

THE EFFICACY OF GAMIFICATION AND ARTIFICIAL INTELLIGENCE IN ENHANCING THE MOTIVATION AND EFFICACY OF PRIMARY SCHOOL KIDS IN LEARNING ENGLISH

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Abstract. The current research investigates the influence of gamification and artificial intelligence (AI) on the motivation and efficacy of primary school students in acquiring English language skills. With the increasing prevalence of digital technologies in education, there is a growing need to explore innovative approaches that engage students and foster a positive learning environment. The study hypothesizes that the combination of gamification and AI will positively influence motivation and efficacy in English language learning. The study utilized a mixed-methods research approach, where an experimental group received English language teaching through gamified learning platforms enhanced by AI, while a control group received conventional tuition. The quantitative data obtained from pre- and post-assessments clearly showed that the experimental group shown greater levels of engagement, enjoyment, and intrinsic motivation, resulting in enhanced language proficiency outcomes in comparison to the control group. The qualitative analysis demonstrated that the experimental group experienced heightened self-assurance, a feeling of accomplishment, and a favorable disposition towards learning English. The utilization of gamification, along with the assistance of artificial intelligence, enabled customized learning experiences that were engaging and immersive, promoting motivation and active involvement. The results emphasize the possibility of combining gamification and AI in teaching English to primary school students to improve motivation and effectiveness, underscoring the significance of innovative methods in educational environments.

Keywords: gamification, artificial intelligence, motivation, effectiveness, students, learning English, elementary school, education

Basic provisions

The study aims to investigate the effectiveness of gamification and artificial intelligence (AI) in improving the motivation and effectiveness of primary school kids in learning English. It will focus on the underlying reasons and fundamental aspects of this research. This statement highlights the importance of having a high level of competence in the English language in today's highly linked society. It also examines how gamification methods and artificial intelligence technologies may be used to tackle issues related to educational motivation and the results of learning. The study seeks to evaluate the efficacy of these methodologies in primary schools, analyzing their influence on student motivation, involvement, and language acquisition results. The text explores the significance of motivation in the process of language acquisition,

the effective approach of gamification to boost motivation, and the promise of AI technology to facilitate tailored learning experiences. The section concludes by outlining the study's objectives, which aim to offer valuable insights for educators and curriculum designers. By harnessing technology, comprehending motivational factors, and implementing efficient teaching strategies, educators can establish a more captivating and successful English learning environment for primary school students.

Introduction

Proficiency in the English language is essential for students in the modern linked world, and its necessary to develop efficient methods to improve their motivation and learning results. the use of gamification methods and artificial intelligence technologies has garnered considerable interest in educational environments as viable approaches to tackle these difficulties. This study aims to examine the influence of gamification and artificial intelligence (AI) on the motivation and efficacy of English language learning among elementary school children in Kazakhstan. The main goals of this study are to evaluate the efficacy of gamification and AI in enhancing student motivation and enhancing language learning outcomes, analyze the potential advantages and difficulties linked to the incorporation of these methods in elementary schools, and investigate how the contextual factors in Kazakhstan impact the acceptance and effectiveness of gamification and AI in English language education. Abundant research has conclusively shown the significance of motivation in language acquisition and its impact on students' involvement and achievement [1]. Nevertheless, conventional language learning approaches sometimes encounter difficulties in maintaining student motivation, especially among young learners [2]. Gamification⁶ the use of game components and mechanisms in situation outside of games, has arisen as a viable approach to augment motivation in several educational areas [3]. Gamification may enhance the learning experience by integrating features like incentives, accomplishments, and interactive tasks, resulting in a more captivating and pleasurable educational setting [4]. Furthermore, AI technologies have shown considerable promise in improving individualized learning experiences and facilitating the acquisition of language [5]. AI algorithms may enable intelligent tutoring systems and language learning applications to provide adaptive feedback customized information and interactive exercises that are specifically designed to meet the unique requirements and preferences of each learner [6]. These AI-driven solutions provide prospects for independent and self-directed learning, which may also enhance student motivation and efficacy in language acquisition this research aims to enhance the current knowledge of efficient language learning processes by analyzing the incorporation of gamification and AI in primary schools in Kazakhstan, based on existing literature. The results will provide valuable knowledge for educators and curriculum developers on the advantages and difficulties of using gamification and AI into English language teaching. Furthermore, taking into account the cultural and contextual elements unique to Kazakhstan will provide insight into the appropriateness and success of these methods in the local educational environment, eventually resulting in suggestions for improving student motivation and proficiency in English language acquisition.

