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Heat Engineering Heterogeneity Of The Outer Walls Of Earthquake-Resistant Buildings

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ABSTRACT

When assessing the level of energy efficiency of civilian buildings, a special place is given to establishing the level of thermal protection of their external enclosing structures. Significant discrepancies in the results of theoretical and experimental studies of heat fluxes through the outer walls of buildings erected in seismic areas are associated with the design features of fences - the presence of reinforced concrete elements in them: anti-seismic belts at the level of floors, cores at intersections of walls and along the edges of large window openings ... In addition, in recent years, external walls have become widespread, which are filling of bricks or aerated concrete blocks between the main structural elements of the frame - monolithic reinforced concrete columns and crossbars.

The introduction of reinforced concrete elements into the structure of the external wall fencing provides strength, rigidity and stability of buildings, guarantees its seismic resistance. At the same time, reinforced concrete inclusions are significant “cold bridges” in warmer brick or aerated concrete masonry. Such heat engineering heterogeneity of earthquake-resistant outer walls significantly complicates the process of determining their heat-shielding properties. This, in turn, leads to errors in the design of heating systems, which inevitably affects the thermal comfort of the premises, the formation of condensation and mold zones in the cold zones of the inner surface of the fences.

The article presents the results of theoretical and experimental studies to determine the heat-shielding properties of external heat-engineering heterogeneous walls of earthquake-resistant buildings. The most reliable method for calculating the reduced resistance to heat transfer of an inhomogeneous external structure and the coefficient of its thermal inhomogeneity have been established.

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KEYWORDS

Energy efficiency, thermal protection, cold bridge, thermal engineering heterogeneity, heat transfer resistance, outer walls, reinforced concrete inclusions, thermal comfort

INTRODUCTION

A significant increase in energy prices in the world community was the reason for the tightening of requirements for saving fuel and energy resources in all sectors of the economy [1, 2, 3]. One of the most energy-intensive sectors of the national economy, consuming up to 40% of the country's fuel and energy resources, is the housing and utilities sector. At the same time, as noted by numerous researchers [4,5,6], the real potential of energy saving in this area can be from 20 to 30%. The solution to this problem is associated with increased requirements for the quality of building design and, first of all, its enclosing structures, since design errors lead to a decrease in the heat-shielding properties of fences and an increase in operating energy costs [7,8]. In this regard, research aimed at increasing the level of energy efficiency of civil buildings and improving methods for assessing the heat-shielding properties of external enclosing structures is of particular importance.

THEORETICAL AND EXPERIMENTAL RESEARCH

When assessing the level of energy efficiency of civilian buildings, a special place is given to establishing the level of thermal protection of their external enclosing structures. Significant discrepancies in the results of theoretical and experimental studies of heat fluxes through the outer walls of buildings erected in seismic areas are associated with the design features of the fences - the presence of the structure of reinforced concrete elements in them: anti-seismic belts at the floor level, cores at intersections of walls and along the edges of large window openings [nine]. In addition, in recent years, external walls have become widespread, which are filling of bricks or aerated concrete blocks between the main structural elements of the frame - monolithic reinforced concrete columns and crossbars.

The introduction of reinforced concrete elements into the structure of the external wall fencing provides strength, rigidity and stability of buildings, guarantees its seismic resistance. At the same time, reinforced concrete inclusions are significant "cold bridges" in warmer brick or aerated concrete masonry. Such heat engineering heterogeneity of earthquake-resistant outer walls significantly complicates the process of determining their heat-shielding properties. This, in turn, leads to errors in the design of heating systems, which inevitably affects the thermal comfort of the premises, the formation of condensation and mold zones in the cold zones of the inner surface of the fences.

The normative document [10] provides for two approaches to the determination of the reduced resistance to heat transfer of heat-engineering heterogeneous external walls, depending on their design solution. In the first case, it is proposed to cut the wall and determine the thermal resistance first with planes parallel and then perpendicular to the heat flow. In this case, the reduced thermal resistance is determined by the formula:

$$R_к^{ht} = \frac{R_a + 2R_b}{3}, \quad (1)$$

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where R_a – thermal resistance of a structure when cut by planes parallel to the heat flux,

R_b – thermal resistance of a structure when cutting it by planes perpendicular to the heat flow. R_a and R_b calculated according to the formulas given in [10]. The calculation turns out to be quite time consuming.

If R_a more 1,25 $R_б$ or the wall structure has protrusions, then it is recommended to use temperature fields to determine the reduced thermal resistance in [10]. This implies either the implementation of experimental studies, or the use of special calculation programs that make it possible to determine the average temperatures on the inside ($\tau_{в.ср}$) and outdoor ($\tau_{н.ср}$) surfaces of the structure. Then it is assumed to calculate the magnitude of the heat flux passing through the outer fence by the formula:

$$Q^{calc} = \alpha_в(t_в - \tau_{в.ср}) = \alpha_н(t_н - \tau_{н.ср}), \quad (2)$$

where $\alpha_в$ – heat transfer coefficient of the inner surface of the building envelope, $\alpha_н$ – heat transfer coefficient for winter operating conditions of the outer surface of the enclosing structure, $t_в$ – design indoor air temperature, $t_н$ – design outdoor temperature.

Determination of the reduced resistance to heat transfer of a non-uniform enclosing structure (R_o) in this case, according to [10], it is produced by the formula:

$$R_o = \frac{t_в - t_н}{q^{calc}} \quad (3)$$

The most accurate determination of the reduced resistance to heat transfer of a heat-engineering heterogeneous wall structure makes it possible to establish a really reasonable thickness of the insulation to ensure the required level of thermal protection of buildings. It would seem that the problem is completely solvable and does not require any additional research. However, the question is precisely in ensuring a sufficiently accurate determination of the thermal properties of fences, since the generalization of data on the value of the actual energy consumption of residential buildings of different years of construction shows that the specific consumption of thermal energy in old panel houses and modern residential buildings with two-layer walls of brickwork on cement sandy mortar and facing brick practically does not differ. One of the reasons for this phenomenon is that the structures of two-layer walls are often overestimated in terms of their thermal protection parameters.

In this regard, we have calculated the resistance to heat transfer of a two-layer wall structure by various known methods in order to establish their equivalence, on the one hand, and to identify the actual effect of "cold bridges" on the heat-shielding properties of fences, on the other hand.

For research, the structure of the outer wall in a building with a monolithic reinforced concrete frame was adopted, which is based on the floor by floor on reinforced concrete floors and consists of two layers (Fig. 1):

- an internal non-bearing layer made of brickwork on a cement-sand mortar with a thickness of 380 mm (taking into account the mortar for fixing the facing layer, a thickness of 390 mm was taken);
- the outer facing layer of facing brick, one brick thick.

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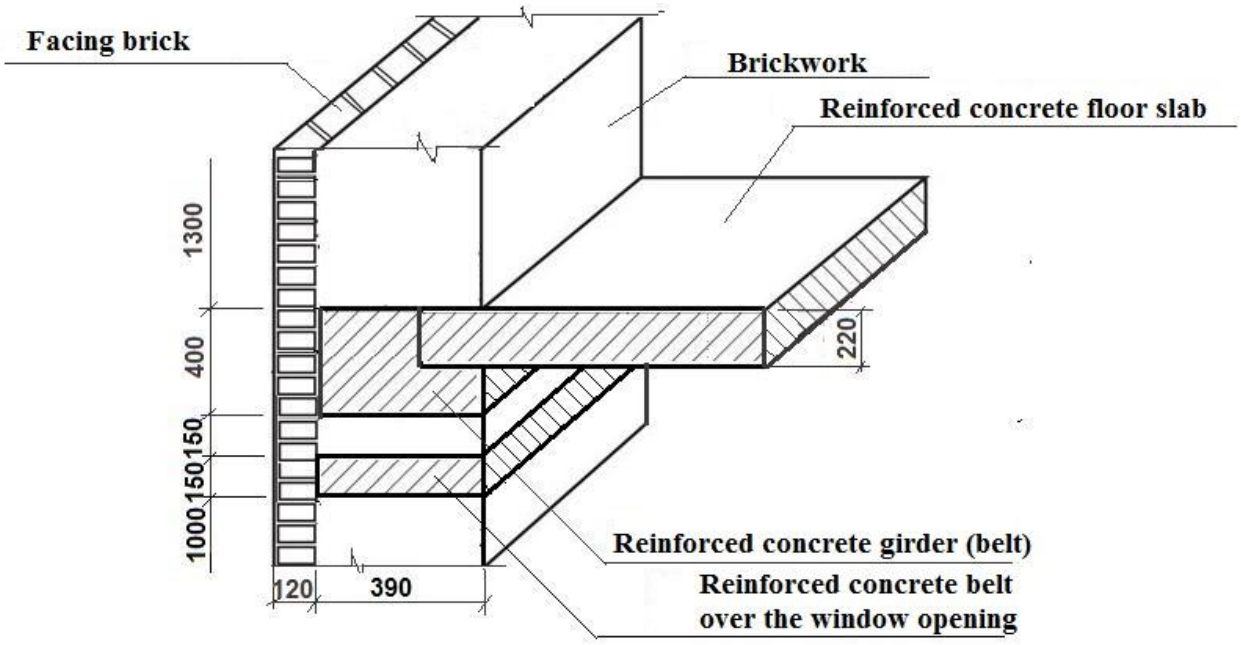

