

IMPROVING THE EFFECTIVENESS OF GEOGRAPHY TEACHING THROUGH THE USE OF INNOVATIVE TECHNOLOGIES

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Abstract

The presented article considers innovative technologies and their advantages in teaching geography. The purpose of the research work is to consider ways to improve the effectiveness of teaching by using innovative technologies in school geography. The review of articles and works of scientists on innovative technologies in teaching geography is made. The peer-reviewed works served as a basis for determining the purpose and relevance of the article.

What is the innovation in the article? Among them were considered the questions of how to effectively use innovative technologies, what are their features and what results can be obtained? Despite the diversity of modern educational institutions, it is known that their main goal is to improve the educational process through the use of innovative technologies. In this regard, we considered the importance of effective use of innovative technologies, especially information technologies, in geographic education in the era of highly developed information age. After all, in order to provide quality education, students can access information, search for necessary data, systematize, analyze and select them, organize, transform, store and present them with the help of innovative technologies. In addition, information technology tools used in geographic education were described, in particular, interactive maps and globes, virtual tours, and the capabilities and effectiveness of geographic information systems.

Keywords: innovative technologies, geographic education, interactive maps and globes, virtual tours, geographic information systems.

Introduction. The first President of the Republic of Kazakhstan N.A. Nazarbayev in his message to the people of Kazakhstan emphasized that «in the XXI century the deadlock of the country that failed to develop its education is obvious». Nowadays, the development of innovative knowledge plays an important role for our country. To ensure a prosperous future, there is an obvious need to pay more attention to education [1]. Innovative approach to the educational process is a prerequisite for modern higher education.

Article 11 of the Law of the Republic of Kazakhstan «On Education» states: «The main task of the education system is to create individualized conditions based on national and universal values, achievements of science and practice»; the tasks of further development of the education system were set, «consisting in the creation of special learning conditions taking into account the individual characteristics of students and pupils [2]»

N.A.Nazarbayev in his message to the people of Kazakhstan says that we must develop together with the impulses of centuries of development, that is, if the sphere of education is developed, the socio-economic development of the country will go hand in hand.

Address of the Head of State Kassym-Jomart Tokayev to the people of Kazakhstan [3]: «The development of science is our most important priority... In general, the sphere of education and science of our country faces a colossal task. It means to be able to always be one step ahead and present new innovations, as well as to meet the requirements of the time», - he emphasized

the importance of readiness for innovation in education. This shows the organization of innovation activities and active use of information and communication technologies to implement the innovation process in modern education. Since it is known that a person working with new technologies is not an innovator, the main problem is that specialists have the skills of innovative thinking and innovative actions [4]. In addition to traditional methods of learning material assimilation, new (systemic, problem-based) methods are used, which form the basis of modern teaching technologies.

Article 1, paragraph 22 of the Law of the Republic of Kazakhstan «On Education» provides that «innovation-educational consortium... is an equal association for joint activity, uniting intellectual and other resources for training of highly qualified specialists on the basis of technological innovations». The concepts specified in the law will serve us as a basis for the realization of subjective ideas in the professional training of future specialists in universities [2, p.9].

Currently, a new education system has been created in the Republic of Kazakhstan, which has advanced into the world educational space [5]. The reason for this is the changes in the education system. This is due to the fact that the paradigm of education has changed, the content of education has been updated, new views and new communications have appeared. All this requires education and upbringing of the next generation in accordance with the demands of society, knowledge and versatility of teachers, as well as the ability to master innovative technologies. The ability to

use innovative technologies in teaching is a new weapon of the teacher, or rather, the ability to widely use methods through innovative technologies. Innovation itself means introducing something new, bringing something new, new methodology and new technology [6]. In this regard, in the direction of improving the quality of the country's education sphere, the direction was taken to ensure the integration of the innovation process at all levels of the education sphere [7]. That is, innovation is an innovative process in the sphere of education and shows that it is interconnected at all levels.

