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M. AKESHOVA[1], I. SAGDULLAYEV[1], D. SARZHANOVA[2]✉
[1]International University of Tourism and Hospitality
(Kazakhstan, Turkistan), e-mail: m.akeshova@iuth.edu.kz
[2]Khoja Akhmet Yassawi International Kazakh-Turkish University, (Kazakhstan, Turkistan)

INTEGRATED MODEL OF IMMERSIVE AND GAMIFIED LANGUAGE TRAINING FOR FUTURE TOURISM PROFESSIONALS

Abstract. *This study aims to develop and empirically validate an integrated model combining immersive technologies, gamification mechanisms, and digital learning strategies to enhance professional foreign language competence among future tourism specialists. The research was conducted using a quasi-experimental design with 45 undergraduate tourism students divided into control and experimental groups. The experimental group engaged in immersive VR-based simulations and gamified scenario progression integrated into a digital learning environment, while the control group followed traditional instruction.*

Quantitative data were analyzed using IBM SPSS Statistics. Due to non-normal distribution of several variables, the Mann–Whitney U test was applied. The experimental group demonstrated statistically significant improvements in post-test scores ($U = 128.5$, $p = 0.003$), with a medium-to-large effect size ($r \approx 0.48$). Gain analysis revealed that performance growth in the experimental group (+11.42) was more than four times higher than in the control group (+2.46). Reliability analysis confirmed good internal consistency of the professional competence test (Cronbach's $\alpha = 0.81$) and substantial inter-rater agreement for speaking assessment (Cohen's $\kappa = 0.76$). Qualitative findings indicated increased professional confidence, reduced communicative anxiety, and higher emotional engagement among students in the immersive–gamified environment.

The study demonstrates that immersive simulation combined with structured gamification produces multidimensional effects on cognitive, behavioral, and professional competence development. The proposed integrated model provides a scalable framework for tourism language education, particularly relevant for regions with limited access to authentic international practice.

Keywords: *immersive learning; gamification; tourism education; professional foreign language competence; virtual reality; digital pedagogy; intercultural communication.*

Introduction

Higher education is undergoing rapid digital transformation, and tourism education is no exception. Over the past decades, tourism programs have gradually shifted from knowledge

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transmission to competence-based and practice-oriented training models [16]. Today, future tourism professionals are expected not only to master a foreign language but also to communicate confidently across cultures, adapt to unpredictable service situations, and make decisions in real time.

Yet, in many cases, foreign language instruction still remains largely classroom-bound and text-centered. Students practice dialogues, complete grammar exercises, and analyze texts, but they rarely experience the dynamic and emotionally charged situations typical of real tourism settings. This gap between academic preparation and professional reality becomes especially visible in tourism, where communication unfolds in authentic intercultural encounters and service interactions [3; 11].

Recent technological advances offer new opportunities to address this challenge. Immersive technologies such as virtual reality (VR) and augmented reality (AR) allow learners to "enter" simulated environments that resemble real professional contexts. Immersive interfaces enhance engagement and support situated learning experiences [5], while VR environments can recreate complex service scenarios with a strong sense of presence [1]. Empirical evidence also suggests that AR-based language instruction can improve both learner motivation and performance [9; 4].

At the same time, gamification has gained considerable attention as a strategy for increasing engagement and sustaining learner motivation. Defined as the application of game design elements in non-game contexts [6], gamification introduces elements such as points, challenges, narrative scenarios, and feedback systems into instructional design. Research shows that these mechanisms can positively influence motivation and learning outcomes [8; 17], especially when they are systematically embedded rather than used superficially [10].

Parallel to these developments, online learning environments have become central to higher education ecosystems. Effective digital instruction requires not only technological tools but also a balance of cognitive, social, and teaching presence [7]. Motivation and sustained engagement in such environments are strongly linked to learners' sense of autonomy, competence, and self-efficacy, as explained by self-determination theory and social cognitive theory [15; 2].

Despite the growing number of studies on immersive technologies, gamification, and online learning strategies, these strands of research often develop independently. While each approach demonstrates its own effectiveness, there is still a noticeable absence of integrated pedagogical models that systematically combine immersive environments, gamified mechanisms, and digital learning strategies within professional foreign language education for tourism — particularly in the context of Central Asia.

Literature Gap

The literature provides convincing evidence that immersive technologies enhance engagement and cognitive activation [5; 1; 13]. Gamification research similarly confirms its positive impact on motivation and learner performance [8; 17]. In tourism education, scholars and international organizations emphasize the importance of aligning curricula with industry needs and experiential training formats [16; 12; 18].

