



ПЕДАГОГИКА – PEDAGOGY

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DIGITAL GAMIFICATION AS A MEANS OF INCREASING STUDENTS' MOTIVATION AND COMMUNICATIVE ACTIVITY

Annotation. This article examines digital gamification as a pedagogical means of increasing students' motivation and communicative activity in the context of foreign language learning. The relevance of the topic is determined by the growing role of digital educational platforms, interactive feedback and student-centred learning trajectories. The purpose of the study is to substantiate the methodological potential of digital gamification and to demonstrate how its effectiveness can be evaluated through pre- and post-diagnostics. The theoretical part analyses Kazakhstani, Russian-language and international literature on digital education, game technologies, gamification tools, motivation and communication in language learning. The practical part of the research was conducted at Samara State Agrarian University. The empirical part is presented as a model quasi-experimental pilot design with an experimental group and a control group. In the experimental model, students complete communicative tasks through points, levels, badges, quests, team missions and immediate digital feedback, while the control group studies the same content in a traditional format. The Results section demonstrates the calculation of Cohen's *d* for motivation and communicative activity. The model data show a large effect size in the experimental group, indicating that well-designed digital gamification can strengthen students' involvement, reduce communicative anxiety and increase the frequency of meaningful interaction in class. The article concludes that digital gamification is effective when game elements are subordinated to clear learning outcomes and are combined with reflection, collaboration and criterion-based assessment.

Keywords: digital gamification; student motivation; communicative activity; foreign language learning; digital tools; game elements; Cohen's *d*; interactive learning.

Introduction

The digital transformation of education has changed not only the technological infrastructure of learning, but also the logic of student participation. In higher education and language education, students are expected to act not as passive recipients of information, but as active participants who plan, perform, evaluate and improve their own learning actions. This is especially important in foreign language classes, where the result of learning is visible not only in written tests, but also in the ability to communicate, respond to partners, negotiate meanings, and express ideas in real time.

Motivation remains one of the most important conditions for successful learning in a digital environment. Research on students' motivation in the digital educational environment shows that the availability of digital tools does not automatically lead to sustainable engagement; the educational task must be meaningful, emotionally attractive and supported by self-regulation mechanisms [1]. Therefore, the key methodological question is not whether



digital technologies should be used, but how they should be designed so that students experience progress and see the value of participation.

In this regard, digital gamification is becoming a relevant pedagogical approach. In Kazakhstani research, gamification tools are considered as software and methodological resources that can increase learners' interest and participation in various educational tasks, including platforms, educational quests and learning management services [2]. The value of this approach lies in the fact that students do not simply receive a task; they enter a structured learning environment where effort, collaboration and progress are made visible.

The communicative dimension is equally significant. Studies of game technologies in language teaching emphasise that games and role-based tasks help learners overcome fear of mistakes, support interaction and develop speech skills in a more natural learning situation [3]. In foreign language learning, this is particularly important because communicative activity depends not only on linguistic knowledge, but also on confidence, emotional safety and the need to speak for a clear purpose.

The purpose of this article is to analyse digital gamification as a means of increasing students' motivation and communicative activity and to demonstrate a model procedure for evaluating its effectiveness using Cohen's *d*. The research tasks are: first, to define the pedagogical essence of digital gamification; second, to identify its motivational and communicative mechanisms; third, to propose a model of gamified language learning tasks; fourth, to show how changes in motivation and communicative activity can be measured quantitatively.

Literature review and theoretical framework

In the Russian-language pedagogical literature, gamification is usually understood as the integration of game elements into a non-game educational process for the purpose of increasing interest, involvement and productive behaviour. K. V. Shokarev notes that gamification in foreign language teaching can strengthen motivation and involvement, but its effectiveness depends on the quality of methodological design and on the avoidance of purely external rewards [4]. This position is important because it prevents a simplified interpretation of gamification as the mechanical addition of points or badges.