Fig.1. Constructive solution of the outer wall of the building

The reduced resistance to heat transfer of an inhomogeneous outer wall was determined for the intermediate floor and without taking into account the presence of windows. The design diagram of a fragment of the outer wall is shown in Fig. 2.

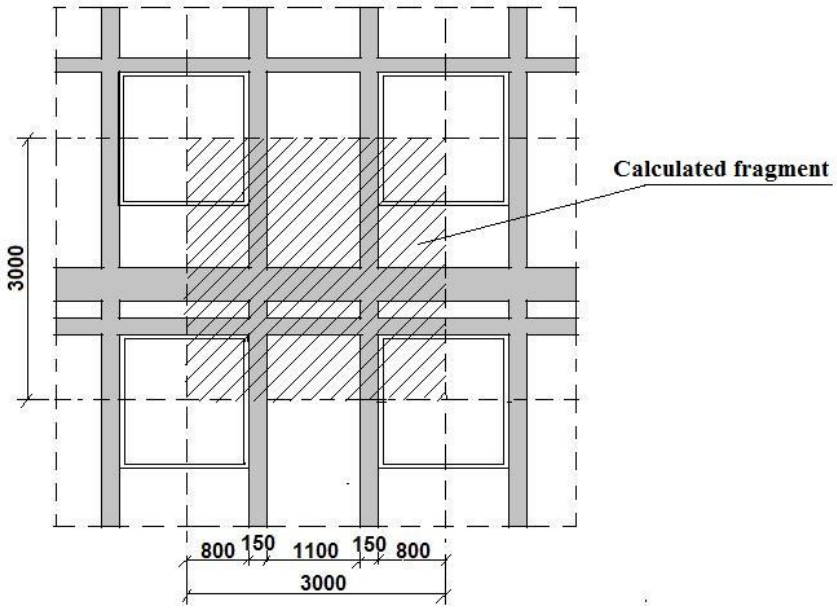

Fig. 2. Scheme of the calculated fragment of the wall of a residential building

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Thermal characteristics of materials and boundary conditions were adopted according to the normative document [10]. The masonry of the walls was taken from ordinary bricks on a cement-sand mortar, and the facing layer was made of ceramic hollow bricks with a density of 1300 kg / m^3 on a cement-sand mortar.

According to the methodology given in the normative document [10], the values of the thermal resistance of the outer wall were determined:

- when cutting it by planes parallel to the heat flow R_a;
- when cutting it by planes perpendicular to the heat flow R_b.

The accepted design scheme is shown in Fig. 3. The calculation was carried out on a site without window openings.

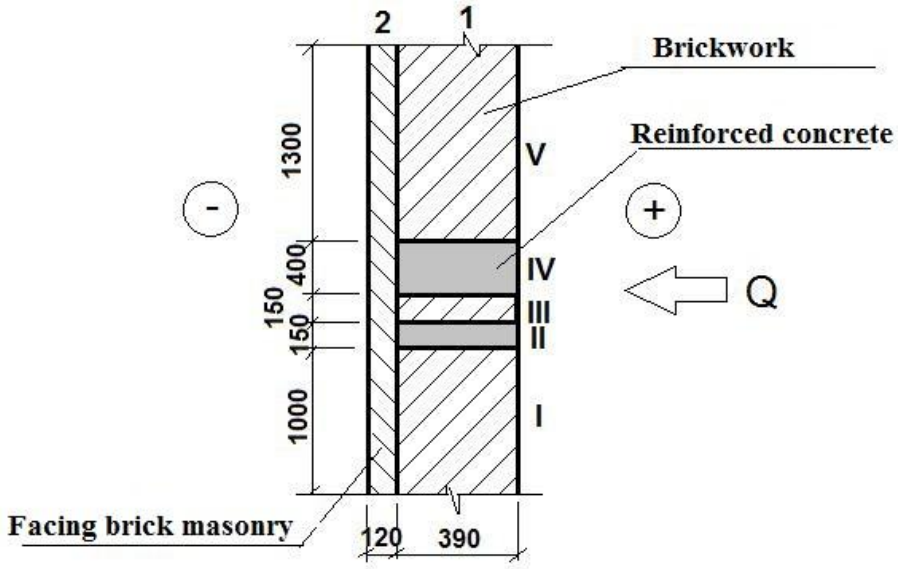

Fig. 3. Calculation scheme for determining the reduced thermal resistance
1, 2 - areas perpendicular to the heat flow; I –V - sections parallel to the heat flow; Q - heat flow

Since, as a result of the calculation, it was determined that R_a= 0,558 $[\frac{м^2 \cdot {}^0C}{Bm}]$ < R_b = 0,653 $[\frac{м^2 \cdot {}^0C}{Bm}]$, then the reduced thermal resistance of a heat-engineering non-uniform outer wall was determined by the formula (1):

$$R_к^{tr} = \frac{0{,}558 + 2 * 0{,}653}{3} = 0{,}621\ [\frac{м^2 \cdot {}^0C}{Bm}],$$

At the same time, the reduced resistance to heat transfer of the outer wall was:

$$R_0 = \frac{1}{\alpha_в} + R_к^{tr} + \frac{1}{\alpha_н} = \frac{1}{8{,}7} + 0{,}621 + \frac{1}{23} = 0{,}779\ [\frac{м^2 \cdot {}^0C}{Bm}],$$

$\alpha_н$, $\alpha_в$ – heat transfer coefficients, respectively, on the outer and inner surfaces of the wall, taken according to the regulatory document [10].

The coefficient of thermal engineering heterogeneity was r=0,823.

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Taking into account that in many advanced countries of the world, in order to improve the accuracy of determining heat losses through heterogeneous external enclosing structures of buildings, they switched to the method of calculating the reduced resistance to heat transfer, based on streamlining the accounting of additional heat losses through heat-conducting inclusions [11], the specified technique. For the selected fragment of the outer wall of the building (Fig. 2), specific heat losses through the "cold bridges" were determined under the same initial conditions.

Calculation of specific heat losses through the "cold bridges" of the outer wall consisted of the following stages:

- marking of nodes on a fragment of an external wall containing heat-conducting inclusions and determination of their geometric dimensions;
- determination of the temperature field of a unit with a heat-conducting connection;
- calculation of specific heat losses through a heat-conducting connection [12].

The designation of the design nodes on the selected wall fragment is given in Fig. 4.

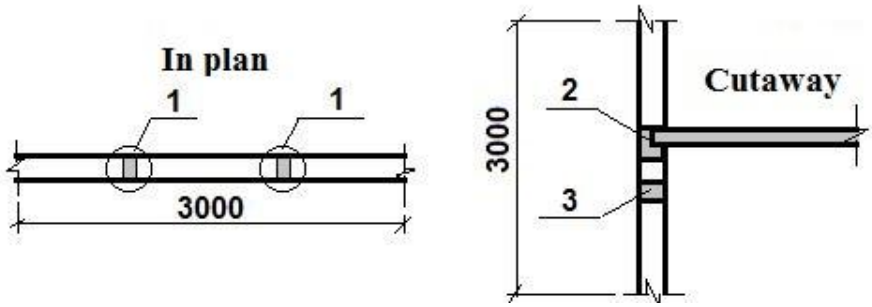

Fig. 4. Marking of units with heat-conducting inclusions

In accordance with the geometric dimensions of a fragment of the building wall (Fig. 2), the geometric and specific geometric indicators of elements with heat-conducting inclusions were determined, which are presented in Table. 1.