However, several important issues remain insufficiently addressed.

First, technological approaches tend to be fragmented. Immersive tools, gamified elements, and online strategies are frequently implemented as separate innovations rather than as interconnected components of a unified instructional system.

Second, while digital transformation in general education has been widely discussed, profession-oriented foreign language training for tourism specialists remains underexplored. Tourism communication requires a specific blend of linguistic competence, intercultural sensitivity, and

situational decision-making, yet few studies propose models tailored to this complexity.

Third, existing research often concentrates on measuring effectiveness but rarely explains how immersive and gamified components interact structurally to foster professional competence. The dynamic relationship between cognitive activation, motivational mechanisms, and experiential learning environments is still insufficiently conceptualized.

These gaps highlight the need for a comprehensive model that synthesizes empirical findings and theoretical foundations into a coherent pedagogical framework adapted specifically to tourism education.

Aim of the Study

The present study aims to develop and theoretically substantiate an integrated pedagogical model that combines immersive technologies, gamification elements, and online learning strategies to enhance professional foreign language competence among future tourism specialists.

More specifically, the study seeks to:

- synthesize empirical evidence from immersive and gamified interventions;
- integrate motivational and cognitive theories into technology-enhanced language instruction;
- align foreign language training with the practical demands of the tourism industry;
- propose a scalable and adaptable framework suitable for higher education institutions.

Rather than treating immersive technologies and gamification as isolated innovations, this study conceptualizes them as interconnected layers within a broader professional competence development system. By doing so, it moves toward a more holistic understanding of how digital pedagogical tools can transform tourism language education.

Methodology

Research Design

This study employed an integrative research design combining empirical investigation with conceptual model development. The integrated pedagogical model was constructed on the basis of previously conducted quasi-experimental and mixed-method studies focusing on immersive technologies, gamification, and online learning strategies in tourism language education.

The research design incorporated both quantitative and qualitative data to ensure methodological triangulation. Empirical findings served as the foundation for the structural synthesis of immersive, gamified, and digital learning components within a unified professional competence framework.

Research Context and Participants

The empirical phase of the study was conducted at the International University of Tourism and Hospitality in Turkestan, Kazakhstan.

A total of 45 undergraduate students majoring in Tourism and Hospitality participated in the research. The participants were enrolled in professionally oriented foreign language courses across first to third academic years.

For the quasi-experimental component, students were divided into two groups.

The experimental group engaged in immersive and gamified learning activities, including VR simulations, AR-supported tasks, 360° video scenarios, and role-based professional simulations.

The immersive component of the intervention employed semi-immersive virtual reality environments using head-mounted displays and interactive 360° tourism scenarios. VR sessions were

conducted once per week over a six-week instructional module. Each session lasted approximately 45 minutes and included scenario introduction, role-based interaction, and reflective discussion. Students participated in simulated tourism service situations such as travel consultation, complaint management, and itinerary adjustment. The level of interaction required learners to make real-time communicative decisions, thereby approximating authentic professional communication conditions.

The control group received traditional instruction based on textbook-centered activities and structured classroom discussions.

Participation was voluntary, and students were informed about the research objectives prior to data collection.

Instruments and Validation Procedures

Professional Language Competence Test

The pre-test and post-test instruments were developed by the research team in alignment with the curriculum objectives of professionally oriented foreign language training in tourism. The test tasks were aligned with CEFR descriptors at the B1–B2 levels and were designed to assess:

- professional vocabulary range,
- communicative fluency,
- intercultural awareness,
- situational decision-making in tourism-related contexts.

To ensure content validity, the instruments were reviewed by three experts in foreign language pedagogy and tourism education. Based on their feedback, several items were refined to improve clarity and professional relevance.

The internal consistency of the test was evaluated using Cronbach's alpha coefficient calculated in IBM SPSS Statistics ($\alpha = 0.81$), indicating acceptable reliability.

Speaking Performance Rubric

The speaking assessment rubric was developed based on CEFR performance descriptors and adapted to reflect profession-specific communication tasks in tourism settings. The rubric included four criteria:

- fluency and coherence,
- lexical range and accuracy,
- intercultural communicative competence,
- professional situational responsiveness.

To enhance scoring reliability, two independent evaluators assessed student performances. Inter-rater reliability was examined using Cohen's kappa coefficient in SPSS, demonstrating satisfactory agreement between raters.