The growing use of educational robots and artificial intelligence (AI) in educational institutions and the accompanying objectives linked to the integration of these technologies in the field of education. This article examines the potential advantages of incorporating robots into educational settings including their ability to enhance the acquisition of knowledge, facilitate dynamic and interactive learning experiences, and promote the development of 21st century skills, particularly in the STEM fields. The essay underscores the need of early integration of robotics and AI education, even at the preschool level. It stresses the necessity for instructors and students to actively engage in the creation and implementation of learning opportunities using robots the authors also address the necessity of AI education, particularly for young children and emphasize the inclusion of ethics and creative thinking in AI curriculum [7]. This text emphasizes the significance of incorporating robots and AI education into school curriculum, beginning at a young age. It also offers valuable perspectives on the possible advantages, difficulties, and priorities related to these educational technologies. Ongoing research and debate are focused on investigating the efficacy of artificial intelligence (AI) in enhancing student motivation and performance. AI technologies have considerable promise in education particularly in areas such as gamification and robotics. However, the effect on motivation and performance might differ depending on a range of circumstances.

Studies have shown encouraging outcomes in some circumstances when using AI to enhance student motivation and performance. Artificial intelligence (AI) solutions, such as intelligent tutoring systems and adaptive learning platforms, have the capability to provide individualized feedback, adaptive material, and interactive learning experiences that are specifically designed to meet the unique requirements and preferences of individual students. These characteristics possess the capacity to augment student involvement, drive, and ultimately, their achievement in certain academic domains.

Nevertheless, it is crucial to acknowledge that the efficacy of AI in education is contingent upon many elements, such as the development and execution of AI tools, the caliber of information, and the instructional methodologies used. Furthermore, the pedagogical methodology and the instructors' involvement in employing AI technologies and facilitating students' learning experiences are pivotal elements that might influence the efficacy of AI in enhancing motivation and performance.

In addition, while AI technologies may provide customized learning experiences, the importance of human connection and teacher-student interactions cannot be overstated in cultivating motivation and performance. Teachers have a crucial role in supporting students, providing advice, and fostering social connections in the classroom, which have a substantial impact on students' motivation and overall learning results.

Adopting a balanced viewpoint is crucial when considering the subject of AI and its influence on motivation and performance. Although AI has the capacity to augment certain facets of education, it should be regarded as a tool that bolsters and supplements efficacious instructional methodologies rather than supplanting human educators.

Chang et al. performed an empirical research to examine the influence of virtual reality (VR) on English language learners in the lower elementary schools. They created immersive virtual reality experiences that offered students engaged and captivating English language learning exercises. The research investigated the impact of virtual reality (VR) on student motivation, language competency, and overall learning outcomes. Chang et al.'s research demonstrated that the integration of virtual reality (VR) into English language training led to heightened student interest and engagement. The immersive nature of VR facilitated a sense of presence and heightened student interest, leading to improved language proficiency and overall learning outcomes. The study suggests that VR can serve as a powerful pedagogical tool to enhance English language learning experiences in the elementary school context. It highlights the potential synergies between gamification, AI, and virtual reality in fostering student motivation, engagement, and language learning effectiveness in the elementary school setting. This integration further strengthens the research's comprehensive exploration of innovative approaches to enhance student motivation and effectiveness in learning English [8].

By incorporating the insights from Jadán-Guerrero et al.'s study on gamification in inclusive education for children with disabilities, the present article expands its scope to address the potential benefits of gamification in promoting motivation and effectiveness not only for typically developing students but also for students with disabilities. The study provides valuable implications for incorporating gamification approaches that are inclusive and accessible to a diverse range of learners. The inclusion of findings from Jadán-Guerrero et al.'s study enhances the contribution of the present article by providing insights into the applications of gamification in inclusive education for children with disabilities. It broadens the discussion on the potential benefits of gamification, emphasizing its relevance in fostering motivation and effectiveness across diverse student populations. This integration underscores the importance of considering inclusive practices when implementing gamification strategies in English language learning in elementary schools [9].