Table 1. Geometric characteristics of units with heat-conducting inclusions

Node marking	Node type	Brief description of the node	Geometric indicator	Specific geometric indicator
1	Linear vertical	Junction of the outer wall to the core	4,9 м	0,5444 м/м²
2	Linear horizontal	Adjacency of the outer wall to the interfloor ceiling and seismic belt	3,0 м	0,3333 м/м²
3	Linear horizontal	Adjoining the outer wall to the belt above the window opening	3,0 м	0,3333 м/м²

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Table 2.Calculations of the temperature fields of the nodes with heat-conducting inclusions were carried out using the TEMPER 3D computer program

Construction element № / node	Specific geom. index	Specific heat loss, Вт/(м^{2}·^{0}С)	Specific heat flux due to the element, Вт/(м^{2}·^{0}С)	The share of the total heat flux through the fragment, %
Flat element /-	a=1м^2/м^2	U_1=1,0571	1,0571	63,3
Linear vertical /1	l_1=0,5444 м/м^2	Ψ_1=0,3356	0,1827	11,0
Linear horizontal /2	l_2=0,3333 м/м^2	Ψ_2=0,9170	0,3056	18,4
Linear horizontal /3	l_3=0,3333 м/м^2	Ψ_3=0,3636	0,1212	7,3
			$1/R_{пр}$=1,661	100

In accordance with the performed calculation, the reduced resistance of a non-uniform wall of a residential building was 0,602 м^2·^{0}С/Вт with the coefficient of heat engineering heterogeneity r=0,636.

Comparison of the results of calculations using the two methods showed that the discrepancy is quite significant and amounts to 22,7%.

To establish the most accurate method, field studies were carried out. A grid with 10x10 cm cells was applied to the selected section of the wall from the outside.At the nodes of the grid, the temperature was measured on the surfaces of the wall fence using a pyrometer in the evening in order to avoid exposure to the structure of direct and reflected sunlight. The obtained measurement results were processed and, by averaging, the temperature on the outer surface of the building wall was determined, which was: +4,3^{0}С. At the same time, the external temperature was fixed at + 3^{0}С, and the internal air temperature was +20,5^{0}С. As a result, the actual value of the reduced resistance to heat transfer of the outer wall of the building was determined, which was R_0= 0,581 $\left[\frac{м^2 \cdot {}^0C}{Bm}\right]$.

The discrepancies in the values of the reduced resistance to heat transfer of a heat-engineering non-uniform outer wall, obtained experimentally and by the two methods used, amounted to: 25% and 3,5%.

CONCLUSION

The studies carried out have proved that the outer small-element walls of earthquake-resistant buildings have significant thermal engineering heterogeneity, which significantly affects the heat-shielding properties of the outer shell of the building.

Comparison of the results of theoretical calculations and a full-scale experiment, as well as data from previously performed studies [13, 14], confirmed that the transition to mandatory accounting for the values of specific heat losses of enclosing structures when determining the thermal properties of the outer shell of buildings is advisable. It will improve the quality of assessing the energy characteristics of buildings, as well as the design of their enclosing structures and heating systems.

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R&D Expenditure As A Factor In The Development Of The Economy Of Knowledge

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ABSTRACT

Creating conditions for R&D in the post-industrial type of development is an extremely urgent issue. With its scientific potential, the economy will be in a significant advanced position compared to developing countries. The article examines the current state of research in the field of the economy of knowledge and innovation, reveals the factors of accelerated development of the knowledge economy. Separately, the requirements are disclosed that make it possible to create systemic prerequisites for the formation of a knowledge economy and an innovation environment.

KEYWORDS

Research, R&D, innovation, science, human capital, knowledge economy

INTRODUCTION

R&D - research and development work - a set of scientific and design work, the purpose of which is to acquire new knowledge or create a new product / technology. R&D expenditures (Research and Development and Development Works) are an important indicator of the innovative activity of a state, company or enterprise. However, R&D expenditures are recognized whether or not they are positive.

To carry out R&D, it is required to allocate budgets (funding) for R&D, as well as the availability of highly qualified personnel, whose tasks include the implementation of the R&D complex. R&D activities should be carried out in accordance with a clear action plan, broken down into stages.

Very often, R&D work and services (Research and Development and Experimental Design Works) are accompanied by the following types of work:

- Scientific Research Work (R&D),
- Experimental Design Work (ROC),
- Technological Work (TR),

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- other research work aimed at obtaining and using new knowledge.

The main difference between research and development (R&D) and related activities at the enterprise is the presence of an element of novelty in the development. In this case, we are talking precisely about the creation (development) of a new type of technology, products, services, etc.

Spending on science is considered to be a measure of the maturity of an economy. For commercial companies, many believe that the more investment in new developments, the higher the return. It is not that simple. Statistics show that there is no direct relationship, and investing in R&D should be thoughtful and rational.

The Main Findings and Results

In the knowledge economy, it is an important condition for activating human capital and creating incentives to attract talented young specialists to scientific activities. This is feasible, first of all, at the existing scientific sites of universities and other scientific and educational organizations. Scientific research must have a clear connection with innovative trends in the development of the economy. In particular, scientific activity should be organized in such a way as to directly determine the level of innovative activity of entrepreneurship.

In more developed and wealthy countries, due to the rational development of the knowledge economy, there is a high level of income, a high level of provided medicine and a strong educational system. This level sets the goal for each developing country. And if you look at it in detail, you can see the following: formed institutions, infrastructure, constantly entering innovations in any field of activity, a stable financial position. And also the most important thing is a rational direction economically on the right track.

A.S. Shurupova [1. 14-15] notes that the role of intellectual and information resources in the world experience in the development of the knowledge economy is high. She says that the development of the knowledge economy in the United States is associated with high levels of R&D spending. In recent years, many countries have paid particular attention to the development of areas such as ICT and biotechnology (or nanotechnology), which require active scientific and knowledge intervention. However, energy technology remains a priority in Japan, agriculture in Canada, space exploration in France, and industrial technology in Canada, Germany, Italy and South Korea. In the second half of the 90s of the twentieth century, in many countries, interest in improving the procedures for scientific and technical forecasting, selection and assessment of priorities for scientific and technological development increased. This is due to the fact that the role of research in ensuring economic growth is increasing, and there is a desire to more effectively use the limited public resources allocated to research and development.

In fact, if we consider the costs of R&D, we get the following data (Table 1):

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Table 1
R&D expenditures of countries of the world (percent of GDP) [2]

№	The state	2014 year	2015 year	2016 year	2017 year	2018 year
1	Israel	4,2	4,3	4,5	4,8	5
2	South Korea	4,3	4,2	4,2	4,6	4,8
3	Sweden	3,1	3,3	3,3	3,4	3,3
4	Japan	3,4	3,3	3,2	3,2	3,3
5	Austria	3,1	3,0	3,1	3,1	3,2
6	German	2,9	2,9	2,9	2,9	3,1
7	Denmark	2,9	3,1	3,1	3,0	3,1
8	USA	2,7	2,7	2,8	2,8	2,8
9	Belgium	2,4	2,5	2,6	2,7	2,8
10	Finland	3,2	2,9	2,7	2,8	2,8
30	Russian Federation	1,1	1,1	1,1	1,1	1,0
62	Uzbekistan	0,2	0,2	0,2	0,2	0,1
64	Kazakhstan	0,2	0,2	0,1	0,1	0,1

From the data in the table, we know that the country that spends the most on GDP is Israel. If we analyze this country, we see that research in universities is second only to the United States (scientists are also known as Nobel Prize winners), human capital holds a special place, and the level of industrial integration with research is very high. South Korea, which is ranked second, also has a high level of investment in knowledge, and ICT costs are also significant. It should be noted that the focus on ICT is particularly strong in this country. In general, the knowledge economy is formed by spending on R&D over the past 10 years for a dozen countries in the table. They are characterized by the production of scientific knowledge, technological innovation, the integration of business and higher education, and high spending on innovative goods and services.

This is due to the fact that in most of the countries of the world that spend on R&D, the knowledge economy is moving in the right

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direction, and scientific research is the driving force of the economy.