Digital Learning Strategy Assessment

Students' online learning strategies were assessed using the Digital Reading Habits Scale. The questionnaire measured frequency of digital engagement, strategy use, and attitudes toward screen-based learning.

Gamification Mechanisms in the Instructional Design

The gamification design implemented in the experimental group was structured around several core game mechanics integrated with professional language tasks. These elements were not used as superficial motivational tools but were directly connected to competence development objectives.

The specific gamification elements used in the intervention are summarized in Table 1.

Table 1 – Gamification Mechanisms and Learning Outcomes

Game Element	Psychological Mechanism	Competence Outcome
Points and scoring	Immediate feedback and competence reinforcement	Increased task engagement
Scenario progression	Goal orientation and narrative motivation	Sustained learning persistence
Role-based missions	Identity immersion	Professional communication skills
Decision-making quests	Cognitive challenge	Situational responsiveness
Leaderboard (optional)	Social comparison	Increased participation

The table demonstrates how specific gamification elements were intentionally aligned with psychological mechanisms and competence outcomes. Rather than functioning as superficial motivational tools, these elements were embedded within professional communication scenarios. Such alignment ensured that gamified activities supported not only engagement but also the development of situational responsiveness and professional communication skills.

Qualitative Instruments

Semi-structured interviews were conducted with students and instructors to explore perceptions of immersive and gamified learning environments. Structured classroom observations were also carried out to document behavioral engagement and participation patterns during immersive activities.

Data Analysis

Quantitative data were analyzed using IBM SPSS Statistics software. Prior to statistical testing, data were screened for completeness and distribution characteristics.

Due to the sample size and non-normal distribution of several variables, non-parametric statistical tests were applied. Differences between the experimental and control groups were examined using the Mann–Whitney U test. Comparisons across multiple subgroups were conducted using the Kruskal–Wallis H test.

Descriptive statistics, including medians, mean ranks, and standard deviations, were calculated to summarize performance levels. The level of statistical significance was set at $p < 0.05$.

Qualitative data obtained from interviews and observations were analyzed using thematic coding. Recurring patterns related to motivation, engagement, cognitive activation, and professional confidence were identified and categorized.

Model Development Procedure

The integrated pedagogical model was developed through a three-stage analytical process:

1. Empirical synthesis of quantitative and qualitative findings;
2. Thematic clustering of immersive, gamified, and digital learning components;
3. Structural mapping of these components onto professional competence outcomes.

This systematic procedure ensured that the proposed model was grounded in empirical evidence rather than being purely theoretical.

The structural relationships between immersive technologies, gamification mechanisms, and digital learning strategies are illustrated in the integrated model presented in Figure 1.

