

E.U. Nurgaziev

*“School-Gymnasium No. 68”, Taraz, Kazakhstan
(*Corresponding author. E-mail: ermek_nurgaziev@mail.ru)*

ORCID 0000-0003-0228-8127

Innovative learning technologies as a means of increasing students’ motivation in geography lessons

The article discusses the problem of increasing students’ learning motivation in geography lessons through the use of innovative educational technologies. The relevance of the research is determined by the processes of digitalization of education and the need to form stable cognitive motivation of schoolchildren in the context of updating the learning content. The purpose of the study is to determine the effectiveness of the use of innovative learning technologies in increasing the level of educational motivation of students. The paper uses methods of theoretical analysis of scientific sources, pedagogical experiment, questionnaire, observation and statistical data processing. The experiment was conducted with the participation of students of the 7th grade of a secondary school and included the ascertaining, forming and control stages. The scientific novelty of the research lies in the experimental testing of a comprehensive model for integrating innovative technologies into geography teaching, aimed at forming students’ internal learning motivation. The results of the study showed a statistically significant increase in the level of educational motivation, an increase in cognitive activity and sustained interest in the subject. The conclusion is made about the expediency of the systematic use of innovative technologies in the practice of school geography education.

Keywords: innovative learning technologies, educational motivation, geography, ICT, GIS, VR technologies, “Flipped classroom”; “Jigsaw”; interactive platforms, pedagogical experiment.

Introduction

The modern education system is undergoing a stage of active transformation due to the introduction of digital technologies and the transition to a competency-based learning model. In these conditions, it is of particular importance to find effective pedagogical tools that can not only improve the quality of students’ knowledge, but also enhance their cognitive motivation. One of the promising areas is the use of innovative learning technologies that make the learning process more interactive, visual, and personally meaningful for students.

The relevance of the research is due to the fact that digital and interactive technologies are being actively introduced into geography teaching all over the world, including countries in Europe, the USA and Asia, which significantly increases student motivation. In Kazakhstan, these technologies are not used systematically enough, so it is necessary to study their effectiveness and compare national practices with international experience.

The problem of the research lies in the contradiction between the need to form a stable educational motivation of students and the insufficient implementation of innovative technologies in geography lessons.

The role of innovative technologies in the modern educational process is that they contribute to the activation of cognitive activity, the development of independence, critical thinking and interest in the subject. The use of digital resources, interactive platforms, game and project methods allows students to be involved in research and creative activities, which increases their motivation and academic performance.

The purpose of the study is to determine the effectiveness of the use of innovative learning technologies as a means of increasing students’ motivation in geography lessons.

Research objectives:

1. To study the theoretical foundations of innovative learning technologies and their impact on student motivation;
2. To determine the pedagogical conditions for the effective use of innovative technologies in geography lessons;
3. To conduct a pedagogical experiment on the introduction of innovative teaching methods;
4. To assess the impact of innovative technologies on the level of educational motivation of schoolchildren.

The object of the research is the process of teaching geography in secondary schools.

The subject of the research is the influence of innovative technologies on the formation of students' learning motivation.

The research hypothesis assumes that the systematic use of innovative technologies (interactive maps, online quests, digital quizzes, geographic information systems and virtual excursions) helps to increase the cognitive interest and educational motivation of students in geography.

The scientific novelty of the study is a comprehensive analysis of international approaches to the use of digital technologies in geography education and their comparison with the practice of Kazakh schools. For the first time, an experimental test of a model involving the integration of interactive maps, GIS, VR technologies, Kahoot/Padlet platforms, and "Flipped classroom" technology into a single motivational complex was conducted on a sample of 7th grade students. The novelty also consists in identifying the combination of technologies that have the greatest impact on the internal motivation of schoolchildren.

The practical significance lies in the possibility of using the research results in the practice of teaching geography, as well as in the development of methodological recommendations and digital educational resources for teachers.