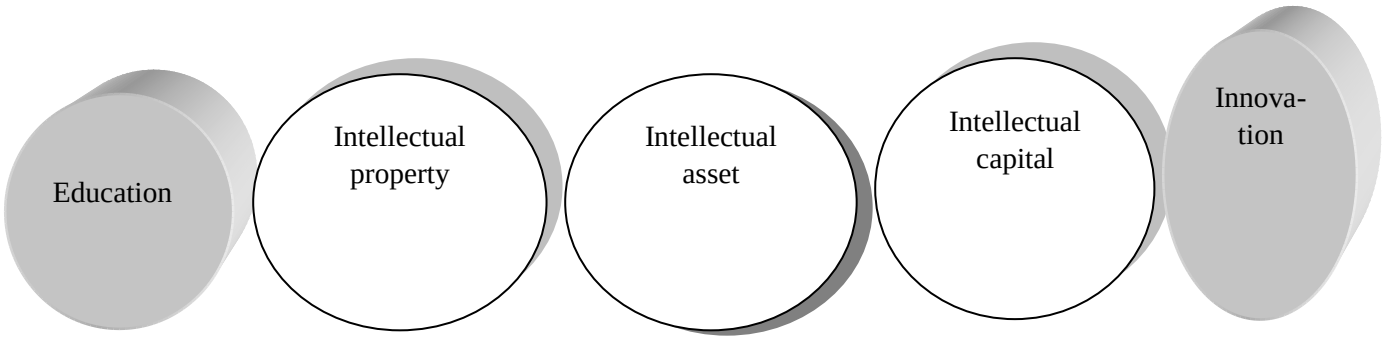
Talking about science in an ideological regime (why the state allocates less to scientists than to athletes) is unproductive. In most countries, the corporate sector bears the main burden of spending on new developments. It makes no sense to calculate the average percentage of investments in R&D in business, in each industry the need for innovations and the cost of their serial production are different.

The concept of the knowledge economy was introduced in developed countries thanks to the involvement of highly potential specialists in research. According to the International Intellectual Property Organization, 16% of China's population has applied for a patent for digital communications, 12% in the United States for computer technology, 11.2% for technical equipment in Japan and 10.7% for a car in Germany [3]. Today, these patents are world leaders in the application of science-based innovations in various sectors of the economy. For example, in 2019, Huawai Techlogies Co., a digital communications organization in China, received 4,411 [3] international scientific development patents. This shows how developed the knowledge economy is in this country.

Today, innovation is seen as one of the main sources of economic development. Innovative resources are among the most important reproductive and stimulating resources of the national economy. In the knowledge economy, modern innovations play a dominant and decisive role in production; they become an important factor in competition with the world, in the development of research and development, and intellectual capital.

The rapid development of various spheres of society and the state requires reforms based on modern innovative ideas, developments and technologies that provide a fast and high-quality path for our country to become one of the leaders of world civilization.

The network of research and design organizations, in general, scientific and methodological support for the activities of enterprises representing innovative business, plays an important role in increasing the efficiency of innovation processes. Knowledge, intellectual property, intellectual assets, intellectual capital and ultimately innovative entrepreneurship play a key role in this context (Figure 3). This chain is built in such a way that when a part is broken, all processes collapse on a massive scale, and the economy loses its connection with research.



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3-figure. A theoretical look at the process of transforming knowledge into innovation.

In this chain, we can describe a linear model of knowledge transformation through the Institute of Intellectual Property (in our country, this is an intellectual property agency) as follows: the generated knowledge is taken into account by a research organization and becomes an intellectual asset of an economic entity; at the next stage, they are expressed in the form of capital of intellectual assets used in the innovation process; the use of intellectual capital in the production process leads to innovation. Consequently, the transformation of knowledge into intellectual capital (income-generating capital) leads to the emergence of innovative entrepreneurship in the economy.

According to A.S. Murtazin [4. 107-107], intellectual capital at the micro level is capital formed from knowledge, skills, production experience, personnel qualifications, as well as intangible assets, including software, patents, databases, trademarks, which are effectively used to generate profit (economic benefit). ... At the macro level, intellectual capital is human capital and part of the structural intangible capital of a particular country. At the macro level of intellectual capital: a part of the population with high ideas and postgraduate education, using new ideas, creative samples, certain elements of intellectual abilities, as well as a special category of the economically active population (entrepreneurs engaged in real production and innovation). included). Intellectual capital at the macro level includes systems for collecting and storing knowledge and data (databases, media, libraries, communications), knowledge production systems (various research organizations, design bureaus, scientific departments of companies, etc.), Complex training (general, secondary, higher and postgraduate education), as well as the institutional structure (a favorable environment for the production and free transfer of knowledge, state policy in the field of protecting the scientific potential of the country and the legal space for increasing the intellectual capital of the country's economy).

According to the State Committee on Sustainable Development Statistics, the number of surveys per million population in Uzbekistan and the cost of research and development are as follows. (table 2).

table 2
Costs for R&D and the dynamics of the number of researchers per 1 million population [5]

Indicators	2014 y	2015 y	2016 y	2017 y	2018 y
R & D expenditure as% of GDP	0,16	0,17	0,18	0,16	0,1
The number of researchers (in full employment equivalent) per 1 million population	492	487	495	485	470

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Analyzing the data in Table 2, we can say that the number of researchers in the cost of research and development (R&D) increased in 2016, since it was during this period that Uzbekistan again switched to a two-tier system of doctoral and doctoral studies. This change affected them by a small shift in cost and number of researchers. Of course, we need to analyze this situation. In developed countries, R&D costs are around 1.5–3% of GDP, while in developing countries this figure is usually 0.4%. So these numbers are normal.
The Committee on Intellectual Property of the Republic of Uzbekistan is an organization that studies the practical application of the knowledge economy in Uzbekistan and the level of intellectual capital. According to him, the number of applications for inventions in Uzbekistan is growing from year to year. (table 3).

table 3
Number of applications for inventions in Uzbekistan [6]

Indicators	2013 y.	2014 y.	2015 y.	2016 y.	2017 y.	Total
Total number of applications	557	568	507	555	553	2740
National applicants	299	345	288	353	357	1642
Foreign applicants	258	223	219	202	196	1098
Including under a patent corporation agreement	248	210	213	194	185	1050

Analyzing Table 3, we see that the number of national applicants for inventions increases from year to year, accounting for 64.6% of the total number of applicants. This testifies to the courage and confidence of our domestic inventors in the face of tomorrow's economic growth. The annual registration of these inventions can be seen in the table below. (table 4).

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table 4
The dynamics of registration of inventions [6]

Indicators	2013 y.	2014 y.	2015 y.	2016 y.	2017 y.	Total
Total number of applications	184	179	153	166	205	887
National applicants	105	106	94	102	144	551
Foreign applicants	79	73	59	64	61	336
Including under a patent corporation agreement	72	70	56	62	58	255

Based on the data in Table 4, it should be noted that in 2017 there was an increase of 23.5% compared to the previous year. It can be seen from them that there are 70.2% more inventions of domestic manufacturers.

In 2017, there were 107 utility models, 124 industrial designs, 2300 trademarks, 2254 computer programs and databases, 40 breeding achievements and 388 intellectual property rights[6].

Summing up the author's research, we note that for the development of the knowledge economy in the above-mentioned states, we emphasize that the implementation and fulfillment of the following requirements are necessary, which will form the basic conditions for innovative development, which is currently extremely weak.

First, it is an assessment of the real state of affairs with the implementation of innovations, determination of the actual results and their nature.

Secondly, the definition of the factors of growth of innovations in the areas that are relevant. Currently, this is mainly R&D.

Third, the search for sources and reserves of R&D growth, determination of forms of development of science and practice in these areas.

Fourth, this is a separate study of the state of human capital, the search and selection of directions for its development.

And finally, fifthly, the formation of guidelines for growth in the presence of a connection between theoretical, scientific works on the one hand, and practical, applied, on the other hand.