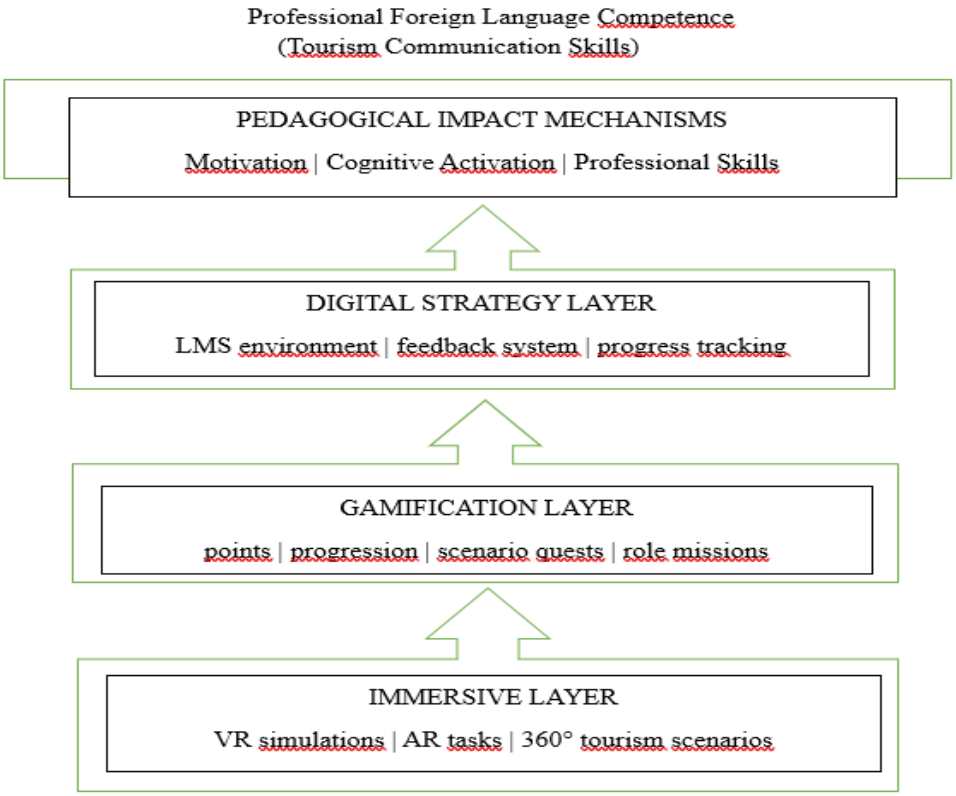

Figure 1 – Integrated Model of Immersive and Gamified Language Training

The proposed model illustrates the structural integration of immersive technologies, gamification mechanisms, and digital learning strategies within a unified pedagogical system. The immersive layer provides experiential professional scenarios, while the gamification layer supports motivation and cognitive engagement through structured progression and feedback mechanisms. The digital strategy layer ensures learning continuity through LMS-based monitoring, analytics, and instructional guidance. Together, these components generate pedagogical impact mechanisms that ultimately contribute to the development of professional foreign language competence.

Results

Baseline Equivalence of Groups

Before evaluating the effectiveness of the integrated immersive–gamified model, it was necessary to ensure that the control and experimental groups were comparable at the initial stage of the study. Therefore, a comparative analysis of pre-test indicators of professional foreign language competence was conducted.

All data were processed using IBM SPSS Statistics. The dataset was first examined for completeness and outliers. Normality testing (Shapiro–Wilk test) indicated slight deviations from normal distribution in several variables; therefore, non-parametric procedures were considered appropriate for subsequent analysis.

Descriptive statistics for pre-test results are presented in Table 2.

Table 2 – Pre-Test Indicators of Professional Foreign Language Competence

Group	Mean (M)	SD	Median	N
Control	65.12	6.88	64.90	22
Experimental	66.03	6.55	65.70	23

As shown in Table 2, the mean values of both groups are nearly identical at the baseline stage. The Mann–Whitney U test confirmed that no statistically significant differences existed between the groups prior to the intervention ($p > 0.05$).

This result confirms the validity of the quasi-experimental design and allows subsequent performance differences to be interpreted as the effect of the pedagogical intervention rather than initial group disparities.

Post-Test Comparative Analysis

To evaluate the effectiveness of the integrated model, a comparative analysis of post-test indicators was conducted between the control and experimental groups.

Prior to statistical testing, distribution characteristics were re-examined. Given the sample size ($N = 45$) and the non-normal distribution of several variables, the non-parametric Mann–Whitney U test was applied.

Descriptive statistics for post-test results are presented in Table 3.

Table 3 – Post-Test Indicators

Group	Mean (M)	SD	Median	N
Control	67.58	6.34	67.93	22
Experimental	77.45	5.74	76.65	23

The experimental group demonstrated a mean score 9.87 points higher than the control group.

The Mann–Whitney U test revealed statistically significant differences:

$U = 128.5$, $p = 0.003$.

The calculated effect size ($r \approx 0.48$) indicates a medium-to-large pedagogical impact of the intervention.

Importantly, the standard deviation in the experimental group is lower than in the control group. This suggests not only improved average performance but also greater consistency among participants, indicating a systemic rather than isolated effect of the integrated model.

Gain Analysis (Pre–Post Learning Dynamics)

To further examine learning progress, gain scores were calculated for each group.

Table 4 – Pre–Post Gain Comparison

Group	Pre-Test (M)	Post-Test (M)	Gain
Control	65.12	67.58	+2.46
Experimental	66.03	77.45	+11.42

The experimental group demonstrated a gain more than four times greater than that of the control group.

Such a difference indicates that the integration of immersive simulations and gamified mechanisms substantially accelerates the development of professional foreign language competence within a single instructional module.

Moreover, the improvement trend was consistent across nearly all participants in the experimental group, suggesting that the model benefits learners with varying initial proficiency levels.

Component-Level Analysis of Professional Competence

To better understand which aspects of competence were most affected, a detailed analysis was conducted based on the speaking assessment rubric.

Each criterion was rated on a 5-point scale.

