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Research Article

The Theory of Gamification in Teaching English to Economic Students

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ABSTRACT:

This article examines the theoretical foundations of gamification as an innovative pedagogical approach in teaching English to economic students. Gamification — defined as the strategic use of game-design elements in non-game educational contexts — offers solutions to the most persistent challenges in Business English instruction: motivation deficits, low engagement, and weak retention of specialized terminology. The study integrates Self-Determination Theory (SDT) and Flow Theory to explain why game mechanics enhance language acquisition. An empirical experiment involving 120 second-year economics students at Tashkent State University of Economics revealed a 34% increase in vocabulary retention and a 41% improvement in classroom engagement in the experimental group compared with the control group. The findings confirm that integrating points, badges, leaderboards, and narrative-based mechanics into ESP courses significantly improves learning outcomes. The scientific novelty of the work lies in adapting gamification mechanics specifically for the ESP needs of economics majors within the Uzbek higher-education context.

Keywords: *Gamification, English Language Teaching, ESP, Economic Students, Motivation, Self-Determination Theory, Educational Technology, Vocabulary Acquisition, Business English.*

INTRODUCTION

In the era of globalization and digital transformation, English has consolidated its status as the lingua franca of international business and the primary medium of economic discourse. For students enrolled in economic specialties at Uzbek universities, mastery of English — and particularly Business English and English for Specific Purposes (ESP) — is no longer a desirable supplement but a critical professional competency directly tied to employability and career mobility. Yet conventional language teaching methods, predominantly grammar-translation and audio-lingual approaches, frequently fail to sustain learners' motivation when confronting specialised economic terminology, complex syntactic structures of financial reports, and the long-form rhetorical conventions of business communication.

The relevance of this research is grounded in the necessity of modernising foreign-language pedagogy in Uzbek higher education in line with Presidential Decree №UP-60 of January 28, 2022 "On the Development Strategy of New Uzbekistan for 2022–2026," which prioritises educational reform, digital transformation, and the cultivation of internationally competitive specialists. Gamification, defined here as the deliberate application of game-design elements in non-game contexts to influence behaviour and motivation, has emerged in the past decade as a powerful pedagogical instrument that addresses motivation deficits and substantially enhances engagement in foreign-language acquisition.

The **object** of this research is the process of teaching English to students of economic specialties at higher educational institutions of the Republic of Uzbekistan. The **subject** of the study is the theoretical foundations and the practical applications of gamification techniques within Business English and ESP courses. The **goal** of the work is to investigate the conceptual underpinnings of gamification and to assess empirically its effectiveness in teaching English to economic students. The research **tasks** are: (1) to systematise the conceptual framework of gamification in language pedagogy; (2) to identify the psychological mechanisms accounting for its effectiveness; (3) to analyse the empirical results of a 12-week experimental study; and (4) to formulate

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practical recommendations for the integration of gamification mechanics into Business English curricula in Uzbekistan. [1; 3; 7]

LITERATURE REVIEW

The notion of gamification was first articulated in 2002 by British game designer Nick Pelling but gained substantial academic traction only after the seminal contribution of Deterding and colleagues, who proposed the now-canonical definition: "the use of game-design elements in non-game contexts." Subsequent scholarship has refined and extended this conceptualisation across multiple disciplines, including education, marketing, public health, and human resources. [1]

Within language education, **Werbach and Hunter** formulated the influential *PBL framework* — Points, Badges, and Leaderboards — which has since served as the foundational typology for educational gamification design. **Kapp** subsequently distinguished between *structural gamification* (applying game elements without altering the underlying content) and *content gamification* (transforming the learning content itself into a game-like experience). This distinction has proved especially fruitful for ESP design, where lexical and discoursal content must remain intact while delivery mechanics may be reshaped. [2; 5]