K. A. Tatarinov considers gamification as a system of mechanisms that can influence engagement and students' behavioural habits in learning. His analysis shows that points, levels, tasks, online tests and result tables can become motivational tools when they are connected with meaningful educational activity and not reduced to entertainment [5]. For language education, this means that every game element must be linked with a communicative action: asking a question, preparing an argument, presenting a mini-project, negotiating in a pair or reflecting on feedback.

The use of digital technologies in foreign language teaching is closely connected with the communicative approach. O. A. Chudnova, S. A. Mikhienko and N. V. Poddubnaya argue that digital technologies in a non-linguistic university should be combined with traditional methods aimed at the development of communicative competence and live interaction in the group [6]. This idea is directly relevant to digital gamification: a gamified platform should not replace classroom communication, but should organise and intensify it.

Recent empirical discussions of gamification in foreign language learning also point to its motivational potential. O. V. Yeremina and G. B. Sidikova describe gamification as a tool for increasing students' motivation in language learning through mechanisms such as levels, ratings, progress bars, badges and digital platforms [7]. Their work is useful for the present



article because it combines theoretical explanation with practical examples from language learning platforms.

The methodological potential of gamification in a linguistic university has been linked with the reduction of routine and fatigue in foreign language study. M. N. Pozdniakova and G. I. Panarina show that properly selected games can increase interest in the subject and make language acquisition more effective, especially when students face repetitive vocabulary and grammar tasks [8]. This means that gamification should be used not as a decorative technique, but as a way to restructure repeated practice into visible progress.

Communicative games have a special place in this context. A. A. Khokhlova and A. A. Nechaeva demonstrate that communication games in a technical university can create situations that stimulate students' need to speak and support the development of communicative skills [9]. Digital gamification develops this logic further: it can add a scenario, mission, time limit, peer evaluation or team outcome to the communicative task.

International studies provide a broader conceptual basis. S. Deterding and co-authors define gamification as the use of game design elements in non-game contexts [10]. This definition helps distinguish gamification from full game-based learning: students do not necessarily play a complete educational game; instead, selected elements of game design are integrated into ordinary learning tasks.

A systematic review of gamification in EFL and ESL instruction by S. Zhang and Z. Hasim shows that gamified language learning has been studied in relation to vocabulary, grammar, speaking, reading, writing, motivation and engagement, while also requiring attention to drawbacks such as technical problems, short-lived effects and excessive competition [11]. Thus, digital gamification should be evaluated not only by students' enjoyment, but also by measurable learning and communication outcomes.

For evaluating the magnitude of pedagogical change, Cohen's *d* remains one of the most widely used effect-size indicators. It allows researchers to interpret whether the observed difference between pre- and post-test indicators is small, medium or large, rather than relying only on the fact that scores increased [12]. In this article, Cohen's *d* is used to demonstrate how the impact of a gamified intervention on motivation and communicative activity can be presented in a compact and transparent way.

Materials and Methods

The methodological basis of the article is a mixed theoretical and model-empirical design. The theoretical stage included the analysis of scientific literature on digital education, gamification, motivation and communicative activity. The model empirical stage demonstrates how a small-scale pedagogical intervention can be organised and evaluated. The numerical values in the Results section are presented as model pilot data for illustrating the calculation procedure; they should be replaced with actual institutional data if the article is submitted on the basis of a real experiment.

The practical part of the research was conducted at Samara State Agrarian University. The model design includes 60 first-year university students studying English as a foreign language. The experimental group includes 30 students, and the control group includes 30 students. Both groups are assumed to have comparable initial language levels and similar course content. The duration of the model intervention is eight weeks. During this period, both groups work with the same thematic units: student life, digital communication, professional self-presentation, problem solving and intercultural communication.

The difference between the groups is the mode of task organisation. In the experimental group, the same learning content is structured through digital gamification. Students receive



weekly missions, collect points for completed communicative tasks, move through levels, obtain badges for specific achievements, participate in team quests and receive immediate feedback through digital tools such as Kahoot!, Quizizz, Padlet, Google Forms and a learning management system. In the control group, tasks are performed in a traditional format without a unified system of points, levels, badges and digital progress visualisation.