If we consider the concept of innovation more specifically, many scientists give different definitions. Innovation in Latin means «new», «renewal». In addition, «innovation» is a new result thought out to achieve a certain goal. According to Comenius, the most necessary things for didactics are: firstly, thought-out goals; secondly, tools adapted to achieve these goals; and thirdly, to find firm rules for the use of our specific means to ensure the achievement of the goal [8, 176p].

In this regard, there is currently no definition of the objective necessity and conditions for the use of innovative technologies in education, as well as the need to improve the learning process through innovative technologies in education [8]. Society needs talented and capable people. That is why, at present, almost all professions require from school staff not only abilities, dexterity, and special mental activity, but also great responsibility and intense activity. Regarding this issue, it is not superfluous to say that the issue of preparing future teachers for innovation activity is currently the subject of research of domestic and foreign scientists.

The task of today's teachers is not to give students a huge amount of knowledge, but to create conditions for students' independent learning. In this regard, it is an urgent and important issue to improve the quality of geography teaching, to adopt teaching methods as an object of scientific research and to consolidate research and direct experience [9].

In this regard, it is necessary to increase the effectiveness of the use of new innovative technologies in geography lessons. Currently, a large number of innovative technologies are used in the educational process. When teaching geography, the teacher should constantly expand their horizons, add knowledge to

knowledge and be able to apply new teaching technologies in education.

Materials and methods of the study. Geography is known to be an important subject that gives students an understanding of the world around them. However, teaching geography can also be challenging when you are trying to keep students interested in the subject. One way to address this is to introduce innovative technology into the classroom. At the same time, with the development of technology, innovative technologies and resources can be used to make geography lessons more interactive and engaging. Therefore, in this study, we selected innovative technologies used in secondary education and showed that they have been successful in teaching geography.

Literature has been analyzed in order to improve the effectiveness of teaching using innovative technologies in teaching geography. As part of this work, we considered several types of innovative technologies. Key words «innovation, innovative technologies, educational institutions, geography, renewed education, quality education» were obtained to search for materials. The Law of the Republic of Kazakhstan «On Education», the Message of the President of the Republic of Kazakhstan, articles of foreign scientists and textbooks of domestic scientists were taken as a basis for the study. In the course of the study the methods of analyzing scientific literature, information processing, theoretical analysis of scientific and creative works were used.

Results and Discussion. Today, in order to have a quality and effective education, it is necessary to use various innovative technologies in teaching. Geography is a discipline that combines elements of natural, social and human sciences. Due to the understanding of complex phenomena and geographical patterns, innovative technologies become the main tools of teachers for quality education of students [10].

Nowadays, innovative technologies are used in various fields. At the same time, the scale of information technology is growing day by day.

Including in the sphere of education there are very many types of innovations used. In our opinion, the main ones include developmental learning, level-based learning, problem-based learning, modular technology, design technology, information technology (figure 1):