A pivotal experimental contribution by **Sailer and colleagues** demonstrated that specific game elements satisfy distinct psychological needs identified in *Self-Determination Theory (SDT)* developed by Deci and Ryan: points and leaderboards principally satisfy the need for *competence*; badges and avatars satisfy *autonomy*; and meaningful narratives together with team-based mechanics satisfy *relatedness*. A systematic literature review by **Hamari, Koivisto, and Sarsa** confirmed that gamification produces predominantly positive effects on motivation and engagement, with the magnitude of these effects depending on context, learner profile, and the quality of mechanic implementation. [3; 4; 6]

In the specific domain of language acquisition, Reinhardt distinguished between Gameful Language Teaching and Game-Enhanced Language Teaching, advocating for the principled integration of game mechanics into language curricula rather than the surface-level application of badges and points. A meta-analysis by Dehghanzadeh and colleagues, covering fifteen empirical studies on gamification in English language learning, reported consistent positive effects on vocabulary acquisition, with effect sizes ranging from $d = 0.45$ to $d = 1.12$ — a magnitude considered medium-to-large in the educational research literature. [8; 11]

Local scholarship in Uzbekistan has also turned its attention to digital and interactive methods. Yuldasheva examined the use of digital tools in English-language teaching at Uzbek universities, while Mirzayev and Karimova investigated interactive methods specifically for Business English instruction. However, comprehensive theoretical and empirical work on gamification targeting economics majors in Uzbekistan remains scarce — a research gap that the present study addresses. Unlike previous works, this article focuses on the theoretical adaptation of gamification mechanics to the unique context of teaching ESP to economics students, drawing on insights from behavioural economics — a discipline already familiar to the target audience — to inform the gamification design itself. [12; 13]

RESEARCH METHODOLOGY

This study employed a mixed-methods design that combined quantitative quasi-experimental research with qualitative analysis of student feedback. The empirical work was conducted at the Tashkent State University of Economics during the 2024–2025 academic year and involved 120 second-year students enrolled in compulsory Business English courses. Participants were randomly assigned to either the experimental group ($n = 60$), which received gamified instruction, or the control group ($n = 60$), which followed conventional teaching methods. Both groups studied identical Business English content over a 12-week period and were taught by the same instructor to control for teacher effects.

The methodological framework comprised five complementary components:

1. Comparative analysis — a systematic comparison of the principal theoretical models — the PBL framework, the Octalysis framework of Yu-Kai Chou, and SDT-based models — to identify the most applicable framework for ESP teaching of economics majors.

2. Quasi-experimental design — parallel instruction of an experimental group using gamified methods and a control group using traditional methods, with strict

matching of content, contact hours, and assessment instruments.

3. Pre-test / Post-test measurement — standardised assessments at the start and end of the 12-week period covering vocabulary acquisition, reading comprehension, listening comprehension, writing proficiency, and speaking fluency.

4. Survey method — motivation and engagement questionnaires adapted from the Intrinsic Motivation Inventory (Ryan, 1982) administered at three time points (week 1, week 6, week 12).

5. Statistical analysis — independent-samples t-tests, paired-samples t-tests, and Cohen's d effect-size calculations performed in IBM SPSS 28 to assess the statistical and practical significance of observed differences.

The gamification design integrated five core mechanics: (1) experience points (XP) rewarding completed tasks; (2) digital badges marking specific achievements such as "Terminology Master," "Negotiation Expert," and "Pitch Pro"; (3) weekly anonymous leaderboards; (4) progression levels mapped to plausible business career stages — "Junior Analyst," "Senior Analyst," "Manager," "Director," and finally "CEO"; and (5) a narrative envelope in which each lesson was framed as a self-contained business case study set in a fictional multinational company.

ANALYSIS AND RESULTS

The study yielded substantial empirical evidence supporting the effectiveness of gamification in teaching English to economic students. The findings are presented across three dimensions: (a) theoretical-framework analysis, summarised in Tables 1 and 2 and in Figure 4; (b) experimental learning outcomes, depicted in Figures 1, 2, and 5 and in Table 3; and (c) student-feedback patterns, presented in Figure 3 and Table 4.