The term "innovative learning technologies" in the pedagogical literature is interpreted as a system of methods, forms, techniques and means of teaching aimed at improving the effectiveness of the educational process through the introduction of innovations and the transformation of traditional forms of work. For example, in one of the sources, innovative technologies are defined as "a system of methods, methods, methods of teaching and educational tools aimed at achieving a positive result due to dynamic changes in the personal development of a child in modern socio-cultural conditions" [1]. In another approach, innovative technologies are described as "sets of methods and tools that support the stages of innovation implementation" [2].

M.J. Koehler and P. Mishra consider innovative educational technologies more broadly — that is, as tools that ensure qualitative changes in learning through the integration of digital resources, interactive forms of interaction and active learning models. The TPACK model proposed by M. J Koehler and P. Mishra emphasizes that the innovativeness of technology is determined not by the technical means themselves, but by how harmoniously it is integrated with the content of the subject and teaching methodology, transforming the structure of learning and increasing its effectiveness [3].

Thus, the important characteristics of this concept are: novelty (innovativeness), the direction of improvement, the transformation of the educational process, the activation of learning participants, personality-oriented orientation.

The classification of innovative educational technologies is a key tool for systematizing a variety of pedagogical methods and justifying their application. The most commonly used and internationally recognized classification is based on the type of technology and its pedagogical purpose. This approach is widely used in research on educational innovation and the introduction of educational technologies [4, 5].

According to this classification, innovative educational technologies are divided into the following main categories listed in Table 1.

Table 1

The main categories of innovative educational technology

Information and communication technologies (ICT)	learning tools using digital tools, online platforms, learning management systems (LMS), virtual and augmented reality (VR/AR). Such technologies increase accessibility, interactivity, and personalization of the learning process.
Design and development-oriented technologies	methods that involve students in active, research-based, or project-based learning. This includes problem-based learning, collaborative projects, and practical experiments that promote critical thinking and creativity.
Developmental and personality-oriented technologies	approaches focused on the individual needs of students, including personalized learning trajectories, adaptive systems and methods of self-organized learning (eutagogy). They are aimed at developing cognitive, emotional, and metacognitive skills.
Gaming and simulation technologies	Methods that use simulations, role-playing games, and gamification to simulate real-world phenomena or create immersive educational environments. These technologies increase motivation, engagement, and practical application of knowledge.

This classification has become widespread, as it combines the pedagogical purpose, the means used and the form of interaction with the student, creating a clear system for the selection and implementation of innovative methods in various educational contexts [4, 5].

Modern educational practice is built around several complementary paradigms, each of which forms a specific idea of the goals, content and methods of teaching. To study the impact of innovative technologies on the motivation of schoolchildren, three approaches are especially important: competence-based, activity-based and personality-oriented. Their combination defines the methodological basis of modern teaching methods and forms the framework for the introduction of digital and interactive tools in geography lessons.

The competence approach assumes that learning should form not only subject knowledge, but also the ability to apply it in real situations. In international models (for example, the OECD Learning Compass 2030), competencies are understood as an integrated set of knowledge, skills and values necessary for successful activity in the modern world [6]. The context of Kazakhstan notes that a modern graduate should have a wide range of competencies that allow him to make independent and responsible choices in educational activities [7].

The activity-based approach assumes that learning takes place through the active activity of students. In Kazakhstan, it is emphasized that the system-activity approach contributes to the solid acquisition of knowledge, the development of independence, initiative and sustainable learning motivation [8]. This is especially important for geography: students work with maps, model natural phenomena, analyze territorial changes, and conduct mini-studies. Thus, the activity-based approach directly enhances cognitive interest through the involvement of students in real research processes.

A personality-oriented approach puts the student's personality, interests, needs, and level of readiness at the center of the educational process. In international practice, it is closely related to the theory of Self-Determination, according to which intrinsic motivation is formed when the needs for autonomy, competence, and connectedness are satisfied [9]. Kazakh studies emphasize that a personality-oriented environment promotes the development of theoretical thinking and cognitive activity of students [7]. In geography lessons, this approach is implemented through the selection of project topics, the use of regional material, research trajectories and the opportunity to express their own interests in educational activities.