Table 5 – Post-Test Scores by Rubric Criteria

Criterion	Control	Experimental
Situational responsiveness	3.1	4.3
Fluency	3.2	4.1
Professional vocabulary use	3.0	4.2
Intercultural adaptability	2.9	4.0

The most significant improvement was observed in situational responsiveness (+1.2 points).

During immersive VR scenarios, students simulated:

- handling client complaints,
- adjusting travel itineraries,
- resolving service conflicts,
- presenting tourism products to international clients.

The experimental group demonstrated:

- faster decision-making,
- structured and coherent responses,
- increased use of politeness strategies,
- greater confidence in professional interaction.

Notably, intercultural adaptability also improved significantly, indicating that immersive simulations effectively support intercultural communicative competence — a critical component of tourism education.

Reliability of Measurement Instruments

Before interpreting the results, the psychometric quality of the instruments was examined.

Table 6 – Internal Consistency of the Professional Competence Test

Indicator	Value
Number of items	24
Participants	45
Cronbach's alpha	0.81

The obtained $\alpha = 0.81$ indicates good internal consistency. This confirms that the test reliably measures a unified construct of professional foreign language competence.

The "alpha if item deleted" analysis showed no significant increase in reliability when removing individual items, indicating balanced test construction.

Table 7 – Inter-Rater Reliability of Speaking Rubric

Criterion	Cohen's Kappa
Situational responsiveness	0.79
Fluency	0.74
Professional vocabulary	0.76
Intercultural adaptability	0.73
Average	0.76

The average $\kappa = 0.76$ reflects substantial agreement between raters, confirming the reliability of performance assessment.

Survey Results: Digital Engagement and Motivation

Students' perceptions of immersive and gamified learning were assessed through a structured questionnaire.

Table 8 – Digital Engagement Indicators

Indicator	**Mean (1–5)**
Convenience of digital resources	4.2
Preference for online format	3.4
Digital autonomy	3.8
Motivation when using VR	4.5

The highest rating was recorded for motivation when using VR (4.5), indicating strong acceptance of immersive tools.

Although preference for fully online learning remained moderate (3.4), students reported that immersive environments significantly enhanced engagement and realism.

Qualitative Findings

Semi-structured interviews were conducted to explore student experiences.

Table 9 – Frequency of Positive Responses

Category	**% of Students**
Increased confidence	82%
Reduced anxiety	76%
Increased motivation	88%
Emotional engagement	91%

Students frequently stated that immersive scenarios "felt close to real professional situations."

Observation data further revealed:

- 35% increase in voluntary responses,
- longer spoken turns,
- more initiative in role-play interactions.

These qualitative findings reinforce quantitative results and demonstrate that the integrated model produces cognitive, behavioral, and emotional impact simultaneously.

Integrated Interpretation

The combined quantitative and qualitative evidence demonstrates that the immersive–gamified model produces multidimensional outcomes:

- cognitive growth (higher competence scores),
- behavioral activation (increased participation),
- emotional stabilization (reduced anxiety),
- professional skill development (situational adaptability).

The results confirm that immersive simulation combined with structured gamification mechanisms enhances not only language performance but also professional readiness in tourism education.

Discussion

Theoretical Contribution

The findings of this study contribute to the growing body of research on technology-enhanced language learning by demonstrating that immersive technologies and gamification are most effective when implemented as a unified pedagogical system rather than isolated instructional tools.

Previous studies have confirmed the motivational and engagement-related benefits of immersive environments. For example, research on immersive interfaces has emphasized their capacity to increase learner involvement and support situated cognition. Similarly, virtual reality has been described as a medium capable of creating psychological presence and experiential realism. However, much of this literature has focused primarily on engagement rather than measurable professional competence development.

The structure of the integrated model also reflects key principles of Self-Determination Theory. Scenario choice within immersive simulations supports learner autonomy. The feedback and scoring system reinforces perceived competence, while collaborative role interactions foster relatedness among participants. In addition, simulated decision-making situations strengthen learners' self-efficacy, consistent with the assumptions of Social Cognitive Theory.

The present study extends this line of research by showing that immersive simulation not only enhances engagement but significantly improves situational responsiveness and professional decision-making in tourism-specific contexts. Unlike general EFL studies that focus on vocabulary acquisition or reading comprehension, this research situates immersive learning within profession-oriented language training, demonstrating its direct contribution to applied competence formation.