Two main indicators are measured before and after the intervention. The first indicator is learning motivation, assessed with a 20-point questionnaire covering interest, persistence, willingness to complete additional tasks and perceived usefulness of English. The second indicator is communicative activity, assessed with a 20-point observation rubric covering frequency of participation, length of utterance, initiative in pair or group work, response to peers and readiness to speak without direct teacher prompting.

Table 1 - Model structure of digital gamification in the experimental group

Component	Digital form	Pedagogical function	Expected effect
Points	Automatic scores after quizzes and tasks	Visible record of effort	Higher task completion
Levels	Weekly progress stages	Step-by-step learning trajectory	Sustained motivation
Badges	Digital awards for speaking, teamwork and reflection	Recognition of specific achievements	Positive feedback
Team quests	Group problem-solving missions	Peer interaction and negotiation	More communication
Progress bar	Personal dashboard	Self-monitoring	Awareness of growth
Reflection card	Short online self-assessment	Metacognitive control	Better self-regulation

Note: compiled by the author as a model design for a gamified foreign language course.

The effect size is calculated using Cohen's d for paired measurements in the experimental group:

$$d_z = (M_{post} - M_{pre}) / SD_{diff}$$

where M_{post} is the post-test mean score, M_{pre} is the pre-test mean score, and SD_{diff} is the standard deviation of individual differences between pre- and post-test results.

Results

The model results show that both groups improved by the end of the eight-week period, but the experimental group demonstrated stronger positive dynamics. This difference is especially visible in motivation and communicative activity. While the control group showed moderate growth that can be explained by regular learning practice, the experimental group showed a more substantial increase connected with progress visualisation, immediate feedback and collaborative missions.

Table 2 - Pre- and post-test dynamics of motivation and communicative activity

Group	Indicator	Pre-test M	Post-test M	Mean gain	Interpretation
Experimental	Motivation	11.8	16.4	4.6	Strong positive growth
Experimental	Communicative activity	10.9	15.7	4.8	Strong positive growth
Control	Motivation	12.0	13.1	1.1	Moderate growth
Control	Communicative activity	11.0	12.2	1.2	Moderate growth

Note: M - mean score on a 20-point scale; model pilot data are used for methodological demonstration.

For motivation in the experimental group, the mean gain was 4.6 points. If the standard deviation of the individual differences is 3.2, Cohen's d is calculated as follows:

$$d_z = 4.6 / 3.2 = 1.44$$



For communicative activity in the experimental group, the mean gain was 4.8 points. If the standard deviation of the individual differences is 3.5, Cohen's d is calculated as follows:

$$d_z = 4.8 / 3.5 = 1.37$$

Both values exceed the conventional threshold for a large effect. This means that, within the model calculation, the growth in the experimental group is not only numerically visible, but also pedagogically meaningful. The strongest qualitative changes are expected in students' readiness to speak, frequency of voluntary participation, willingness to correct mistakes, and persistence in completing tasks after receiving feedback.

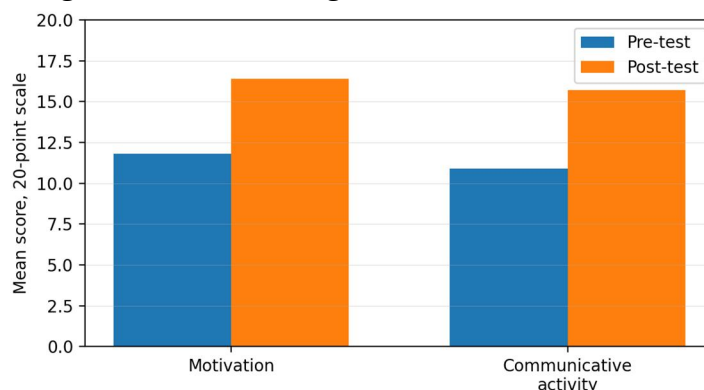


Figure 1 - Dynamics of motivation and communicative activity in the experimental group

Figure 1 demonstrates that the post-test values of both indicators are higher than the pre-test values. The growth of motivation from 11.8 to 16.4 points indicates that students become more interested in learning when progress is visible and feedback is immediate. The growth of communicative activity from 10.9 to 15.7 points suggests that digital gamification can create more reasons for students to speak, cooperate and initiate interaction.