The combination of competence-based, activity-based and personality-oriented approaches creates a powerful methodological platform for the introduction of innovative educational technologies. The competence orientation determines the change of educational outcomes; the activity orientation organizes the learning process based on actions and universal learning actions; the personality-oriented paradigm creates conditions for personal significance and autonomy of the student. The modernization of education in Kazakhstan is based on these approaches.

The introduction of innovative information and communication technologies (ICTs) — such as interactive maps, project platforms, geographic information systems (GIS), simulators, and online quests — can significantly transform geographic education. Their effectiveness is manifested in three interrelated aspects: the development of students' competencies, the organization of meaningful and motivating activities, as well as the support of individual educational trajectories. This comprehensive approach enhances motivation for the subject and promotes deeper learning of the material.

Firstly, ICTs enrich the educational process with multimedia and dynamic forms of presentation: presentations, videos, animations and virtual models. These are not just “beautiful illustrations” — with their help, students get the opportunity to model geographical processes, analyze data and observe cause-and-effect relationships in an interactive environment. According to teachers, such technologies increase learning activity and promote the independent search for knowledge [10].

Secondly, GIS (geoinformation systems) open up new horizons for research and design activities. Thanks to spatial analysis, visualization, and modeling, students can work with real geodata: study natural and anthropogenic processes, create their own digital maps, and analyze territorial changes. This develops spatial thinking, competencies in the field of analysis and forecasting. The use of GIS in school geography is supported by international experience and is recognized as an effective pedagogical tool [11].

In addition, innovative pedagogical approaches such as project-based learning, game technologies, and problem-based learning integrated with ICT and GIS make it possible to build classes focused on the student's personality. For example, online quests with a geographical map, virtual excursions, or group projects with GIS models create a context in which students formulate goals themselves, make decisions, and get tangible results from their work. Such forms of learning stimulate autonomy, collective interaction and a sense of the importance of one's contribution [11].

In the context of Kazakhstan, the use of ICT and GIS is particularly relevant: they help to adapt educational trajectories to regional peculiarities, linking global geographical concepts with local examples and problems. According to research, ICTs contribute to the formation of students' scientific worldview and the development of orientation skills in the information space [12].

For the successful integration of innovative technologies, it is important to:

- Develop research skills through project and problem-oriented tasks.
- Use GIS and interactive maps not just for demonstration, but as a working tool for students.
- To organize play and research forms of learning that involve active participation and independence of students.
- To provide teachers with methodological support and necessary technical resources.
- Track performance through the assessment of students' competencies and motivation.

As a result, innovative technologies in geography are not an auxiliary tool, but the foundation for the formation of a modern, active and motivating educational environment. They make it possible to combine competence development, research activities and a personality-oriented approach, which is especially important in the rapidly changing information world.

The introduction of innovative technologies requires compliance with conditions such as: motivational readiness of students and teachers, resource and technical support, system support, methodological support, reflection on student activities. Violation of these conditions can lead to the formal application of technology without any effect on motivation and results.

The relationship between innovative technologies, learning tasks, and motivational effects in geography teaching can be found in Table 2.

Table 2

The relationship between innovative technologies, learning tasks, and motivational effects in geography teaching