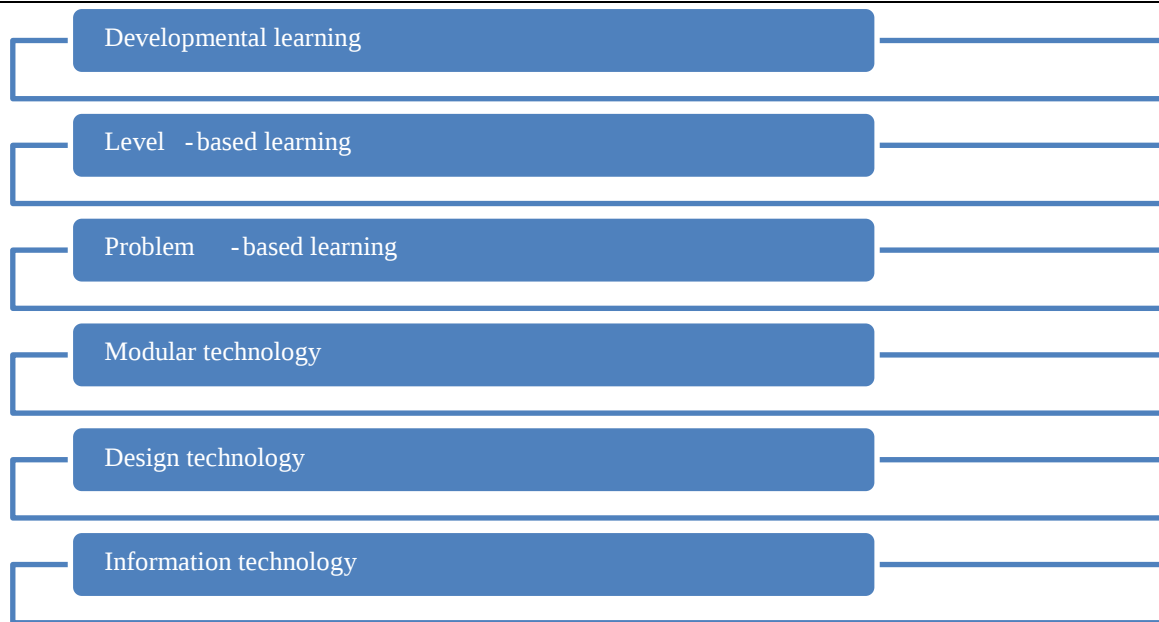


Figure 1. Types of innovative technologies

Developmental learning – according to the concept proposed in 1996 by L. V. Zenkov, D. B. Elkonin and V. V. Davylov [11], the most important place in the child's development is given to learning.

Level-based learning – is realized not by reducing the amount of information learned, but by diversifying the demands placed on students [12, 16p].

Problem-based learning – is a technology that encourages students to find a solution to the problem, not by presenting knowledge in a ready-made form, but by setting a certain problem task [13].

Modular technology – the student receives knowledge systematized not in separate chapters, but in the form of a single topic [14, 78p].

Design technology – is one of the most effective methods oriented to education, creating conditions for the realization of cognitive and practical abilities [15].

Information technology – is a set of knowledge about the ways and means of working with information resources, as well as the method and means of collecting, processing and transmitting information to obtain new information about the object under study [16, 13p].

The application of the mentioned innovative technologies at the appropriate level in the field of education can guarantee the learners to have productive knowledge, i.e. nowadays, if we can use innovative technologies, we will have many advantages and benefits.

In the modern information age, among the innovative technologies in education, the effective use of information technology is very important. Some of their types are an integral part of modern geographical education:

1. *Interactive maps and globes.* One of the most effective methods of teaching geography is the use of information technology teaching aids - interactive maps and globes. These tools allow students to visually explore different parts of the world and understand the relationship between them. With digital technology, students can zoom in and out, rotate and manipulate maps to better understand the physical and political features of different regions.

2. *Virtual tours.* Another innovative technology that enhances geography teaching is virtual field trips. Using virtual reality (VR) and augmented reality (AR) tools, students can travel to different parts of the world without leaving the classroom. They can explore different environments, cultures and landscapes and learn about the history and geography of different regions.

3. *Geographic information systems.* Geographic Information Systems (GIS) are powerful tools that help students analyze and interpret complex geographic data (figure 2).