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Modern Tendencies In The Ethnic Relations Of Kuramas

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ABSTRACT

The article highlights the issues, such as Kurama ethnicity (or "ethnic group of Kuramas"), which is involved in the Uzbek nation, its ethnic composition, the identity sense of the Kuramas in terms of unity of the people, the attitude to the Uzbek national unity and transformational processes. Corresponding issues are presented as material for ongoing scientific analysis based on field materials and, where appropriate, scientific and popular literature data. The core meaning of the term "kurama" is explined by the fact that this ethnic group is of the polycomponent. To be specific, it is feasable to promote the idea that the genetic composition of Kuramas has a common root with Karluk, Kipchak and Oguz ethnicities, since the period of Turkish commonality. Subsequently, after the end of the Turkish commonality and the formation of independent Turkic fraternal nations, the ethnic union of the Uzbek, Turkmen, Kyrgyz and Kazakh peoples began in Central Asia. In particular, the main core of the Uzbek nation began with the Karluk branch, while the Uyghur ethnos grew in the same process with the Uzbek ethnic genesis, and the subsequent stages of development in the border areas were independent. However, the bond of historical ties between the two branches has not been ripped up.

The article also analyses the issues of genetic memory of Kuramin residents of different villages along the streams of mountain and rivers. Thus, a survey conducted among the residents of Lashkarak Sai shows that the older generation practically began to forget the tribal origins of not only individual families, but also the entire group of residents of the compact community of the village. As for the inhabitants of Ertashsay, which originates from the Karakush peak, dividing the Tianshan mountain ranges into Chatkal and Kurama, they partly associate themselves with the traditional 92 Uzbek tribes. However, this information of Ertashsay residents is contraindicated for data on the genetic mixing of the Kuramis, consisting of Uzbek-Kazakh-Kyrgyz components.

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Our observations on the formation of the names of certain groups of Kuramins are interesting. Thus, the inhabitants of a number of villages, who have retained the memory of family ties in the past, are now known by various nicknames given to them from other villages. For example, Ezma top (chatty), Kal topi (bald), Zhanghirok topi (bells), Pulat topi (steelworkers), Toq topi (fed), etc. In addition, some groups of Kuraminians got their names from their place of residence: Kuramin residents Kurboz, Badrangi, Chelenovul, Ajir ovul, Samguron ovul, Guldirama soy, Kara kishlak, Soyogzi, etc.

In general, in the ethno-cultural situation of the Kuramin people, there is a gradual tendency to smooth out the previously stable traditional forms of life, social relations and purely Kuramin rituals and customs, which merge with the general Uzbek ones, since the Kuramin people mostly identify themselves as Uzbeks.

KEYWORDS

Kurama, identity, Uzbeks, ethnic unity, ethnicity, ethnic component, transformation, Uzbekization, Ertosh, Lashkarak

INTRODUCTION

The Kurama mountain range and the Akhangaron river valley, Akhangaron-Piskent, Urta Chirchik, partly Buka and Akkurgan districts are the most densely populated areas of the Kurama ethnic group (the phrase "Kurama ethnicity" is also sometimes appropriate [1]), which is becoming more and more integrated into the Uzbek nation.

According to some sources, the formational history of the Kurama ethnic group has ancient roots. Nevertheless, some informants put forward the idea that the history of the participation of ethnic components in the formation of the Kuramas are closely associated with the formational period of the Kazakh Khanate and the invasion of the Dzungars and Kalmyks.

The core meaning of the term “kurama” is explined by the fact that this ethnic group is of the polycomponent. To be specific, it is feasable to promote the idea that the genetic composition of Kuramas has a common root with Karluk, Kipchak and Oguz ethnicities, since the period of Turkish commonality. Subsequently, after the end of the Turkish commonality and the formation of independent Turkic fraternal nations, the ethnic union of the Uzbek, Turkmen, Kyrgyz and Kazakh peoples began in Central Asia. In particular, the main core of the Uzbek nation began with the Karluk branch, while the Uyghur ethnos grew in the same process with the Uzbek ethnic genesis, and the subsequent stages of development in the border areas were independent. However, the bond of historical ties between the two branches hasnot been ripped up.

THE MAIN RESULTS AND FINDINGS

Baised opinions about the Kipchak dialect categories of the Uzbek nation in science today. It is said that the Kipchak dialect was added to the Uzbek people only in the 16th century. If this problem is considered on the basis of the proportions of excess or deficiency of the Mongol feature in the anthropological image, according to the anthropologist T.Q. Khodjaev's calculations, 10-20% of the peoples of Central Asia had

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Mongol elements in the 3rd and 2nd centuries BC. It is not a sudden occurrence that in these centuries, the quantitative aspects of the Mongol feature in the local context were increasing or maintaining a certain coefficient drag [2].

Materials of scientific literature and oral information on this issue confirm the participation of Kazakh and Kyrgyz components in the composition of Kuramas. There are a number of examples of this. For example, Anorboy Nodirov, a retired teacher, says that the father of the Nurboy ethnicity was Kazakh, but in the second and third generations, the first ethnogenetic link was forgotten and the psychology of Uzbekism came to the fore [3].

According to the considerations of the informant, Usmonali Mirzaliev in Ertosh village, Kuramas contain kazakh and kyrgyz components, but this genetic element has lost its status at an early stage [4].

The representatives of the Mirzabeks kinsman located along the Lashkarak gorge confirms that, the marital relations of the residents of this area have largely remained inside the local circle. However, over the last quarter of a century, this tradition has been gradually eroding, meaning that today's Lashkarak youth are increasingly marrying outside the region.

"Ashabo"-the tajik-speaking kinsman, who live in the upper reaches of the Lashkarak gorge, has never been involved in marriages with the Kuramas in the past, and even moved out overnight if one wanted to marry the kurama's daughters. However, in recent times, Ashabos also began to interfere with kuramas. This trend is particularly noticeable in the late twentieth and early twenty-first centuries, when border and trade relations between Tajikistan and Uzbekistan were relatively limited [5].

When the role of the kipchak dialect was significant in the ethnic composition of the kuramas, the tendency to pronounce the "J" sound in speech" was the leading one in the regional language situation. However, in recent years, in the context of the uzbek literary language, as well as in the context of school education, the active participation of the younger generation in social life, the tendency to pronounce the "J" sound in speech has been declining. However, it is felt that the tendency to pronounce the "J" sound in the speech of the older generation is preserved. The conclusion is that the linguistic situation of the Kurama ethnic group is increasingly shifting towards current literary language norms.

There are different opinions on the origin of the term "kurama". In particular, according to Anorboy Nodirov, kuramas were united by collecting them as an invitation to gather together when they were scattered everywhere. According to Abduqayum father in Ertosh, a population consisting of a genetic combination of different ethnic groups is called kurama "combined". In our opinion, this explanation is close to the truth [6].

Specific observations on the ethnic and social status of kuramas suggest that a clearly demarcated kinship system does not exist in practice. In this sense, the social concept of "kinsman", which is widely used among kuramas, is noteworthy. In particular, while some kinsmen start their pedigree from their fathers, some are explained by the nicknames used in relation to their team (kinsman). For example, Mirzabek kinsman in the Lashkarak village trace their family tree to Mirzabek Great Father and Utakul Dodkhoh, Korabek, Khudoynazar, Mirzarahim, Mirzakarim, Dodamat respectively. The Mirzabek kinsman in the Lashkarak village seem to have maintained a relatively endogamous relationship for a long time, turning the kinsman into a kinship system. Sometimes

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Mirzabek and Qurboz kinsmen take brides from abroad. The 92-years old Abdugaffor Kuziev's daughters-in-law are one from Karatash and the other from Karakhitay, and this is a sign of the couple's desire to have a genetic connection outside their own sphere. A similar exogamous attitude is observed in the family of Anorboy ota Nodirov. His youngest son, Alisher, was married to a girl named Umida from the village of Appartak. She is sart, by her father, and kurama by her mother.

Nodirov Anorboy's opinion also points to the first message about the kinsman, that nicknames played a role in their naming. For example, Ezma, Tokberdi, Pulat, Jangirak, Kal, Tentak and others [7].

Usmonali Mirzaliev from Ertosh said that the term sart was used as a nickname for one of the kinsmen, citing the fact that either the mother or the father of the family was a sart(the nomadic people used so-called term "Sart" for calling the native population, peasants and handicraftsmens of the city), that is, the settlers were shown to be uzbeks. There are also cases when some kinsman are named after the area where they live. For example, Abdukosim Akhmedov (1966) listed another series of kinsman associated with place names. These are Kurboz, Badrangi, Chelenovul, Ajir aul, Samguron aul, Guldirama soy, Kara kishlak, Soyogzi and others [8].