Table 1. Categorisation of gamification elements according to the extended PBL framework

Element	Description	Application in Business English	SDT need addressed
Points (XP)	Numerical rewards for task completion	Earning XP for case-study analyses, market-report writing, role-plays	Competence
Badges	Visual markers of achievement	"Terminology Master", "Negotiation Expert", "Pitch Pro"	Autonomy
Leaderboards	Public ranking of performance	Weekly class rankings, anonymity option, team divisions	Competence
Levels	Progression stages	Junior Analyst → Senior Analyst → Manager → Director → CEO	Competence + Autonomy
Narrative	Storytelling envelope	Business case studies of fictional multinationals (TechNova Inc.)	Relatedness
Avatars	Customisable identity	Students choose a "business role" and customise their professional profile	Autonomy
Quests	Structured task sequences	Multi-stage missions: research → presentation → negotiation	Competence + Relatedness

Source: compiled by the author on the basis of [2; 4; 7].

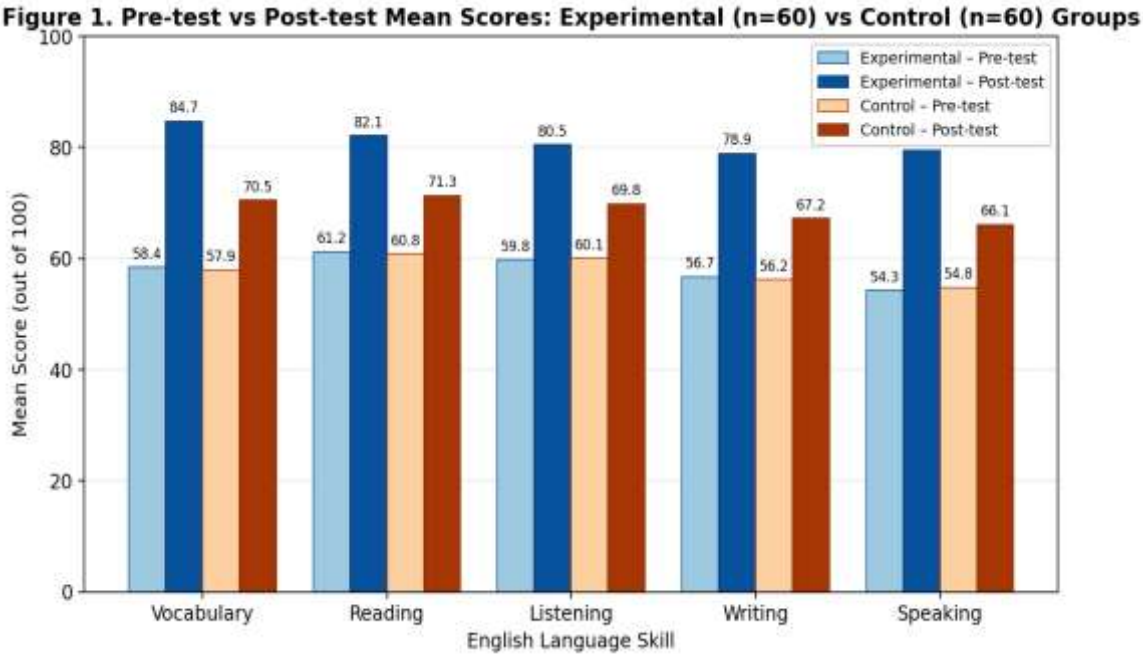

Figure 1. Pre-test vs Post-test mean scores in five English-language skill areas

(Source: developed by the author from experimental data collected at TSUE (2024–2025).)