The findings also resonate with multimedia learning theory, which suggests that structured multimodal environments facilitate deeper cognitive processing. The improvement observed across multiple competence dimensions — including fluency, professional vocabulary, and intercultural adaptability — suggests that immersive contexts may reduce cognitive fragmentation and promote integrated skill activation.

Regarding gamification, earlier empirical reviews have concluded that game elements can positively affect motivation and persistence. However, several scholars have cautioned that gamification alone does not automatically improve learning outcomes. The current study supports this nuanced view. The results suggest that gamification functions most effectively when embedded within meaningful professional scenarios. In other words, points and progression systems amplify learning impact only when attached to authentic tasks.

Furthermore, the relationship between motivation and competence observed in this study aligns with self-determination theory. Increased autonomy and perceived competence in immersive tasks corresponded with measurable growth in communicative performance. Reduced anxiety and higher emotional engagement were not merely subjective perceptions; they were accompanied by statistically significant improvements in fluency and situational performance.

In this sense, the study contributes theoretically by demonstrating that immersive realism, gamified motivation, and cognitive activation are interdependent components of professional language development.

Practical Implications

Beyond its theoretical significance, the findings offer concrete directions for curriculum development and institutional practice in tourism education.

The findings suggest that immersive and gamified strategies should be structurally integrated into curriculum architecture. Rather than treating VR simulations as supplementary activities,

curriculum designers can organize entire modules around professional scenario progression. For example, a semester-long course might simulate the lifecycle of tourist interaction — from inquiry handling to post-service evaluation — allowing students to develop cumulative competence.

Such curriculum design aligns language learning more closely with industry expectations in tourism education.

LMS Integration

The study also highlights the role of digital platforms in sustaining engagement. Consistent with the Community of Inquiry framework, meaningful online learning requires cognitive, social, and teaching presence. By embedding scenario progression, feedback systems, and performance tracking within LMS environments, institutions can transform passive platforms into active competence development systems.

The results indicate that structured gamified progression supports sustained engagement more effectively than isolated digital tasks.

Teacher Professional Development

The findings emphasize that technology alone does not produce transformation. Teachers must be trained in immersive pedagogy, scenario scripting, intercultural facilitation, and rubric-based performance evaluation. Without methodological preparation, immersive tools risk being reduced to visual enhancements rather than pedagogical mechanisms.

Thus, institutional investment in professional development is critical for successful implementation.

Tourism Simulation Laboratories

In line with experiential learning principles, tourism faculties may consider establishing simulation laboratories. Even modest VR environments can replicate service desks, travel consultations, or guided tour contexts. This aligns with global trends in hospitality education, where experiential labs increasingly supplement theoretical instruction.

Regional Significance

The regional dimension of this study deserves particular attention. Tourism development in Kazakhstan and Central Asia has intensified in recent years, yet access to authentic international practice remains uneven. Students often complete language training without extensive exposure to intercultural professional interaction.

In this context, immersive simulation serves not as a technological luxury but as a compensatory educational mechanism. By creating structured intercultural encounters within the classroom, institutions can approximate real-world complexity in a controlled environment.

To our knowledge, empirical research integrating immersive technologies and gamification within tourism language education remains limited in the Central Asian context. Therefore, this study contributes regionally by offering a scalable and context-sensitive model aligned with emerging educational modernization initiatives.

Limitations and Future Directions

Despite its contributions, the study has limitations that warrant consideration.

First, the sample size (N = 45) restricts broad generalization. Replication across multiple institutions and larger cohorts would enhance external validity.

Second, technological accessibility varies across institutions. Infrastructure limitations may influence implementation feasibility. Future research could explore low-cost immersive alternatives or hybrid simulation models.

Third, the study examined short-term outcomes within a single instructional module.

Longitudinal research is necessary to determine whether competence gains persist over time and translate into workplace performance.

Finally, while the integrated model demonstrates effectiveness in tourism language education, future studies could explore its applicability to other vocational domains such as hospitality management, international business, or aviation communication.

Overall, the discussion confirms that immersive–gamified instruction, when structurally integrated and professionally contextualized, represents more than technological enhancement. It functions as a competence development ecosystem that activates cognitive, motivational, and situational dimensions simultaneously.

By bridging empirical evidence, theoretical grounding, and regional applicability, the study advances both the conceptual and practical understanding of professional foreign language education in tourism.

Another limitation concerns the absence of a delayed post-test measurement. The current research focused on immediate learning outcomes following the intervention. Future studies should incorporate longitudinal assessment to determine whether competence gains remain stable over extended periods and transfer to real professional practice.