Discussion

The obtained model results can be interpreted through three interconnected mechanisms. The first mechanism is progress visibility. In traditional instruction, students often complete tasks without seeing how each action contributes to their general development. A gamified digital environment transforms isolated tasks into a visible trajectory. Points, levels and progress bars do not replace assessment, but they help students understand that learning consists of small achievable steps.

The second mechanism is emotional involvement. Foreign language communication often creates anxiety because students are afraid of making mistakes in front of their peers. In a gamified environment, the task is framed as a mission or challenge, which reduces the psychological weight of the error. A wrong answer becomes part of the attempt, not a sign of failure. This is especially important for communicative activity, because students need a safe atmosphere in which they can test language forms and receive feedback.

The third mechanism is social interaction. Team quests, pair missions and peer voting make communication necessary for completing the task. As a result, students do not speak only because the teacher asks them to speak; they speak because the game scenario requires negotiation, explanation, argument or joint decision-making. This makes language use more functional and closer to real communicative situations.

At the same time, digital gamification has limitations. If points and rankings become the main purpose of learning, students may focus on external rewards rather than on language development. Excessive competition can also reduce cooperation and create tension among



students with different levels of preparation. Therefore, the teacher should combine competitive elements with collaborative tasks, individual progress and reflection.

Another limitation is technological inequality. Students may differ in access to devices, internet stability and digital literacy. For this reason, a gamified course should include simple tools, alternative formats and clear instructions. The best digital gamification is not the most technically complicated one, but the one that supports the learning goal without distracting students from communication.

The model presented in this article is applicable to university foreign language courses, but it can also be adapted for school classes, professional English, academic writing and blended learning. Its main methodological condition is the alignment between game element and educational outcome. Points should correspond to completed learning actions; badges should mark specific skills; quests should require authentic communication; reflection cards should help students understand what they have learned and what they should improve next.

Conclusion

Digital gamification can be considered an effective means of increasing students' motivation and communicative activity when it is methodologically grounded and connected with clear learning outcomes. Its pedagogical value is not limited to entertainment. Properly organised gamification helps students see progress, receive immediate feedback, participate in meaningful interaction and develop self-regulation.

The model Results section demonstrates that changes in motivation and communicative activity can be evaluated not only descriptively, but also quantitatively. Cohen's d values of 1.44 for motivation and 1.37 for communicative activity indicate a large model effect in the experimental group. Such calculations make it possible to present the pedagogical impact of digital gamification in a more convincing and transparent way.

The practical significance of the article lies in the proposed structure of a gamified foreign language course. Teachers can use points, levels, badges, team quests, progress bars and reflection cards, but each element should serve a communicative or motivational function. Further research should test this model with real institutional data, a larger sample and a longer intervention period, comparing different digital platforms and types of gamified tasks.

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Толстова О.С.

ЦИФРЛЫҚ ГЕЙМИФИКАЦИЯ СТУДЕНТТЕРДІҢ МОТИВАЦИЯСЫ МЕН КОММУНИКАТИВТІК БЕЛСЕНДІЛІГІН АРТТЫРУ ҚҰРАЛЫ РЕТІНДЕ

Андатпа. Бұл мақалада цифрлық геймификация шетел тілін оқыту үдерісінде студенттердің мотивациясы мен коммуникативтік белсенділігін арттырудың педагогикалық құралы ретінде қарастырылады. Тақырыптың өзектілігі цифрлық білім беру платформаларының, интерактивті кері байланыстың және студентке бағытталған оқу траекторияларының рөлінің артуымен айқындалады. Зерттеудің мақсаты – цифрлық геймификацияның әдістемелік әлеуетін негіздеу және оның тиімділігін бастапқы және қорытынды диагностика арқылы бағалау жолдарын көрсету. Теориялық бөлімде цифрлық білім



