS students being more advanced in formal academic study may apply stricter definitional standards to 'awareness', reporting uncertainty where BLIS students might more readily affirm familiarity with the general concept.

6. CONCLUSION

This study provides the empirical investigation of the perception and awareness of gamified library services among LIS students at Tripura University, contributing a Northeast India-specific dataset to a literature previously dominated by North American, European, and East Asian perspectives. The findings establish that LIS students at Tripura University possess limited but growing gamification awareness, hold uniformly and strongly positive perceptions of gamification's potential across multiple library service dimensions and are especially enthusiastic about quiz-based learning and interactive service modalities. BLIS undergraduates are significantly more aware of gamification than MLIS postgraduates, though this awareness advantage does not translate into significantly higher perception scores affirming that gamification's appeal transcends prior familiarity.

The convergence of enthusiastic professional receptivity and clear-eyed acknowledgment of knowledge gaps among LIS students at Tripura University presents a compelling case for strategic investment in gamification literacy within the regional LIS ecosystem. Meeting this readiness with appropriate curricular reform, institutional support, and professional development is among the most consequential contributions that the LIS academy and library leadership can make to the future of library services in Northeast India and the broader national project of building equitable, engaging, and educationally effective academic library systems.

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