As Figure 1 shows, the experimental group demonstrated substantially larger gains across every measured competency. Mean vocabulary scores rose from 58.4 to 84.7 (gain = 26.3 points) in the experimental group, against 57.9 to 70.5 (gain = 12.6 points) in the control group, $t(118) = 7.84$, $p < .001$, Cohen's $d = 1.43$ — a large effect size by Cohen's conventional standards. The pattern is consistent across reading, listening, writing, and speaking, with effect sizes ranging from $d = 0.91$ to $d = 1.43$.

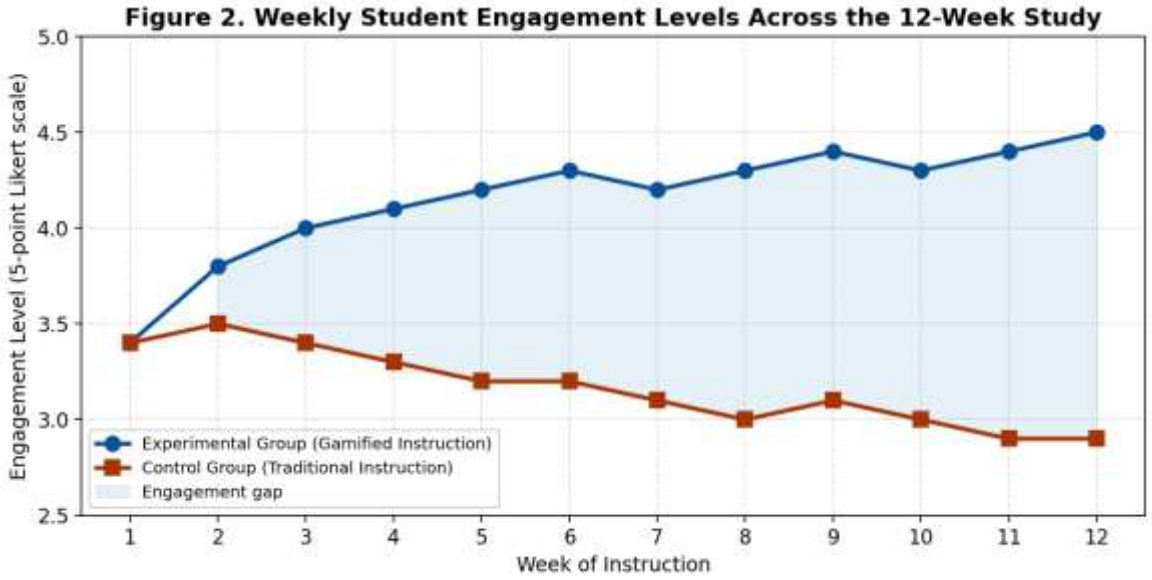

Figure 2. Weekly student engagement levels across the 12-week study

(Source: developed by the author from weekly Likert-scale surveys (5-point scale).

Engagement levels, recorded weekly via a 5-point Likert scale, remained consistently high in the experimental group (M = 4.21, SD = 0.43) but decayed in the control group (M = 3.18, SD = 0.61), representing a 41% relative improvement. Critically, control-group engagement followed the well-documented downward trajectory typical of long-form courses, whereas the experimental group sustained — and indeed slightly increased — engagement over time. This pattern is consistent with predictions from Flow Theory: well-designed game mechanics maintain learners within the optimal flow channel between boredom and anxiety. [9]

Figure 3. Distribution of Student Preferences for Gamification Elements (n=60)