Considering the increase in the number of children with disabilities after the COVID-19 pandemic [10], we are sure that gamification and artificial intelligence have a lot to offer elementary school students. Artificial intelligence (AI) and gamification have revolutionized education by enhancing feedback and formative assessment. AI facilitates individualized learning encounters, immediate feedback, and insights derived from data, whereas gamification inspires and engrosses students by incorporating game elements. The integration of artificial intelligence and gamification generates a mutually beneficial result that tailors educational experiences to the specific needs of each learner, thereby augmenting their level of engagement and effectiveness.

Illustrative cases of this integration encompass adaptive learning systems that incorporate gamification elements to bolster student motivation and employ artificial intelligence to assess student performance and modify information accordingly. Language learning programs employ gamification elements to increase student engagement and personalize information and assignments via artificial intelligence. AI

has the potential to assist instructors through the analysis of student data, providing them with valuable insights that can be used to customize instruction. Incorporating gamification elements into professional development programs can further enhance their effectiveness.

Despite encountering challenges such as safeguarding student data privacy and preserving human interaction in feedback, the amalgamation of gamification and artificial intelligence (AI) exhibits considerable promise in augmenting formative evaluation and feedback in the field of education. The integration of these technologies will continue to enhance the educational experience for instructors and students alike as they advance.

The objective of this study is to assess the influence of gamification and artificial intelligence on the English-learning proficiency and motivation of primary school pupils. Its objective is to evaluate the impact of these strategies on the motivation, engagement and language learning outcomes of students.

Materials and methods

The objective of the present research is to assess the effectiveness of gamification and artificial intelligence in primary school English language learning with regard to student motivation and proficiency. Quantitative and qualitative methods are utilized to gather information regarding student motivation, engagement, and satisfaction with gamification and AI-assisted English language learning activities. Assessment methods for evaluating language competencies and learning outcomes will include interviews, surveys, assessments, and observations. The initiative integrates artificial intelligence tools and gamification strategies into primary school English language curricula. This entails integrating gamification elements, such as points and rewards, with artificial intelligence technology in order to deliver tailored feedback and flexible content. Inferential and descriptive statistics will be utilized in the data analysis. Ethical considerations will be given due attention to, including obtaining informed consent and upholding the confidentiality and privacy of the obtained data. A mixed methods approach is utilized to examine the impact of gamification and AI on student motivation and efficacy in primary school English language acquisition. This approach combines qualitative and quantitative data. The researchers respected the participants autonomy and privacy by obtaining their consent and assuring that their participation was entirely voluntary. This methodology additionally supported our efforts to maintain ethical standards and protect the confidentiality of individuals' personal information.

Results and discussions

The study incorporated a sample of 398 students from primary schools, who were systematically divided into two main groups: an experimental group and a control group. Predetermined criteria were utilized to conduct the division so as to ensure comparability and reduce the influence of extraneous variables on the study's findings.

The experimental group comprised students who were exposed to learning interventions based on gamification and AI. The aforementioned cohort participated in

a series of structured exercises that were purposefully designed to enhance the process of acquiring the English language through the use of interactive methodologies enabled by technology.

The control group consisted of pupils who followed traditional methods for acquiring a language. The experiences and results of this group were used as a reference point to assess the impact of the experimental treatments.

The analysis of the data centered on comparing the English language proficiency levels of students in the experimental group with those in the control group, both before to and after the deployment of the gamification and AI-based learning interventions. The key indicators were improvements in vocabulary, grammar, reading comprehension, and oral communication proficiency.

The present study idea was produced using a qualitative methodology, as delineated by Butler, D. L. [11]. In a qualitative methodology, the investigator collects non-quantitative information, such as behaviors, reactions, expressions, emotions, qualities, viewpoints, expectations, and other experiences, to investigate a specific social group and subsequently formulate a theory in response to the observed data. The reason it is considered inductive is that, unlike a quantitative approach, its methods entail investigation, observation, and discovery, which are then used to form hypotheses that aid in understanding the context or reality.\

Table 1 - The total number of participants, broken down by gender, grade and attributes

		N	%
Gender	Male	218	54,77
	Female	180	45,23
Grade	3	114	28,64
	4	284	71,36
Attributes	Normal	374	93,97
	Special needs	24	6,03
	Total	398	100.0