Type of technology	Example of a task / form of work	Pedagogical purpose	The motivational effect	Expected learning outcome
Interactive platforms (Kahoot, Quiz, Wordwall)	Online quiz "Countries and capitals of the world" after studying the topic	Testing knowledge in a playful way	Emotional involvement, competitiveness, intrinsic motivation	Increased interest in the subject, stable memorization of facts
Virtual maps and GIS (Google Earth, ArcGIS Online)	The study "Traces of anthropogenic impact on the landscapes of Kazakhstan"	Development of geospatial thinking, data analysis	Awareness of the practical importance of geography, research interest	Formation of research skills, critical thinking
Interactive simulations (PhET Interactive Simulations)	Modeling the movement of tectonic plates	Understanding natural processes through visualization	The effect of "immersion" and curiosity	Solid assimilation of complex topics through visibility
Online quest or GIS map project	Team assignment "Ecological map of the native region"	Teamwork, research of local problems	Responsibility and pride in results, social engagement	Developing citizenship and data management skills
Multimedia presentations and video tutorials	Creating a video about the natural areas of Kazakhstan	Formation of information presentation skills	Self-expression, creative motivation	Development of communication and ICT competencies
Cloud services (Padlet, Google Docs)	Joint compilation of the "digital atlas" on the theme "Waters of the world"	Teamwork and knowledge sharing	A sense of belonging, collective success	Increased learning activity and collaboration
Augmented Reality (AR/VR)	Virtual tour "Earth's climate zones" using VR glasses	Formation of ideas about global processes	The effect of novelty, emotional experience	Deep understanding of geographical patterns

As part of the formative stage of the experiment, a task system based on innovative technologies was developed (Table 2), where each technology performed a specific motivational function. The use of GIS and interactive platforms has shown the greatest effect in developing research interest and an active attitude towards the subject.

The issue of educational motivation formation occupies a key place in psychological and pedagogical science: The high quality of education and the effectiveness of the educational process significantly depend on how motivated students are for learning activities. The main aspects that are important in the implementation of innovative technologies and pedagogical approaches in geography lessons are presented below.

Motivation to learn is a set of internal and external motivations that influence a student's choice of a particular learning activity, his efforts, resilience to difficulties, and achievement of results. Kazakh studies emphasize that motivation is "a process as a result of which a certain activity acquires a certain personal meaning for an individual, creates stability of his interest in it" [13].

There are different types of motivation: external and internal, achievement motivation, avoidance motivation, cooperation motivation, etc. The formation of intrinsic motivation is considered more sustainable and preferable for deep learning. For example, a Kazakh study shows that intrinsic motivation (interest in content, a sense of competence, and autonomy) is associated with self-determination, satisfaction with learning, and learning effectiveness [14].

In order for students' motivation to learn to be formed and developed, certain conditions are necessary both from the teaching side and from the educational environment:

Consideration of students' interests and goals. Learning will be more motivating if the topics, tasks, and technologies create personal significance for the student: when the student sees the meaning, applicability, and presence of choice. In the educational policy of Kazakhstan, one of the points of the strategy for increasing motivation is indicated: "the connection of the studied material with real-life situations, demonstration of the practical significance of knowledge and skills" [15].

Creating a success situation. It is important to provide opportunities for positive learning achievements that reinforce students' sense of competence and confidence. The study says: "Information and communication technologies of education provide students with clear and adequate information about progress..., thereby stimulating internal motivation" [13].

A variety of forms and methods. Interactive tasks, teamwork, research projects, the use of ICT and GIS — all this contributes to the activation of learning motivation. For example: "Modular assignments, group forms, interactive learning environments (...) help to increase interest and involvement in the learning process" [16].

Support for autonomy and cooperation. The teaching environment should give students the opportunity to choose the forms and methods of work, to participate in cooperation, to reflect their activities, which enhances the sense of personality-the subject of learning. This is noted in the activities of Kazakhstani researchers: "Psychological and pedagogical conditions for the activation of educational and cognitive activity" are considered as key autonomy, self-efficacy, coherence [17].

Teacher's pedagogical competence and technological environment. The teacher should be able to organize a technologically rich, motivating environment, introduce innovations, and support the student. For example, "designing a model of a teacher's psychological and pedagogical competence" is indicated as a factor in the development of motivation [18].

The use of innovative technologies in geography teaching, including information and communication technologies (ICT), geographic information systems (GIS) and interactive platforms, is an important motivation factor for students. These technologies increase the visibility and realism of the studied processes, which promotes emotional engagement and active cognitive activity. At the same time, they create conditions for the formation of research competencies, allowing students to independently analyze data, model geographical phenomena and present the results of their work, which enhances the sense of importance and competence.