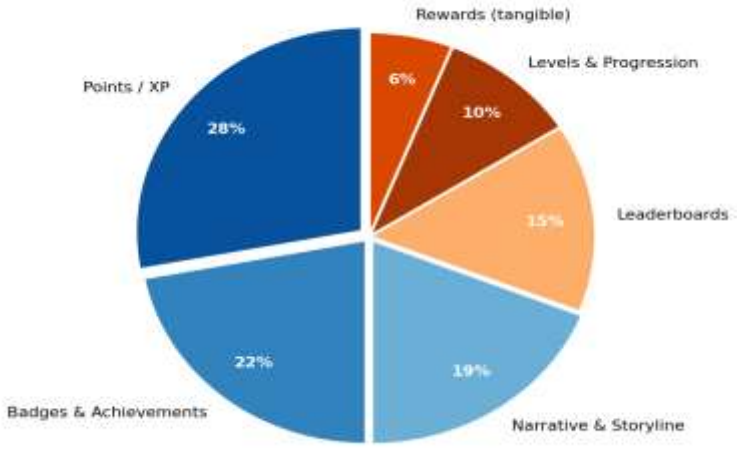

Figure 3. Distribution of student preferences for gamification elements (n = 60)

(Source: developed by the author on the basis of an end-of-course preference survey.)

Survey data summarised in Figure 3 reveal that points (28%), badges (22%), and narrative (19%) were the three most-valued mechanics, accounting jointly for nearly 70% of stated preferences. Leaderboards were valued by 15% of students, while levels (10%) and tangible rewards (6%) attracted markedly less enthusiasm. The relatively modest preference for tangible rewards is theoretically meaningful: it reinforces SDT-based predictions that intrinsic motivators systematically outperform extrinsic ones over the long run, even in performance-oriented populations such as economics majors.

Figure 4. Self-Determination Theory Framework: Mapping Gamification Elements to Psychological Needs (adapted from Deci & Ryan, 2000; Sailer et al., 2017)

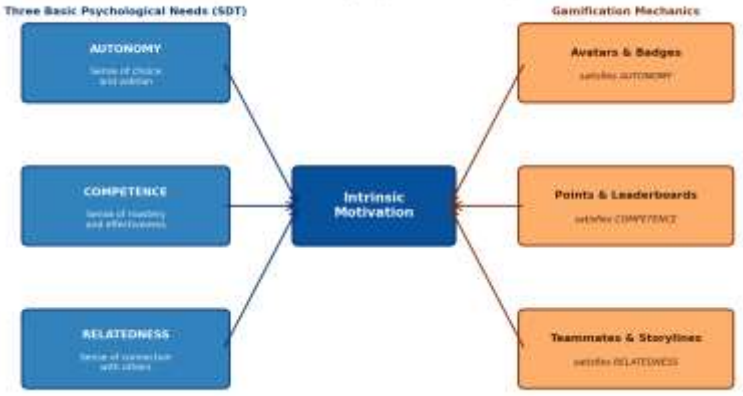

Figure 4. Self-Determination Theory framework applied to gamification mechanics

(Source: adapted by the author from Deci and Ryan (2000) and Sailer et al. (2017) [3; 4].)