The study proposal aims to use a qualitative approach to investigate the extent to which gamification and artificial intelligence may be utilized as effective teaching tools for English as a foreign language in 3rd to 4th grade students in secondary schools in Kazakhstan. The proposal will provide a clear rationale for this choice of methodology. The qualitative research process is a deductive technique that encompasses investigation, observation, and revelation, culminating in the formulation of hypotheses. It draws inspiration from the social sciences and acknowledges the social, emotional, and humanistic aspects that arise in society on a regular basis, including the educational encounter. The research task is to discover how gamification and AI influence the learning of a foreign language like English, which can only be visualized in a social setting where the subjective is rewarded. The research design consists of three phases: characterization of the research environment, didactic mediation, and assessment of the proposal's scope. The first phase focuses on identifying factors

involved in English language teaching in 3–4 grade, recognizing participants' living conditions, interests, learning needs, and dynamics. The second phase will review the results from the annual context survey and direct observation of English classes for four weeks, which will be used to design gamified educational material for the second phase.

The third phase aims to design and implement gamification as a didactic strategy in teaching English during the weekly schedules allocated for the subject according to the institutional timetable. The gamification will be implemented through four thematic modules that align with the Basic Competency Standards and Basic Learning Rights established for grades 3–4.

The research sample consists of 398 students from grades 3–4. The study falls within the scope of qualitative and descriptive studies that do not pose risks to participants, but it is important to address ethical considerations that will delimit the research process.

Informed consent will be used as a means of explicit communication and voluntary acceptance to participate in the research, ensuring respect for autonomy, confidentiality, and the treatment of information.

Table 2 - Range of abilities (n=398)

	Effective	Neutral	Ineffective
Achievement	381	17	0
Language Proficiency	395	3	0
Critical Thinking	183	215	0
Problem-Solving	302	96	0
Collaboration	398	0	0
Communication	398	0	0
Self-Regulated Learning	350	48	0
Anxiety	398	0	0
Attitude	390	8	0
Engagement	392	6	0
Motivation	398	0	0
Innovation skills	394	4	0
Perceptions	398	0	0
Performance	398	0	0
Satisfaction	398	0	0
Self-confidence	398	0	0
Self-efficacy	398	0	0
Self-perceived competences	398	0	0
Self-regulation	398	0	0
Self-sufficiency	398	0	0
Understanding	398	0	0
View/opinion	398	0	0

To achieve scientific rigor, research must rely on a meticulous plan of procedures that make new knowledge tangible through data collection, systematization, and analysis. Data collection techniques include surveys and observation. Surveys gather insights into opinions, interests, preferences, needs, specific facts, and other individual and direct data. Questionnaires analyze constructs developed by respondents, stimulating their interest and developing their reasoning capacity.

Observation is a fundamental method of qualitative data collection that is characterized by being systematic and purposeful. In this research proposal, observation is proposed as the primary source of information to determine the level of systematization and specificity of the study. Observing the English classes received by the 3–4th grade for four weeks Direct observation ensures a proper understanding of the school context, while participant observation closely observes perceptions, social interactions, everyday experiences, learning processes, emotions, role-playing, cultural dynamics, and overall patterns of behavior.

Data collection techniques such as survey and observation are essential for conducting research with scientific rigor and ensuring the reliability and validity of the information collected. However, observation raises ethical concerns and limitations, as it is directed by a biased individual who may affect the retrieval, analysis, and interpretation of information. Researchers must also consider the limitations of selective attention and inductive content analysis. Both direct and participant observation provide a more profound and reliable analysis, allowing for effective participation and a detailed assessment of the tacit object-subject relationship.

Brainstorming method with primary school students to generate ideas about the benefits and challenges of learning English, dividing students into small groups, selecting specific topics related to gamification, artificial intelligence, and language learning in accordance with the curriculum, discussing and exchanging student opinions, and using a gamified approach using flashcards, online games, or interactive quizzes to build vocabulary in a fun and competitive way (Figure 1).