An important feature of the use of ICT and GIS is the possibility of organizing flexible educational trajectories. Students can choose their own approaches to completing tasks, work individually or in a group, and adapt the difficulty level to their own abilities. This autonomy supports a person-centered approach to learning and strengthens motivation through a sense of control over the learning process.

Effective technology integration requires thoughtful pedagogical support. In practice, this may include initial reflection to identify students' interests and expectations, design and research activities using local data and GIS models, as well as regular feedback through interactive assignments and public presentations of re-

sults. Equally important is the diagnosis of students' motivation and self-esteem before and after the use of technology, which makes it possible to assess the educational effect.

In the Kazakh context, the development of digital education is actively supported by government initiatives. Pilot projects using GIS and multimedia resources are being implemented in a number of schools and universities, methodological manuals and training programs are being developed, which is confirmed by local studies of technology application practices in geography [19-21]. However, limitations remain: uneven access to equipment and Internet connection, insufficient systematic teacher training, and the predominance of technology demonstration instead of a research approach [22-24].

A comparative analysis of foreign practice shows that the successful use of ICT and GIS involves the integration of technology into educational goals, design and research organization of the lesson, systematic teacher training and regular research on the effect of technology use on motivation and achievement of learning outcomes (Table 3).

Table 3

Comparative comparison of Kazakhstan and foreign practices

Position	Kazakhstan	Foreign practice
Politics and strategy	There is government support for digitalization; pilot programs [20].	Clear integration of GIS/ICT into standards and programs in a number of countries; long-term strategies [26].
Access to technology	Uneven access by region; local projects [25].	Broader coverage in developed regions, but dependent on financing [20].
Teacher training	Disparate courses, the need for systematic retraining [26].	Systemic professional development programs, community of practitioners [20].
The method of use	It is often a demonstration application; there are successful examples of project work [27].	The emphasis is on design and research tasks and competence assessment using GIS [25].
Evidence base	A growing local research base (publications, regional reports) [26].	Extensive international literature, meta-analyses and case studies [26].

Methods and materials

The conducted pedagogical experiment became a logical continuation of the theoretical analysis of innovative learning technologies and their role in increasing students' motivation to study geography. Based on the identified patterns and successful practices in domestic and foreign experience, a methodology for introducing interactive and digital technologies into the geography education process for middle-level students was developed and tested.

The purpose of the experiment is to determine the impact of the use of innovative learning technologies (ICT, interactive platforms, GIS, VR tourism, etc.) on increasing the level of educational motivation of students in geography lessons.

Experimental objectives:

1. To study the initial level of educational motivation of schoolchildren to study geography;
2. To develop and implement a set of innovative technologies and active teaching methods in the educational process;
3. To determine the dynamics of changes in educational motivation and cognitive activity of students after experimental exposure;
4. To conduct a comparative analysis of the results of control and experimental measurements.

The experiment was conducted on the basis of the secondary school named after A.S. Makarenko in Zhambyl district and secondary school No. 28 named after A. Moldagulova in Taraz, Taraz, Republic of Kazakhstan. The study involved students of the 7th grade of a secondary school based at the educational and

methodological complex "The use of innovative technologies in geography lessons in secondary schools" (using the example of grades 7).

The study involved 30 7th grade students (14 boys and 16 girls) aged 12-13 years. Based on the results of school grades and observations of teachers, the level of their overall academic performance can be described as average and above average.

At the initial stage, the majority of students demonstrated external motivation to learn (mark orientation, encouragement, approval), while cognitive interest in geography was poorly expressed.

The following methods were used to diagnose motivation:

- Methodology for assessing students' learning motivation (N.G. Luskanova, modified by A.A. Rean);
- Monitoring of students' activities during lessons;
- Conversations and surveys to identify interest in the subject.

The experiment consisted of three stages:

1) The ascertaining stage. At this stage, the initial level of motivation of students to study geography was diagnosed. Questionnaires, observations, and an analysis of academic engagement were used. The initial data on academic performance and attendance were also recorded, and the attitude of students to traditional and interactive forms of learning was determined.