Another interesting piece of information came to light in a conversation with Ertosh people. They say that the kuramas came to Ertosh from Shahrukhiya, the confluence of the Ahangaron and Syrdarya rivers. The reason for their stay in Ertoshsay was that they called the place far from the village of Chinor as Borsa Kelmas. It was as if the five brothers had come to Ertosh and were sitting on the cap, but they could not return. This means that they went and did not return, and Ertoshsay got the name Borsa Kelmas. Here comes an idea. In other words, there seems to be some forgotten genetic link between the people of Chinar and Ertosh. However, the narrators did not point to this meaning.

CONCLUSION

Following the above comments, it is appropriate to make some comments on the ethnic list of the composition of the kurama population, which A. Khasanov, T. Mirzakulov, referring to Isomiddin Yormatov. The authors have correctly identified the general groups of the tribes, such as yapalok, samarchik, kochartop, boytop, kalmoq top, and mixed the names of common turkic tribes and clans such as jalair, uyshun, kerayit, argin, bolgali, pulot. On top of that, they added the concept of kuramas to the all-Turkic 92-line Uzbek lineage [9]. Such a view seems to ignore the existence of independent roots of the kurama ethnic group. On the one hand, the authors tried to overemphasize the position of the Kurama ethnic group. A similar attitude can be seen in the words of Usmonali Mirzaev in Ertosh. According to him, the Kuramas are associated with the Boysun kungirats and they are the main link of 92 Uzbek tribes. In this view, the position of the Kuramas is exaggerated. In fact, without discriminating against the Kurama ethnic group, it can be said that today this ethnic group is at the stage of intencivily assimilation into the titul uzbek nation.

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The Use Of Information And Communication Technologies In Mathematics Lessons

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ABSTRACT

The process of informatization, which has embraced all aspects of the life of modern society today, has several priority areas, which, of course, should include the informatization of education. It is the fundamental principle of the global rationalization of human intellectual activity through the use of information and communication technologies (hereinafter ICT).

The ultimate goals of informatization of education are to provide a qualitatively new model for training future members of the information society, for whom active mastery of knowledge, flexible changes in their functions in work, the ability for human communication, creative thinking and planetary consciousness will become a vital necessity. Such a profound influence on learning goals is based on the potential of the computer as a means of cognitive and research activities, a means of providing a personality-oriented approach to learning, contributing to the development of individual abilities of students in both the humanities and the exact sciences.

KEYWORDS

Education, communication, individualization and differentiation, mathematics lessons, information and communication technologies.

INTRODUCTION

Modern society is undergoing significant changes associated with the rethinking of a number of scientific, political and social provisions. This happens in all spheres of human life, affects all social institutions, including the education system. In our country, whole groups of the population change their value orientations due to the avalanche-like

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growth of information. The rapid development of telecommunications and information technologies, the formation of the world information space imposes new requirements on modern society and its most important institution - the education system.

One of the priority directions of informatization of society is the process of informatization of education, which involves the widespread use of information technologies of education.

The middle of the 90s of the last century to the present day, is characterized by the mass and availability of personal computers in Russia, the widespread use of telecommunications, which makes it possible to introduce the developed information technologies of education into the educational process, improving and modernizing it, improving the quality of knowledge, increasing the motivation for learning. making the most of the principle of individualization of training. Information technologies of teaching are a necessary tool at this stage of informatization of education.

Information technologies not only facilitate access to information and open up opportunities for variability of educational activities, their individualization and differentiation, but also allow to organize the interaction of all subjects of learning in a new way, to build an educational system in which the student would be an active and equal participant in educational activities.

The formation of new information technologies within the framework of subject lessons stimulates the need to create new software and methodological complexes aimed at a qualitative increase in the effectiveness of the lesson. Therefore, for the successful and purposeful use of information technology tools in the educational process, teachers must know the general description of the principles of functioning and the didactic capabilities of software applications, and then, based on their experience and recommendations, "embed" them into the educational process.

The study of mathematics is currently associated with a number of features, if not difficulties in the development of school education in our country. As noted in a number of articles, we even have to speak of a crisis in mathematics education. The reasons for it are as follows:

- In changing priorities in society and in science - at present, against the background of a sharp decline in interest in science as a whole, there is an increase in the priority of the humanities;
- In reducing the number of mathematics lessons at school;
- The isolation of the content of mathematics education from life (especially in mass schools);
- In small impact on the feelings and emotions of students.

I will allow myself to quote the statements of scientists from different times without detailed comments.

The purpose of knowledge is not memorizing a huge factual material in the smallest detail, but the ability to easily and quickly navigate this area. (A.N. Terenin)

It is not so important what is taught in school, but it is important how it is taught ... The

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function of a school is not to provide special experience, but to develop consistent methodological thinking. (M. Planck)

If a student does not experience the joy of searching and discoveries, does not feel the living process of the formation of ideas, then he rarely manages to achieve a clear understanding of all the circumstances that made it possible to choose this, and not some other path. (A. Einstein)

Gathering together the main provisions noted in these remarkably deep and modern in meaning statements, we can highlight the most important thing:

- The role of mathematics as an academic subject is extremely great in terms of shaping the world outlook and creative thinking of students not only in the field of natural science, but also in the most general sense;
- Knowledge, the solid foundations of which are formed when studying mathematics at school, should be as close as possible to real life and everyday practice:
- The study of mathematics should be carried out in such a way that students see science in constant historical development and, wanting to study it, feel satisfaction and joy from the process of learning.

The changes taking place today in modern society largely determine the characteristics and the need for changes in the activities of the teacher. In modern conditions, in educational activities, it is important to focus on the development of the cognitive independence of students, the formation of research skills, the individualization of the goals of education. It is impossible to solve this problem with the old methods. Years of teaching allowed me to see the contradictions in mass practice:

- Between the individual's desire for creativity, originality, self-expression and the obligatory unified plan and regime of a general education school;
- Between the reproductive, scholastic perception of mathematical material by individual students and the need for creative transformation of their mathematical activity;
- Between the increasing complexity and richness of the school curriculum, the constantly increasing level of requirements and the student's ability to master the entire volume of information offered to him.

These contradictions prompted me to work aimed at improving the quality of students' knowledge, developing their creative abilities through new information technologies.

METHOD

Today the question remains: "How can we most effectively use the potential of modern information and communication technologies in teaching schoolchildren, including teaching mathematics?" Therefore, the methodological problem that I have been working on lately is “The use of information and communication technologies in mathematics lessons as a means of increasing motivation for learning”.

The task of the school is not only to communicate a certain amount of knowledge to students, but also to develop their cognitive interests, creative attitude to work, striving for independent “acquisition” and enrichment of

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knowledge and skills, and their application in their practical activities. The main work of our children is teaching, and therefore it is very important to teach them how to learn intelligently. It is generally recognized that mathematics is the most laborious academic subject that requires constant, painstaking and significant independent work from students, moreover, very specific and diverse. Therefore, one of the main tasks of a mathematics teacher is the formation and development of skills in studying mathematics, elements of the culture of learning and thinking. To do this, it is necessary to work out in detail the content aspect of training and select from the whole variety of methods, forms, technologies such that will lead students to master the conceptual components of the training program, will develop the cognitive abilities of students, their activity in educational activities, and will also ensure the formation and development of communicative competencies students. The increase in mental load in mathematics lessons makes you think about how to maintain students' interest in the subject under study, their activity throughout the lesson. In order to maintain interest in the subject and make the educational process of high quality, I actively use information technologies in my lessons. Active work with a computer forms in students a higher level of self-educational skills and abilities - analysis and structuring of the information received. At the same time, it should be noted that new teaching aids make it possible to organically combine information and communication, personality-oriented technologies with methods of creative and search activity. Today, the introduction of computer technology into the educational process is an integral part of school education. It is generally recognized that the use of computer technologies in education is inevitable, since the effectiveness of training and the quality of the knowledge and skills that are being formed are significantly increased.

Goals and objectives of using ICT

The purposes of using a computer in mathematics lessons are as follows: development of interdisciplinary connections between mathematics and computer science; the formation of computer literacy; development of students' independent work in the classroom; implementation of an individual, personality-oriented approach.

My tasks as a math teacher are as follows:

- Provide fundamental mathematical training for children;
- To form informational and methodological culture, creative style of students' activity;
- Prepare students to use information technology and other information structures.