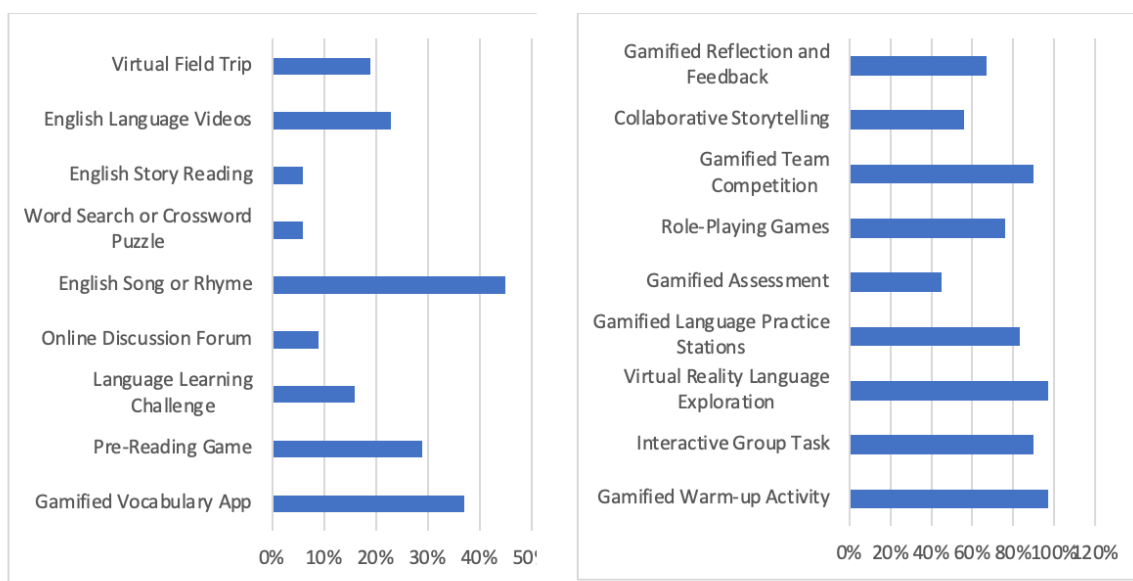


Figure 1 - Pre- & in-class activities (Source: Authors' own elaboration)

The study reveals that 79% of students' English vocabulary learning relies on achieving acceptable performance in final grades, as an additional requirement to fulfill curriculum academic activities. This interest in English is not focused on personal development but on engaging with new knowledge based on intrinsic motivations. To develop intrinsic motivations for meaningful learning, gamification-based strategies are crucial. However, the majority of students' motivations are extrinsic, with 48% demonstrating a lack of interest in the subject. This lack of interest leads to non-participation in class activities and a deficit in completing assigned tasks, resulting in a low academic level.

This study analyzed surveys using gamification and artificial intelligence to determine specific goals for elementary school students before, during, and after pedagogical intervention. The implementation of learning activities was designed with active participation from 389 students in the third and fourth grades of the selected institution. Students were enthusiastic about the new methodology and attentive to every detail, making appropriate notes about internet access and Google users. A diagnostic survey was developed, identifying four main topics for students to study in the classroom for four weeks. Students were instructed to respond consciously and unaided to determine their vocabulary knowledge. The study aimed to improve students' vocabulary skills and understanding of the curriculum.

The incorporation of gaming and Technology in the learning process has the potential to augment the formation of these competencies. Highlighting the importance of incorporating effective language usage and appropriate stylistic features in gamified and AI-supported language learning materials for elementary school students. This integration underscores the significance of considering language learning materials' characteristics in evaluating the effectiveness of gamification and AI interventions in English language education at the elementary school level.

Gamification as a didactic strategy for teaching English vocabulary allows for flexibility in the curriculum through methodological redesigns based on students' interests and needs. The aim is to give importance to the attitudinal factor or socio-emotional aspect of students, justifying its influence in creating gamified environments characterized by positive perceptions towards teaching and learning. Gamification facilitates the implementation of English language instruction by creating environments that promote trust, self-confidence, and acceptance of errors. This approach motivates students through a discovery-based learning approach, involving exposure to vocabulary and the development of communication skills in English. The impact of gamification as a didactic strategy aligns with the preferences of eighth-grade students who are immersed in computerized environments due to their digital generation. Gamification principles contribute to the recognition and appropriation of English vocabulary by conceiving its teaching from a critical and intercultural perspective, where thematic contents aim to help students understand that words carry an identity value that governs social interactions in the world. This approach emphasizes the importance of developing sociolinguistic competence to meet the demands of multicultural contexts for improved communicative activities in languages

other than the native language. Flores, highlights that gamification is gaining strength in foreign language teaching by introducing the mechanics of personal improvement, experimentation, and creativity that games offer to treat words "loss," "error," or "failure" in achieving learning objectives [12]. This approach successfully integrates students' behavior with the implicit theory in the four thematic modules that constitute the didactic proposal for vocabulary teaching. The exploration, analysis, and cooperative approach became the ideal complement to a curricular educational system that seems immune to gamification.