беру, ойын технологиялары, геймификация құралдары, мотивация және тіл үйренудегі коммуникация мәселелері бойынша қазақстандық, орыс тілді және халықаралық әдебиеттерге талдау жасалады. Зерттеудің практикалық бөлігі Самара мемлекеттік аграрлық университеті базасында жүргізілді. Эмпирикалық бөлім эксперименттік және бақылау топтарын қамтитын квазиэксперименттік пилоттық зерттеу үлгісі ретінде ұсынылған. Эксперименттік модельде студенттер ұпайлар, деңгейлер, белгілер, квесттер, топтық миссиялар және жедел цифрлық кері байланыс арқылы коммуникативтік тапсырмаларды орындайды, ал бақылау тобы сол мазмұнды дәстүрлі форматта меңгереді. «Нәтижелер» бөлімінде мотивация мен коммуникативтік белсенділік бойынша Коэннің d коэффициентінің есебі көрсетілген. Модельдік деректер эксперименттік топта әсер көлемінің жоғары екенін көрсетеді, бұл дұрыс ұйымдастырылған цифрлық геймификация студенттердің оқу үдерісіне қатысуын арттырып, коммуникативтік мазасыздықты төмендетіп, сабақтағы мағыналы өзара әрекеттесу жиілігін көбейтетінін дәлелдейді. Мақалада цифрлық геймификация ойын элементтері нақты оқу нәтижелеріне бағындырылып, рефлексиямен, ынтымақтастықпен және критерийлік бағалаумен үйлестірілген жағдайда тиімді болады деген қорытынды жасалады.

Кілт сөздер: цифрлық геймификация; студент мотивациясы; коммуникативтік белсенділік; шет тілін оқыту; цифрлық құралдар; ойын элементтері; Коэннің d коэффициенті; интерактивті оқыту.

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ЦИФРОВАЯ ГЕЙМИФИКАЦИЯ КАК СРЕДСТВО ПОВЫШЕНИЯ МОТИВАЦИИ И КОММУНИКАТИВНОЙ АКТИВНОСТИ СТУДЕНТОВ

Аннотация. В данной статье рассматривается цифровая геймификация как педагогическое средство повышения мотивации студентов и их коммуникативной активности в контексте обучения иностранному языку. Актуальность темы определяется возрастающей ролью цифровых образовательных платформ, интерактивной обратной связи и студентоориентированных образовательных траекторий. Цель исследования заключается в обосновании методического потенциала цифровой геймификации и демонстрации способов оценки её эффективности посредством предварительной и итоговой диагностики. Теоретическая часть анализирует казахстанскую, русскоязычную и международную литературу по цифровому образованию, игровым технологиям, инструментам геймификации, мотивации и коммуникации в обучении иностранным языкам. Практическая часть исследования была проведена в Самарский государственный аграрный университет. Эмпирическая часть представлена в виде квазиэкспериментального пилотного исследования с экспериментальной и контрольной группами. В экспериментальной модели студенты выполняют коммуникативные задания с использованием баллов, уровней, значков, квестов, командных миссий и мгновенной цифровой обратной связи, тогда как контрольная группа изучает тот же материал в традиционном формате. В разделе «Результаты» демонстрируется расчёт коэффициента d Коэна для мотивации и коммуникативной активности. Модельные данные показывают высокий размер эффекта в экспериментальной группе, что свидетельствует о том, что грамотно организованная цифровая геймификация способствует повышению вовлечённости студентов, снижению коммуникативной тревожности и увеличению частоты осмысленного взаимодействия на занятиях. В статье делается вывод о том, что цифровая геймификация является эффективной при условии, что игровые элементы подчинены чётким образовательным результатам и сочетаются с рефлексией, сотрудничеством и критериальным оцениванием.

Ключевые слова: цифровая геймификация; мотивация студентов; коммуникативная активность; обучение иностранному языку; цифровые инструменты; игровые элементы; коэффициент d Коэна; интерактивное обучение.