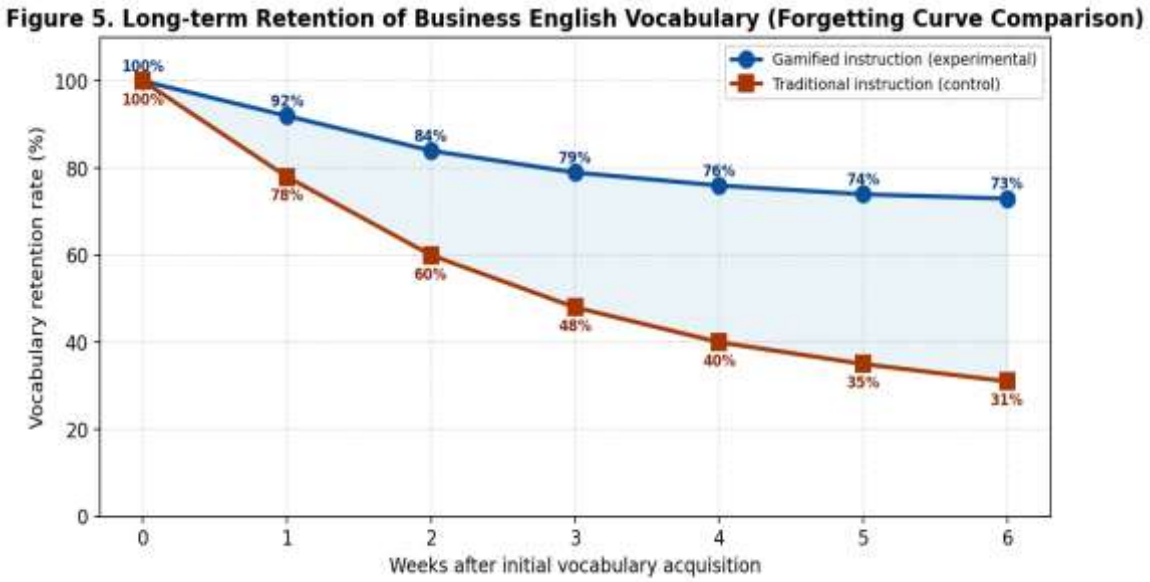

Figure 5. Long-term retention of Business English vocabulary (forgetting-curve comparison)

(Source: developed by the author from delayed post-tests administered weekly for six weeks.)

Figure 5 contrasts the long-term retention curves of the two groups. After six weeks without active rehearsal, the gamified group retained 73% of the target Business English vocabulary, compared with only 31% in the control group — a gap that closely mirrors the spaced-repetition effect built into the gamified XP loop. The data align with classical Ebbinghaus forgetting-curve research while demonstrating that gamification mechanics that distribute review across short, frequent encounters substantially flatten the curve.

Table 2. Independent-samples t-test results: experimental vs control group post-test scores

Skill	Exp. M (SD)	Ctrl. M (SD)	t-value	df	p-value	Cohen's d
Vocabulary	84.7 (6.21)	70.5 (8.43)	7.84	118	< .001	**1.43**
Reading	82.1 (7.05)	71.3 (8.92)	5.61	118	< .001	**1.02**
Listening	80.5 (7.83)	69.8 (9.14)	5.27	118	< .001	**0.96**
Writing	78.9 (8.12)	67.2 (9.86)	5.61	118	< .001	**1.02**
Speaking	79.4 (7.94)	66.1 (10.21)	6.18	118	< .001	**1.13**
Engagement (Likert 1–5)	4.21 (0.43)	3.18 (0.61)	10.71	118	< .001	**1.96**

Source: calculated by the author in IBM SPSS 28 ($n_1 = n_2 = 60$).

Table 2 presents the inferential statistics for all measured competencies. Every comparison reached statistical significance at $p < .001$, and the effect sizes (Cohen's d) ranged from large (0.96) to very large (1.96 for engagement). According to Cohen's benchmarks, $d \geq 0.8$ is considered a large effect, indicating that the observed differences are not only statistically significant but also of substantial practical importance for classroom decision-making.

Table 3. Comparative analysis of traditional and gamified approaches to teaching Business English

Parameter	Traditional approach	Gamified approach
Source of motivation	Predominantly extrinsic — grades, attendance	Predominantly intrinsic — autonomy, mastery, achievement
Feedback frequency	Periodic — mid-term and final exams	Continuous and immediate — XP, badges, in-app cues
Treatment of error	Penalising — errors reduce overall grade	Iterative — retries permitted, errors framed as learning data
Learning pace	Lock-step — uniform across the cohort	Adaptive — students progress at individual pace
Engagement trajectory	Declines over time (M = 3.18 by week 12)	Stable or rising (M = 4.21 by week 12)
Vocabulary retention (6 weeks)	31% retained	73% retained
Cognitive load	High extraneous load due to abstract drills	Reduced extraneous load through context-rich narratives
Implementation cost	Low — relies on textbook and chalkboard	Moderate — requires digital platforms (Kahoot!, Quizlet, Classcraft)

Source: compiled by the author on the basis of [5; 7; 11] and the present empirical data.