2) The formative stage. Within 8 weeks, innovative forms and technologies of learning were introduced in the experimental group:

- Interactive maps and online platforms (Google Earth, LearningApps, World Geography Games) — for visualization and spatial thinking;
- Online quests and geographical quizzes (Kahoot, Quizizz) — for the development of gaming and competitive motivation;
- Virtual tours and VR technologies — for modeling geographical objects and phenomena;
- The “Flipped classroom” technology is used for self—study of theoretical material at home and active discussion in the classroom;
- The Jigsaw method is used to form cooperation, responsibility, and communication skills;
- Using Padlet and Canva to create interactive maps and posters on the topics being studied together.
- Each lesson included elements of project and research activities, as well as student reflection on the results of the work.

3) The control stage. After completing the training cycle, motivation was re-diagnosed using the same techniques as in the first stage.

The following methods were used for a comprehensive assessment:

- student questionnaire (according to the Reana–Luskanova scale of educational motivation);
- observation of activities in the classroom (with a record of activity, initiative, engagement);
- analysis of academic achievements (grades, results of control and project work);
- statistical data processing (calculation of averages, comparison of dynamics according to the Student's criterion).

Result and discussion

The results of the initial diagnosis showed that approximately 23 % of students (7 students) had a high level of intrinsic motivation to study geography, 47 % (14 students) had an average level, and 30 % (9 students) had a low level.

For 8 weeks, the formative stage was held using technologies: interactive maps, online quests, VR tourism, “Flipped classroom”, “Jigsaw”, Kahoot, Padlet.

Observations and questionnaires showed:

- Students actively participated in project and research assignments;
- Increased interest in independent work and teamwork;
- Many people noted positive emotions and pleasure from the lessons, which confirms the influence of technology on internal motivation.

The assessment of student engagement at the formative stage (based on observation) is shown in Table 4.

Assessment of student engagement at the formative stage (by observation)

Criteria for engagement	% of students actively participating
Involvement in discussions	80 %
Active in project work	73 %
Using ICT/GIS tools	87 %
Doing homework using technology	90 %

After completing the formative stage, the motivation level was re-diagnosed, as shown in Figure 1.

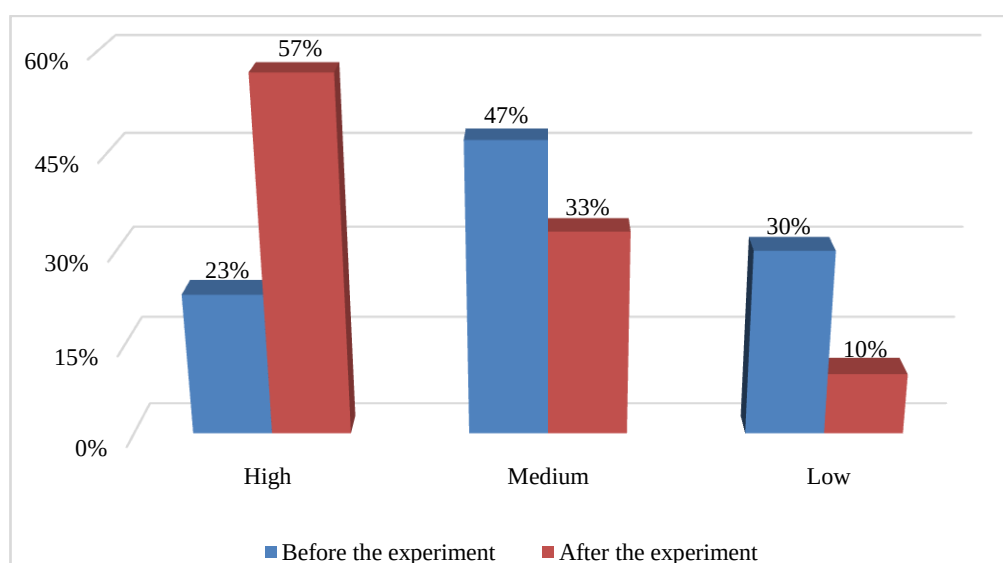


Figure 1. Comparison of academic motivation levels before and after the experiment