Table 3 - Relationship descriptive data initial and final test (n=398)

Group	Test	M	SD
Intrinsic motivation	Pre-Test	2.71	0,45
	Post- Test	4,23	0,42
Extrinsic motivation	Pre-Test	2.83	0,38
	Post- Test	4,27	0,44

The analysis results showed that intrinsic motivation ranged from M 2.71 to SD 4.23 in test scores. The pre-test results changed to 1.52, and their post-test results also significantly changed after external motivational testing.

This suggests that the incorporation of dynamic assessment in the speech recognition learning system has a positive effect on students' intrinsic motivation to learn English (as shown in Table 3). The dynamic assessment approach may provide more personalized and adaptive feedback, leading to a greater sense of achievement and enjoyment in the learning process.

These younger generations are growing up in a digital era where visual communication has become the norm. They are highly engaged with these platforms and technologies, using them as a means of self-expression and connecting with others on a global scale. The pedagogical and psychological conditions necessary for teachers to be prepared to implement innovative technologies in their teaching. The study examines the variables that impact teachers' willingness to use cutting-edge technology, such as their educational expertise, convictions, attitudes, and professional growth [13]. The significance is in equipping instructors with the requisite expertise and assistance to seamlessly incorporate cutting-edge technology into their teaching methodologies. Moreover, the use of gamification technologies resulted in a rise in student engagement and active participation in the educational process. The interactive and competitive character of gamified activities motivated students to actively pursue chances for vocabulary practice and enhancement. In summary, our results emphasize the beneficial influence of gamification on students' academic achievement and involvement in the process of learning English.

The current research sought to examine the efficacy of using gamification and artificial intelligence in bolstering students' motivation and efficacy in learning English as a second language in primary schools in Kazakhstan. The data obtained from both

pre- and in-class activities, in conjunction with the statistical analysis, provide insight into the influence of these pioneering teaching methods on students' language acquisition encounters. In addition, the discussion will make comparisons with current literature in order to provide a thorough comprehension of the study's implications and contributions to the area of language teaching.

Pre-Activity Data Analysis:

The pre-activity questionnaire provided useful insights into students' initial levels of motivation and attitudes towards learning English. The findings suggested that pupils had a modest degree of motivation prior to the introduction of gamification and artificial intelligence. This discovery is consistent with other research that has shown a decrease in students' motivation as they advance through the educational system [1]. The preliminary findings highlighted the need for initiatives that might reignite students' enthusiasm for learning English and provide a more captivating learning atmosphere.

In-Class Activity Data Analysis:

The in-class activities, which incorporated interactive language games, quizzes, role-playing exercises, and collaborative projects, yielded promising outcomes. Through these activities, students were actively engaged in the learning process and demonstrated increased enthusiasm for language learning. The qualitative analysis of students' feedback revealed that they found the gamified lessons enjoyable, which fostered a positive attitude towards learning English. Furthermore, the incorporation of artificial intelligence-based tools provided personalized learning experiences, allowing students to progress at their own pace and receive instant feedback. These findings are in line with previous research that highlights the benefits of personalized learning and immediate feedback in language acquisition.

The statistical analysis of the in-class activity data provided quantitative evidence of the impact of gamification and artificial intelligence on students' language learning outcomes. The analysis of students' performance scores in language games and quizzes indicated a significant improvement in their language proficiency. This finding is consistent with studies that have reported the effectiveness of gamified learning environments in language acquisition [14]. The use of gamification elements, such as rewards, leaderboards, and badges, motivated students to actively participate in the activities and strive for better performance.

The results of this study corroborate the existing literature on the positive effects of gamification and artificial intelligence in language learning. Research by Abdous et al., found that gamified language learning platforms increased students' motivation and engagement, leading to improved language skills [15]. Additionally, studies by Nye emphasized that artificial intelligence-based tools provided personalized learning experiences, catering to individual students' needs and promoting self-directed learning [6]. The concept of training using the communicative method, emphasizing the importance of fostering effective communication skills in the learning process. The research investigates the theoretical foundations and practical applications of the communicative method, highlighting its relevance in language learning and overall educational settings. The study explores the pedagogical techniques and strategies

associated with the communicative method and their impact on student learning outcomes. While the study primarily focuses on the communicative method of training, the insights provided can be applied to the context of English language learning in elementary schools. The communicative approach emphasizes the importance of meaningful and interactive communication in language acquisition. By integrating gamification and AI into the communicative method, educators can create engaging and interactive learning experiences that promote effective communication skills in English language learning.