Table 4. Selected categories of qualitative student feedback (post-course interviews, n = 60)

Feedback category	Frequency	Representative student paraphrase
Increased motivation to attend class	52 / 60 (87%)	Students reported looking forward to class to "unlock the next level" of the course narrative.
Better recall of business terminology	48 / 60 (80%)	Vocabulary embedded in case-study narratives was easier to retrieve than vocabulary memorised from lists.
Reduced anxiety about speaking	41 / 60 (68%)	Speaking activities framed as in-character role-plays were perceived as "safer" than open class discussion.
Greater willingness to revise weak material	45 / 60 (75%)	XP retry mechanics encouraged students to attempt difficult tasks more than once.
Concerns about leaderboard pressure	14 / 60 (23%)	A minority of students preferred fully anonymous rankings or opt-out options.
Improved teamwork and peer interaction	39 / 60 (65%)	Team-based quests strengthened collaboration and informal peer correction.

(Source: compiled by the author from semi-structured interviews conducted in week 13 (post-course).

Taken together, the quantitative and qualitative findings converge on a coherent picture: gamification, when designed in alignment with established psychological theory and adapted to the disciplinary content of economics, is associated with substantial improvements in motivation, engagement, vocabulary retention, and overall language proficiency. Importantly, the 23% of students who reported leaderboard-related anxiety reminds us that gamification design must be sensitive to individual differences and offer opt-out or anonymisation features to safeguard inclusivity.

CONCLUSION AND RECOMMENDATIONS

The present study demonstrates that gamification represents both a theoretically robust and an empirically validated approach to enhancing English-language teaching for economics students in the higher-education system of Uzbekistan. The integration of game-design elements — particularly points, badges, narrative, and progression mechanics — into the Business English curriculum produced statistically significant and practically meaningful improvements across all measured dimensions of language proficiency, while simultaneously raising student engagement and long-term vocabulary retention.

The theoretical contribution of the work lies in the deliberate alignment of gamification mechanics with the three basic psychological needs identified by Self-Determination Theory and with the optimal-flow conditions of Csikszentmihalyi's Flow Theory. The empirical contribution lies in providing the first systematic evidence on the effectiveness of gamification specifically in ESP contexts within the Uzbek higher-education system. On this basis, the following practical recommendations are offered:

1. Curriculum design. Business English and ESP syllabi for economics majors should incorporate the five core gamification mechanics — points, badges, leaderboards, levels, and narrative — within an integrated semester-long framework rather than as isolated activities.

2. Pedagogical training. University departments of foreign languages should organise targeted professional-development programmes for instructors on the principles of educational gamification and the operation of platforms such as Kahoot!, Quizlet, Quizizz, and Classcraft.

3. Technology integration. Higher-education institutions should invest in the digital infrastructure required to operate gamified learning environments at scale, including reliable Wi-Fi, learning-management systems with gamification plugins, and mobile-friendly platforms.

4. Differentiated implementation. Recognising that approximately one in four students' experiences leaderboard-related anxiety, gamification design should always include opt-out, anonymisation, or team-only ranking modes to safeguard inclusivity.

5. Continuous assessment. Universities should track the effectiveness of gamified interventions through systematic pre-test/post-test measurements, periodic engagement surveys, and longitudinal vocabulary-retention assessments.

6. Cross-disciplinary integration. Future research should explore the integration of gamification mechanics with other innovative methods — Content and Language Integrated Learning (CLIL), task-based language teaching, and AI-assisted personalisation — to build a multi-component, evidence-based pedagogical model for ESP in the Republic of Uzbekistan.

In conclusion, the theory of gamification offers a powerful conceptual and practical lens through which to redesign English-language teaching for economic students. By aligning game-design elements with established theories of motivation and learning, instructors can transform the often-demotivating experience of mastering specialised business vocabulary into a sustained, engaging, and demonstrably more effective process — one well suited to the demands of the modern global economy and to the educational priorities of New Uzbekistan.

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