Statistical analysis:

- Average motivation score before the experiment: 3.2 ± 0.6
- Average motivation score after the experiment: 4.1 ± 0.5
- The Student's test showed a statistically significant difference: $t = 5.48$; $p < 0.01$

The analysis also revealed positive changes in the structure of educational motivation, in particular:

- an increase in the proportion of students with a high level of intrinsic motivation from 23 % to 57 %;
- decrease in the number of students with low motivation from 30 % to 10 %;
- An increase in cognitive interest and activity in the classroom, which was confirmed by the results of observation and questionnaires.

The conducted pedagogical experiment confirmed the significant impact of the introduction of innovative learning technologies on the level of educational motivation of students in geography lessons. From the point of view of theoretical provisions, the results of the study confirm that the use of ICT, interactive platforms and GIS enhances the internal motivation, cognitive interest and research activity of students, which coincides with the conclusions of A.K. Murzatayeva, N. Usenov, and also reflects Kazakhstani educational practice. The positive dynamics is consistent with foreign studies that show that the integration of GIS and interactive tasks contributes to the growth of motivation and competence development of students (Healy, Walshe, Geographical Association).

The practical aspect of the experiment demonstrates that the use of interactive and digital technologies makes the lesson more visual and engaging. The formation of high motivation is achieved not only through the use of technology, but also through the structured application of design and research methods, teamwork and independent activity of students.

In addition, the introduction of innovative technologies has had a positive impact on academic performance, activity in project work, and skills in independent exploration of geographical objects. Thus, the hypothesis of the study that the use of innovative learning technologies contributes to an increase in the level of educational motivation of students was fully confirmed: both quantitative and qualitative improvements in the motivational structure, an increase in internal motivation and cognitive interest were observed.

Based on the results obtained, practical recommendations for geography teachers are formulated. First, innovative technologies (ICT, interactive maps, GIS, online platforms) should be integrated into regular lessons, rather than used sporadically. Secondly, it is recommended to use design and research methods and active learning technologies (“Flipped classroom”, “Jigsaw”) to increase students' independence and responsibility. Thirdly, it is necessary to diversify the forms of feedback and knowledge control, including online quizzes, interactive tasks and collective presentations. It is also important to create conditions for positive learning dynamics, alternating individual and group work, stimulating cooperation and initiative. Finally, it is critically important to improve teachers' skills in the use of digital and interactive technologies through methodological courses, internships and the exchange of experience with colleagues.

Conclusion

The conducted research was aimed at studying the effectiveness of using innovative educational technologies in the process of teaching geography as a means of increasing students' learning motivation. A theoretical analysis of scientific sources has shown that in the context of the digital transformation of education, innovative technologies are becoming an important tool for enhancing cognitive activity, developing independence and forming a stable interest of schoolchildren in the subject.

The results of the pedagogical experiment confirmed the hypothesis that the systematic use of information and communication technologies, geoinformation systems, interactive platforms, game and project teaching methods contributes to a significant increase in the level of educational motivation of students. There was an increase in the proportion of students with a high level of intrinsic motivation, a decrease in the number of students with low motivation, as well as an increase in cognitive activity and involvement in the learning process.

The analysis of the obtained data showed that the greatest motivational effect is achieved with the integrated use of innovative technologies in combination with activity-based and personality-oriented approaches. Interactive maps, GIS, and digital educational platforms act not only as means of visualizing educational material, but also as tools for organizing students' research and project activities, contributing to the formation of subject and meta-subject competencies.

The practical implementation of the developed methodology has demonstrated that the effectiveness of innovative technologies largely depends on the pedagogical conditions of their implementation, the level of methodological and digital teacher training, as well as the consistency and purposefulness of their use. The occasional or formal use of digital tools does not provide a sustained motivational effect.