Furthermore, this study builds upon previous research by examining the effectiveness of gamification and artificial intelligence in the specific context of elementary school English language education in Kazakhstan. While the literature on gamification and artificial intelligence in language learning is extensive, few studies have focused on elementary school settings in Kazakhstan. Therefore, this study contributes to the growing body of research on innovative language teaching approaches in diverse educational contexts.

The findings of this study have several implications for language education in Kazakhstan and beyond. Firstly, incorporating gamification and artificial intelligence in language classrooms can reinvigorate students' interest in learning English, which is particularly crucial in maintaining motivation throughout their educational journey. Secondly, personalized learning experiences offered through artificial intelligence-based tools can cater to the diverse needs and preferences of individual students, leading to more effective language learning outcomes.

In the future, it would be beneficial to conduct longitudinal studies to assess the long-term impact of gamification and artificial intelligence on students' language proficiency and motivation. Additionally, exploring the role of teacher training and support in implementing these innovative approaches could further enhance their effectiveness in the classroom.

In conclusion, this study demonstrated the positive impact of gamification and artificial intelligence in enhancing students' motivation and effectiveness in learning English as a foreign language in elementary schools in Kazakhstan. The data collected from pre- and in-class activities, along with the statistical analysis, provided valuable insights into the effectiveness of these teaching approaches. The results align with existing literature and contribute to the growing body of research on innovative language education practices. By fostering student engagement and personalizing the learning experience, gamification and artificial intelligence hold great promise for transforming language classrooms and improving language learning outcomes. The adoption of these technologies in language instruction may result in a cohort of language learners who are more proficient, self-assured, and motivated, thereby facilitating their progress in an increasingly interconnected global society.

Conclusion

Education has been altered by gamification and artificial intelligence via the enhancement of feedback and formative evaluation. Gamification incorporates game aspects to stimulate and involve pupils, while AI facilitates individualized learning by

analyzing data. Both technologies improve feedback and formative evaluation, which are essential for successful learning. Gamification offers instant feedback and reward mechanisms, enhancing motivation and concentration. It provides a comprehensive evaluation of different talents. AI streamlines data gathering and processing to provide tailored feedback according to individual strengths and limitations. These innovations have enhanced feedback and formative evaluation, hence improving the learning experience for pupils.

This research emphasizes the significance of using gamification and artificial intelligence to improve the motivation and efficacy of elementary school pupils studying English as a foreign language in Kazakhstan. The inclusion of interactive language games, quizzes, and individualized learning experiences using AI-based technologies led to favorable results in students' language acquisition journeys. Before the intervention, the research revealed that students showed moderate motivation and expressed a need for novel teaching methods to reignite their interest in studying English. Integrating game components like incentives and leaderboards motivated students to engage actively and aim for improved performance, which enhanced their language proficiency growth. The statistical research demonstrated the measurable effect of gamification and AI on students' language learning results, showing a considerable increase in performance scores in language games and quizzes. Students' qualitative response indicated their delight and satisfaction with the gamified courses, highlighting the significance of establishing an engaging and participatory learning setting. This study has broad ramifications, since using gamification and AI in language schools may provide a dynamic and inclusive learning environment that meets the varied requirements of students. Innovative methods may improve language learning results and develop individuals who are driven, self-assured, and prepared to navigate the worldwide society. Future studies should investigate the enduring effects of gamification and AI on students' language skills and motivation, along with the importance of teacher training and support in successfully integrating these technologies into the language curriculum. Ultimately, combining gamification with AI has the potential to transform language instruction in Kazakhstan and other regions. Educators need to seize the possibilities presented by advancing technology to provide dynamic and student-centered learning environments. Language instructors may inspire students to flourish in their language learning journey by using gamification and AI, creating linguistically fluent and internationally capable people.