The use of ICT in mathematics lessons enables the teacher to reduce the time spent on studying the material due to the clarity and speed of the work, to check the knowledge of students in an interactive mode, which increases the effectiveness of learning, helps to realize the full potential of the individual - cognitive, moral, creative, communicative and aesthetic , contributes to the development of intelligence, information culture of students.

The use of ICT in the educational process involves improving the quality of education, that is, solving one of the pressing problems for modern society.

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The process of organizing education for schoolchildren using ICT allows:

- To make this process interesting, on the one hand, due to the novelty and unusualness of this form of work for students, and on the other hand, to make it exciting and bright, diverse in form by using the multimedia capabilities of modern computers;
- Effectively solve the problem of visualization of teaching, expand the possibilities of visualization of educational material, making it more understandable and accessible for students to freely search for the educational material necessary for schoolchildren in remote databases through the use of telecommunications, which will further contribute to the formation of students' need for search actions;
- Individualize the learning process due to the presence of multi-level tasks, due to immersion and assimilation of educational material at an individual pace, independently, using convenient ways of perceiving information, which causes positive emotions in students and forms positive learning motives;
- To liberate students when answering questions, because the computer allows you to record the results (including without scoring), correctly responds to errors; independently analyze and correct mistakes made, correct their activities due to the presence of feedback, as a result of which self-control skills are improved;
- Carry out independent educational and research activities (modeling, project method, development of presentations, publications, etc.), thereby developing creative activity among schoolchildren.

The modern information society sets before all types of educational institutions, and above all before the school, the task of preparing graduates who are capable of:

- Flexibly adapt to changing life situations,
- Independently think critically;
- Competently work with information;
- Be sociable, contact in various social groups; work independently on the development of their own morality, intellect, cultural level.

The use of information technologies in teaching is based on data from human physiology: 1/4 of the material heard, 1/3 of what is seen, 1/2 of what is seen and heard, 3/4 of the material, if the student actively participates in the process, remains in the memory of a person.

In order to intensify learning, along with the classical forms of teaching at school and in the independent work of students, which were previously used in teaching mathematics, the software of educational disciplines is increasingly used: textbook programs, training programs, dictionaries, reference books, encyclopedias, video lessons, libraries of electronic visual aids, thematic computer games.

The capabilities of a computer, when using additional technologies adapted to it: software products, the Internet, network and demonstration equipment, constitute the material base of information and communication technologies.

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Information technology, in my opinion, can be used at various stages of a mathematics lesson:

- Self-study with the absence or denial of the teacher's activities;
- Self-study with the help of a teacher-consultant;
- Partial replacement (fragmentary, selective use of additional material);
- The use of training (training) programs;
- Use of diagnostic and control materials;
- Completing home independent and creative tasks;
- Use of a computer for calculations, graphing;
- Using programs that simulate experiments and laboratory work;
- Use of game and entertaining programs;
- Use of information and reference programs.

Since the visual-figurative components of thinking play an extremely important role in a person's life, their use in the study of material using ICT increases the effectiveness of learning:

- Graphics and animation help students understand complex logical mathematical constructions;
- The opportunities provided to students to manipulate (explore) various objects on the display screen, change their speed of movement, size, color, etc., allow children to assimilate educational material with the fullest use of the sense organ and communication links of the brain.

The computer can be used at all stages of the learning process: when explaining new material, consolidating, repeating, monitoring, while for the student it performs various functions: a teacher, a working tool, a learning object, a collaborating team.

The computer allows you to enhance the motivation of learning through an active dialogue between the student and the computer, the variety and colorfulness of information (text + sound + video + color), by orienting the teaching towards success (it allows you to complete the solution of any problem, relying on the necessary help), using the game background of human communication with machine and, which is important, endurance, calmness and "friendliness" of the machine in relation to the student.

In addition to the above, it is of great importance that in the process of work of a student and a teacher using computer technology, the student, firstly, gradually enters the real world of adults, the production activity of a modern person.

Secondly, the widespread introduction of ICT into the life of a modern person poses a dilemma for teachers: either you keep up with the times, teach children in a modern way, using modern teaching technologies, or you lag behind and leave the profession.

When choosing the conditions for using ICT, I take into account:

- Availability of programs corresponding to the studied topic;
- The number of computerized workplaces;
- The readiness of students to work using a computer;
- The student's ability to use computer technology outside the classroom.

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Remembering the words of K. F. Gauss that "mathematics is a science for the eyes, not for the ears", I believe that mathematics is one of those subjects in which the use of ICT can intensify all types of educational activities: learning new material, preparation and verification of homework, independent work, test and control work, extracurricular work, creative work. Through the use of ICT, many methodological goals can be realized more effectively.

Information technology, according to G.K. Selevko can be implemented in three versions:

- As "penetrating" (using a computer in the study of certain topics, sections, for solving certain didactic problems);
- As the main one (the most significant in the used pedagogical technology);
- As a mono-technology (when all training and management of the educational process, including all types of diagnostics, control and monitoring, rely on the use of a computer).

Of course, the ideal option that every teacher strives for is monotechnical education, i.e. independent educational work of the child in an interactive learning environment using ready-made e-learning courses. The use of information technology must be considered in the indissoluble unity of all components of the educational process:

- Creation of lessons using IT;
- Creative project work of students;
- Distance learning, competitions;
- Library, Internet resources;
- Elective courses;
- Social and psychological monitoring of the formation of the student's personality;
- Creative interaction with teachers.

In the process of teaching mathematics, information technology can be used in various forms. The directions that I use can be represented in the form of the following main blocks:

- Multimedia scripts of lessons;
- Testing knowledge in the classroom;
- Extracurricular activities

Multimedia Lesson Scripts One of the benefits of using ICTs is the dramatic increase in time spent on independent work. Such a learning process allows you to develop thinking, to activate thought processes. Work will be creative if students' own intentions are manifested in it, new tasks are posed and independently solved with the help of newly acquired knowledge.

Using multimedia in lessons implements the following principles:

The principle of visibility. Allows you to use illustrative material, audio material, resources of rare illustrations in any lesson. The clarity of the material increases its assimilation by students, because all channels of students' perception are involved - visual, mechanical, auditory and emotional.

The principle of conformity to nature. The use of materials on the Internet is of interest to high school students. The use of multimedia presentations is advisable at any stage of the study of the topic and at any stage of the lesson. The presentation of educational

material in the form of a multimedia presentation reduces the learning time, frees up the resources of children's health.

The principle of strength. The use of presentation lessons technically allows you to repeatedly return to the studied or studied material. The use of training programs allows you to recall the material of previous lessons in one lesson.

Scientific principle: the transformation of this principle in multimedia learning gets a more fundamental basis.

The principle of accessibility: this technology is integrated with the technology of differentiated teaching and allows you to simultaneously display multilevel tasks, control and test tasks, tasks of increased complexity on a monitor or screen.

The principle of consistency: the use of presentation lessons allows you to develop a system of lessons on one topic, as well as displaying the elements of previous lessons, to explain new things.

The principle of consistency: as in traditional lessons, the teaching material is memorized in greater volume and more firmly.

I practice conducting such lessons both when presenting new material and when repeating what has been passed.

Among the most basic advantages of the formation of material on an electronic medium, in my opinion, the opinion is the heterogeneity of the educational material (text, illustrations, animation), interactivity, instant search. All this information wealth, which opens up great prospects for a teacher, is, of course, impossible on paper. An electronic textbook has a number of undoubtedly positive properties that distinguish it favorably from traditional textbooks - the text of the textbook is accompanied by a large number of slides and video fragments that enhance the emotional and personal perception of the studied material by students; the use of such a textbook allows you to do much more in the lesson than using traditional means, to increase interest in the subject of mathematics. In my lessons I use disks of educational and methodological support in mathematics. However, not all discs available in the school media library, educational programs do not always correspond to the studied material, do not take into account the characteristics of the class, the content of the program. Therefore, I do not use them in full, but specific topics or tasks.

By their functional purpose, computer programs can be conditionally divided into four main types:

- Informational and illustrative (replaces conventional visual aids and traditional audio-visual teaching aids);
- Developmental programs (focused on the development of memory, attention, logic, spatial thinking of students);
- Training programs (imply the research work of students at the computer or training programs for obtaining certain skills);
- Control programs (most often programs for testing the level of learning of students. Such programs involve an individual survey of each student).