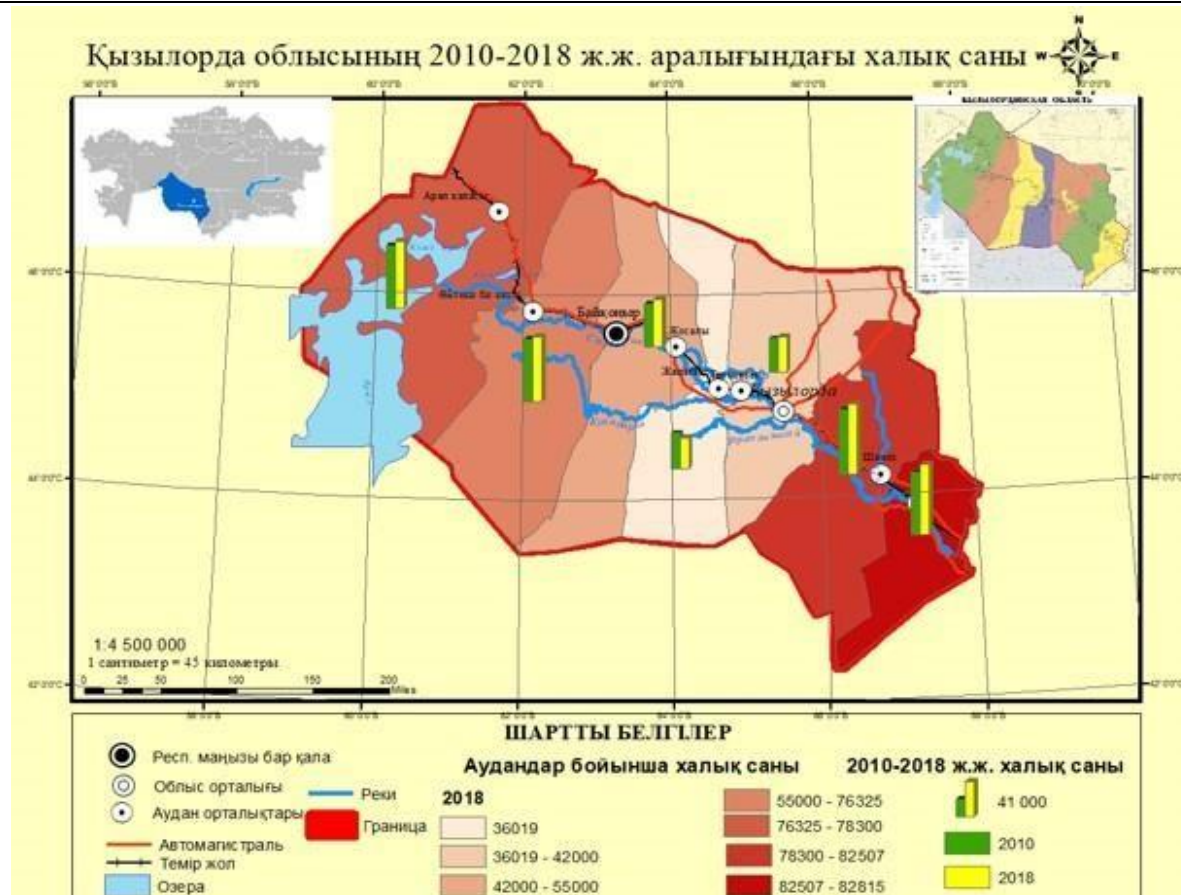


Figure 2. Creation of the Population Map of Kyzylorda region for 2010-2018, created using ArcGIS program

One can create maps related to topics using the ArcGIS program. They can also add diagrams, statistics to the maps. These maps allow students to gain a deeper understanding of the subject matter.

Data on maps created with GIS can be analyzed and conclusions can be drawn about different regions and their physical and cultural features. These tools help students understand the impact of human activities on the environment and find solutions to environmental problems.

Conclusion. When forming a new thinking, unified worldview in the younger generation, it is very important to use learning technologies that facilitate the acquisition of world-class knowledge and skills. They are rapidly developing, new types are emerging, and the previous ones are evolving. It is also known that in education one of the most important issues is the mastery by teachers of the scientific and pedagogical foundations of innovation. That is why innovative technologies contribute to the development of thinking, culture, national spirit and consciousness of students, the formation of a purposeful personality. The types that constitute the main types of information technology and are used in geography education include interactive maps and globes, virtual tours and geographic information systems, which can make geography lessons interactive, exciting and meaningful for students. Through the widespread use of these tools in geography teaching, teachers can explain the world, its different cultures and environment to students in greater depth.

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