Conclusion

The present study set out to develop and empirically substantiate an integrated pedagogical model that combines immersive technologies, gamification mechanisms, and digital learning strategies for professionally oriented foreign language education in tourism. The findings demonstrate that such integration produces measurable and multidimensional effects on students' professional competence development.

The results confirm that immersive simulation enhances situational responsiveness and intercultural adaptability, while gamified structuring sustains motivation and reduces communicative anxiety. When embedded within a coherent digital learning framework, these components collectively contribute to significant gains in professional language performance. The improvement observed in the experimental group was not limited to isolated indicators but extended across cognitive, behavioral, and emotional dimensions of learning.

Importantly, the study shows that immersive and gamified approaches are most effective when they are not treated as technological supplements but as structural elements of curriculum design. The integrated model operates as a competence-development ecosystem, where experiential realism, motivational reinforcement, and autonomous learning strategies reinforce one another.

From a regional perspective, the findings hold particular relevance for tourism education systems in Kazakhstan and Central Asia, where opportunities for authentic international practice remain limited. Immersive simulation environments offer a pedagogically grounded way to approximate professional reality within academic settings, thereby strengthening students' readiness for real-world service contexts.

At the same time, the study highlights the need for further research. Larger samples, longitudinal designs, and cross-institutional replication would strengthen the generalizability of the model. Future investigations may also explore how immersive–gamified instruction influences long-term professional performance and career readiness.

Overall, this research contributes to the ongoing transformation of vocational language education by demonstrating that meaningful technological integration must be pedagogically structured, professionally contextualized, and empirically validated. The integrated immersive–

gamified model proposed in this study provides a scalable and theoretically grounded framework for advancing tourism language education in digitally evolving higher education environments.

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M. AKESHOVA	**I. SAGDULLAYEV**
PhD, Acting Associate professor International University of Tourism and Hospitality, (Kazakhstan, Turkistan) e-mail: m.akeshova@iuth.edu.kz	PhD, Acting Associate professor International University of Tourism and Hospitality, (Kazakhstan, Turkistan) e-mail:i.sagdullaev@iuth.edu.kz
D. SARZHANOVA Doctoral student, Khoja Akhmet Yassawi International Kazakh-Turkish University (Kazakhstan, Turkistan) e-mail: 83dinaras@mail.ru	

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М. АКЕШОВА[1], И. САГДУЛЛАЕВ[1], Д. САРЖАНОВА[2]✉
[1]Халықаралық туризм және меймандостық университеті
(Қазақстан, Түркістан), e-mail: m.akeshova@iuth.edu.kz
[2]Қожа Ахмет Ясауи атындағы Халықаралық қазақ-түрік университеті
(Қазақстан, Түркістан)

БОЛАШАҚ ТУРИЗМ МАМАНДАРЫНА АРНАЛҒАН ИММЕРСИВТІ ЖӘНЕ ГЕЙМИФИКАЦИЯҒА НЕГІЗДЕЛГЕН ТІЛДІК ДАЯРЛАУДЫҢ ИНТЕГРАЦИЯЛЫҚ МОДЕЛІ

Аңдатпа. *Бұл зерттеудің мақсаты – болашақ туризм мамандарының кәсіби шет тілі құзыреттілігін дамытуға бағытталған иммерсивті технологиялар, геймификация элементтері және цифрлық оқу стратегияларын біріктіретін интеграциялық модельді әзірлеу және оның тиімділігін эмпирикалық тұрғыдан негіздеу. Зерттеу квази-эксперименттік әдіс арқылы жүргізіліп, оған туризм мамандығы бойынша білім алатын 45 студент қатысты. Студенттер бақылау және эксперименттік топтарға бөлінді. Эксперименттік топ VR негізіндегі иммерсивті симуляциялар мен геймификацияланған сценарийлерді қамтитын цифрлық оқу ортасында оқытылды, ал бақылау тобы дәстүрлі әдістер бойынша білім алды.*