Thus, the use of innovative educational technologies in geography teaching should be considered as one of the key areas for improving the quality of education and creating sustainable learning motivation for students. The prospects for further research are related to the expansion of the sample, the study of the long-term impact of innovative technologies on educational achievements, as well as the development of models for teacher training for the effective use of digital tools in educational practice.

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Е.У. Нургазиев

География сабақтарында оқушылардың ынтасын арттыру құралы ретінде инновациялық оқу технологияларын қолдану

Мақалада география сабақтарында инновациялық білім беру технологияларын қолдану арқылы оқушылардың оқу мотивациясын арттыру мәселесі қарастырылды. Зерттеудің өзектілігі білім беруді цифрландыру үрдістерімен және оқу мазмұнын жаңарту контекстінде мектеп оқушыларының тұрақты танымдық мотивациясын қалыптастыру қажеттілігімен анықталады. Зерттеудің мақсаты — оқушылардың оқу мотивациясын арттыруда инновациялық оқу технологияларын қолданудың тиімділігін анықтау. Жұмыста ғылыми деректерді теориялық талдау, педагогикалық эксперимент, сауалнама жүргізу, бақылау және статистикалық өңдеу әдістері қолданылды. Эксперимент жалпы білім беретін мектептің 7-сынып оқушыларының қатысуымен өткізілді және констаттау, қалыптастыру және бақылау кезеңдерін қамтыды. Зерттеудің ғылыми жаңалығы — оқушылардың ішкі оқу мотивациясын қалыптастыруға бағытталған география пәнін оқытуда инновациялық технологияларды интеграциялаудың кешенді моделін эксперименттік апробациялау. Зерттеу нәтижелері оқу мотивациясының деңгейі, танымдық белсенділік және пәнге тұрақты қызығушылықтың статистикалық тұрғыдан мағыналы түрде артқанын көрсетті. Мектептегі география білім беру тәжірибесінде инновациялық технологияларды жүйелі түрде қолданудың тиімділігі туралы қорытынды жасалды.

Кілт сөздер: инновациялық оқу технологиялары, оқу мотивациясы, география, ICT, GIS, VR-технологиялар, «Flipped classroom», «Jigsaw», интерактивті платформалар, педагогикалық эксперимент.

Е.У. Нургазиев

Инновационные технологии обучения как средство повышения мотивации учащихся на уроках географии

В статье рассматривается проблема повышения учебной мотивации учащихся на уроках географии за счет использования инновационных образовательных технологий. Актуальность исследования определяется процессами цифровизации образования и необходимостью формирования устойчивой познавательной мотивации школьников в контексте обновления содержания обучения. Целью исследования является определение эффективности использования инновационных технологий обучения в повышении уровня учебной мотивации учащихся. В работе использованы методы теоретического анализа научных источников, педагогического эксперимента, анкетирования, наблюдения и статистической обработки данных. Эксперимент проводился с участием учащихся 7-го класса общеобразовательной школы и включал констатирующий, формирующий и контрольный этапы. Научная новизна исследования заключается в экспериментальной апробации комплексной модели интеграции инновационных технологий в преподавание географии, направленной на формирование внутренней учебной мотивации учащихся. Результаты исследования показали статистически значимое повышение уровня учебной мотивации, познавательной активности и устойчивого интереса к предмету. Сделан вывод о целесообразности систематического использования инновационных технологий в практике школьного географического образования.

Ключевые слова: инновационные технологии обучения, учебная мотивация, география, ИКТ, GIS, VR-технологии, «Flippedclassroom», «Jigsaw», интерактивные платформы, педагогический эксперимент.

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Information about the author

Nurgaziev E.U. — Master of Educational Sciences, Geography Teacher, Municipal State Institution “School-Gymnasium No. 68” of the Education Department of the city of Taraz of the Education Department of the Akimat of the Zhambyl Region, Taraz, Kazakhstan; e-mail: ermek_nurgaziev@mail.ru; ORCID ID: <https://orcid.org/0000-0003-0228-8127>