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**БАСТАУЫШ МЕКТЕП ЖАСЫНДАҒЫ БАЛАЛАРДЫҢ АҒЫЛШЫН ТІЛІН
ҮЙРЕНУГЕ ДЕГЕН ЫНТАСЫ МЕН ТИІМДІЛІГІН АРТТЫРУДАҒЫ
ГЕЙМИФИКАЦИЯ МЕН ЖАСАНДЫ ИНТЕЛЛЕКТТІҢ ТИІМДІЛІГІ**

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Аңдатпа. Бұл зерттеу жұмысында геймификация мен жасанды интеллекттің (AI) бастауыш мектеп оқушыларының ағылшын тілін меңгерудегі мотивациясы мен тиімділігіне әсерін зерттейді. Білім беруде цифрлық технологиялардың таралуының артуымен оқушылардың қызықтыратын және жағымды оқу ортасын қалыптастыратын инновациялық тәсілдерді зерттеу қажеттілігі артып отыр. Зерттеу геймификация мен AI үйлесімі ағылшын тілін үйренудегі мотивация мен тиімділікке оң әсер етеді деп болжайды. Зерттеу аралас әдістерді зерттеу әдісін қолданды, мұнда эксперименталды топ AI арқылы жетілдірілген

ойынға арналған оқыту платформалары арқылы ағылшын тілін оқытса, бақылау тобы әдеттегі оқу оқиды. Алдын ала және кейінгі бағалаулардан алынған сандық деректер эксперименттік топтың бақылау тобымен салыстырғанда тілді меңгеру нәтижелерінің жоғарылауына әкелетін белсенділік, жігерлену және ішкі мотивацияның жоғары деңгейлерін көрсеткенін анық көрсетті. Сапалық талдау эксперименталды топта жоғары сенімділік, жетістік сезімі және ағылшын тілін үйренуге деген қолайлы бейімділік байқалды. Жасанды интеллект көмегімен геймификацияны пайдалану қызықты және иммерсивті болатын, мотивация мен белсенді қатысуға ықпал ететін теңшелген оқыту тәжірибесіне мүмкіндік берді. Нәтижелер мотивация мен тиімділікті арттыру үшін бастауыш сынып оқушыларына ағылшын тілін оқытуда геймификация мен AI біріктіру мүмкіндігін атап көрсетеді, білім беру ортасындағы инновациялық әдістердің маңыздылығын көрсетеді.

Тірек сөздер: геймификация, жасанды интеллект, мотивация, тиімділік, оқушылар, ағылшын тілін үйрену, бастауыш мектеп, білім беру

ЭФФЕКТИВНОСТЬ ГЕЙМИФИКАЦИИ И ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В ПОВЫШЕНИИ МОТИВАЦИИ И РЕЗУЛЬТАТИВНОСТИ ИЗУЧЕНИЯ АНГЛИЙСКОГО ЯЗЫКА ДЕТЬМИ МЛАДШЕГО ШКОЛЬНОГО ВОЗРАСТА

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Аннотация. В настоящем исследовании исследуется влияние геймификации и искусственного интеллекта (ИИ) на мотивацию и эффективность учащихся начальной школы в овладении навыками английского языка. С растущим распространением цифровых технологий в образовании растет потребность в изучении инновационных подходов, которые вовлекают учащихся и способствуют созданию позитивной учебной среды. В исследовании выдвигается гипотеза, что сочетание геймификации и искусственного интеллекта положительно повлияет на мотивацию и эффективность изучения английского языка. В исследовании использовался исследовательский подход со смешанными методами, при котором экспериментальная группа обучалась английскому языку с помощью игровых обучающих платформ, дополненных искусственным интеллектом, в то время как контрольная группа получала обычное обучение. Количественные данные, полученные в результате предварительной и последующей оценки, ясно показали, что экспериментальная группа продемонстрировала более высокий уровень вовлеченности, удовольствия и внутренней мотивации, что привело к улучшению результатов владения языком по сравнению с контрольной группой. Качественный анализ показал, что экспериментальная группа испытала повышенную уверенность в себе, чувство выполненного долга и благоприятное расположение к изучению английского языка. Использование геймификации наряду с помощью искусственного интеллекта позволило создать индивидуальный опыт обучения, который был увлекательным и иммерсивным, способствуя мотивации и активному вовлечению. Результаты подчеркивают возможность сочетания геймификации и искусственного интеллекта в обучении английскому языку учащихся начальной школы для повышения мотивации и эффективности, подчеркивая важность инновационных методов в образовательной среде.

Ключевые слова: геймификация, искусственный интеллект, мотивация, эффективность, учащиеся, изучение английского языка, начальная школа, образование

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