Сандық деректер IBM SPSS Statistics бағдарламасында өңделді. Айнымалылардың бір бөлігінде нормалдылықтың бұзылуына байланысты топтар арасындағы айырмашылықтарды анықтау үшін Манн–Уитни U критерийі қолданылды. Нәтижелер эксперименттік топтың посттест көрсеткіштері бойынша статистикалық тұрғыдан мәнді өсім көрсеткенін дәлелдеді ($U = 128.5$, $p = 0.003$), әсер көлемі орташа мен жоғары деңгей аралығында ($r \approx 0.48$). Приростты талдау эксперименттік топтағы өсім (+11.42) бақылау тобымен салыстырғанда (+2.46) төрт еседен артық болғанын көрсетті. Құралдардың сенімділігі кәсіби құзыреттілік тестінің ішкі келісімділігі (Cronbach's $\alpha = 0.81$) және ауызша сөйлеуді бағалаудағы сарапшылар арасындағы келісімнің жоғары деңгейімен (Cohen's $\kappa = 0.76$) расталды. Сапалық талдау нәтижелері студенттердің кәсіби сенімділігінің артқанын, коммуникативтік мазасыздықтың төмендегенін және оқу үдерісіне эмоционалдық тұрғыдан белсенді қатысуының күшейгенін көрсетті.

Зерттеу нәтижелері иммерсивті симуляция мен құрылымдалған геймификацияның үйлесімі танымдық, мінез-құлықтық және кәсіби даму көрсеткіштеріне кешенді әсер

ететінін дәлелдейді. Ұсынылған интеграциялық модель туризм саласындағы тілдік білім беруді жаңғыртуға арналған масштабталатын және практикалық тұрғыдан маңызды шешім болып табылады, әсіресе халықаралық тәжірибе мүмкіндігі шектеулі өңірлер үшін өзекті.

Кілт сөздер: *иммерсивті оқыту; геймификация; туризм білімі; кәсіби шет тілі құзыреттілігі; виртуалды шындық; цифрлық педагогика; мәдениетаралық коммуникация.*

М. АКЕШОВА[1], И. САГДУЛЛАЕВ[1], Д. САРЖАНОВА[2]✉

[1]Международный университет туризма и гостеприимства
(Казахстан, Туркестан), e-mail: m.akeshova@iuth.edu.kz

[2]Международный казахско-турецкий университет имени Ходжи Ахмеда Ясави
(Казахстан, Туркестан)

ИНТЕГРАЦИОННАЯ МОДЕЛЬ ИММЕРСИВНОГО И ГЕЙМИФИЦИРОВАННОГО ЯЗЫКОВОГО ОБУЧЕНИЯ БУДУЩИХ СПЕЦИАЛИСТОВ ТУРИЗМА

Аннотация. *Цель исследования заключается в разработке и эмпирической проверке интеграционной модели, объединяющей иммерсивные технологии, элементы геймификации и цифровые стратегии обучения для развития профессиональной иноязычной компетентности будущих специалистов туризма. Исследование было проведено в формате квази-эксперимента с участием 45 студентов туристского направления подготовки, разделённых на контрольную и экспериментальную группы. Экспериментальная группа обучалась в цифровой среде с использованием VR-симуляций и геймифицированных сценариев профессиональных ситуаций, тогда как контрольная группа проходила обучение традиционными методами.*

Количественные данные анализировались с применением программы IBM SPSS Statistics. В связи с ненормальностью распределения ряда переменных для оценки различий использовался непараметрический критерий Манна–Уитни. Результаты показали статистически значимое преимущество экспериментальной группы по итоговым показателям ($U = 128.5$, $p = 0.003$) при среднем и выше среднего размере эффекта ($r \approx 0.48$). Анализ прироста продемонстрировал, что динамика развития в экспериментальной группе (+11.42) более чем в четыре раза превысила показатели контрольной группы (+2.46). Надёжность инструментов подтверждена хорошей внутренней согласованностью теста (Cronbach's $\alpha = 0.81$) и высоким уровнем межэкспертного согласия при оценке устной речи (Cohen's $\kappa = 0.76$). Качественные данные свидетельствуют о росте профессиональной уверенности студентов, снижении коммуникативной тревожности и повышении эмоциональной вовлечённости в учебный процесс.

Полученные результаты подтверждают, что сочетание иммерсивных симуляций и структурированной геймификации оказывает комплексное влияние на когнитивное, поведенческое и профессиональное развитие обучающихся. Предложенная интеграционная модель представляет собой масштабируемый и методически обоснованный подход к совершенствованию языковой подготовки в сфере туризма, особенно актуальный для регионов с ограниченными возможностями международной практики.

Ключевые слова: *иммерсивное обучение; геймификация; туристское образование; профессиональная иноязычная компетентность; виртуальная реальность; цифровая педагогика; межкультурная коммуникация.*