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CONCLUSION

A lesson is a social order of society in the education system, which is determined by the socio-psychological needs of society, the level of its development, moral and moral values of this society. Unfortunately, the process of modernization in the education system is difficult. This is due to the fact that teachers aim their students only at obtaining solid theoretical knowledge, some of which, in my opinion, will not receive practical application in future life.

It is no secret that the established practice of teaching mathematics is characterized by the traditional study of mathematical formulas, the abstractness of mathematical concepts, which are usually memorized mechanically.

In my opinion, in mathematics lessons, the stated problem can to some extent be solved by using computer technologies, which, firstly, are based on a strict algorithm of student actions. After all, not every student, having learned the rules, can use them. The use of algorithms, charts, tables, that is, orienting charts, streamlines the learning process.

Secondly, in connection with the acute problem of saving time in the course of the educational process, the modern school is also faced with the task of finding the means and teaching methods that will maximize the saving of time in the lesson. In my opinion, the use of a computer in the classroom is one of such means.

Thirdly, I believe that teaching using information and communication technologies is also level differentiation, because under the conditions of this technology, the student has the right to choose the content of his education, the level of assimilation. At the same time, the teacher's activity should provide an opportunity for each student to master knowledge at a mandatory or higher level (at the student's choice).

In accordance with the goals set, ICT should help the student to acquire better knowledge, which is necessary for the successful passing of the Unified State Exam.

In addition, the following can be distinguished as the expected results of the project:

- Formation of key competencies of students in the learning process and in extracurricular activities;
- Increasing the motivation for learning of students;
- Mastering computer literacy by students, increasing the level of computer literacy among teachers;
- Organization of independent and research activities of students;
- Creation of our own bank of educational and teaching materials, ready for use in the educational process.
- Development of spatial thinking, cognitive abilities of students;
- Aesthetic appeal of the lessons.

The experience I have accumulated, partially reflected in this work, shows that the use of information technologies in the classroom and in extracurricular activities expands the creative possibilities of both the teacher and students, increases interest in the subject, stimulates the development of quite serious topics in computer science by students, which, as a result, leads to an intensification of the learning process.

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From the above, it follows that knowledge is assimilated by a student through his own activity, organized and controlled so that the student has before him real guidelines that allow him to perform all actions correctly and at the same time control himself.

The last decade of the outgoing century has put the school in a situation of the need to introduce significant changes in the system of education and upbringing of students. These changes should be ensured by the school reform, which is dictated by the modernization of education, computerization of schools. I think that the use of information and communication technologies in mathematics lessons to some extent contribute to solving this problem.

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Variety Of Forms And Genres In Modern Poetry

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ABSTRACT

This article gives information on variety of forms and genres in modern poetry. In world literature, poetic genres form a unique artistic system. In particular, genres such as room, sonnet, ballad, rondo, triolet, hokku, elegy have signs of centuries-old development. Therefore, the characteristics of these genres are intertwined, interacting and living. These genres, which are traditional in world poetry, have their own laws and certain definitions. We discuss those issues in our research.

KEYWORDS

Poetry, literature, poetic genres, sonnet, ballad, rondoA

INTRODUCTION

In world literature, poetic genres form a unique artistic system. In particular, genres such as room, sonnet, ballad, rondo, triolet, hokku, elegy have signs of centuries-old development. Therefore, the characteristics of these genres are intertwined, interacting and living. These genres, which are traditional in world poetry, have their own laws and certain definitions. Hokku, tanka in Japanese poetry, terset and inverted in Italian poetry, or oda, sonnet, ballad, elegy, etc. are the predominant genres in world literature, while rondo and triolet are specific poetic genres in French literature. Consequently, the genre of oda, as an ancient genre in world poetry, laid the foundation for the emergence of genres of this content in the literature of different peoples. In particular, the room formed and perfected in French poetry occupies a typological line with the genre of qasida in Uzbek poetry.

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THE MAIN RESULTS AND FINDINGS

In particular, the literary critic D. Kuronov writes about hokku: "HOKKU, haiku (Japanese" first lines ") is a traditional rigid poetic form of Japanese poetry, a lyrical genre. X. consists of three lines, the first and third lines are five-syllable, and the second line is seven-syllable, and in this respect it is the same as the first three lines of the tank (see). lib, the "first verses" that reflected the main idea of the poem, were decided as a rigid form of poetry called X.. The founder of the genre is the seventeenth-century Japanese poet M. Basyo, who, in addition to creating beautiful examples of the genre, developed the formal and semantic requirements, aesthetic principles for it "6. It seems that in world literature, hokku has a number of features as a genre of poetry. That is, the peculiarity of this genre, which has three stanzas, is that the size of the joints is five in the first and third stanzas, and seven in the second stanza. This is a strict measure.

Oda - (gr. Oide - from the word song) is a lyrical genre of Western and Russian poetry, one of the genres similar to the poem in Eastern poetry: a solemn poem dedicated to someone's honor or an important event . In ancient Greek literature, rooms were recited by the choir accompanied by music and games, and by their nature were divided into rooms of praise, mourning, and games. In ancient Roman literature, Horace separated the island from music and shaped it as a literary genre. Oda later re-emerged in France in the 16th century and became widespread in Western European poetry. Oda has reached the stage of maturity in the work of F. Malerb and other representatives of French classicism. The theoretical foundations of the room were developed by Bualo. According to this theory, rooms should be written in a high, attractive language, free of dialect elements, and each verse should convey a concise idea, that is, the word should not move from one verse to another, and hungry rhymes should not be used.

In Russia, oda originated in the XVI-XVII centuries, the term oda was first used by VK Trediakovsky, and later became one of the main and leading genres in the work of MV Lomonosov. While MV Lomonosov created rooms rich in patriotic and philosophical content, GR Derzhavin, a famous odanav of his time, added humor and revealing features to the room.

In the Russian rooms, the speech is rich in eloquence, eloquent style, the use of urges and rhetorical repetitions, the weight of a strict four-stop yamb, the band structure of ten verses rhyming in the form of ababvvgddg. calculated. A.N. Radishchev and A.S. Pushkin tried to direct the genre against the current system through their so-called "Freedom" rooms, but this feature was not consistent with the nature of the room genre. By the 1920s, however, the room had completely stopped developing.

In some cases, the term room is translated as a poem. In fact, these two terms refer to different events, so they should not be confused. Although the genre of oda is close to the genre of qasida in the East by its nature, such as solemnity and praise, they are completely different genres in terms of structure, rhyming order and other features.

The rooms of poets such as Jean-Baptiste Russo and Victor Hugo are famous in French

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literature. In world poetry, there are the following genres of oda:

1. Religious themes: divine rooms, hymn rooms and religious hymns;
2. Rooms of war or heroism;
3. Philosophical rooms of exemplary content;
4. Cheerful rooms.

Ancestors have described the island as a chorus in their tragedies. They divided the room into three parts that harmonized the song and regulated them: busy, busy, and epic (same lyrical poem in ancient poetics). The Ronsar School tried to bring its rhythmic and choreographic units back to the room. As Vauquelin put it in his "Poetic Art":"Before Ronsar, there were different types of rooms (a song sung on the way out and back)" 7. The genre of Oda was later included in the famous French writer Victor Hugo's Odes et Ballades. By the beginning of the twentieth century, the room genre under Claudel's pen had reappeared in his Cinq Grandes Odes (5 large rooms).

The troubadours reworked some of the elements of folk songs, using a variety of poetic forms and weights. They are mainly: cansona, sirventa, alba, serenade, pastorella, tensona, ballada. Among them, ballad is one of the most widely used genres in Western literature.

Ballada - ("dance song" from the French word "ballade") is a genre of lyro-epic poetry, a song or poem that tells a story with the development of a dramatic plot. The word "ballade" is derived from the word "ballata" in the south of France. In the Middle Ages, "dancer" was derived from the word "baller", which means "to dance". The plot of the ballad is characterized by a special melody, music. In the ballad there are imaginary, mysterious, incomprehensible, even unspoken situations. The origin of the ballad combines the features of the story and the song with the traditions associated with folk legends. The ballad is the main poetry of the genres of sentimentalism and romanticism. The ballad shows that the ancient meaning, medieval poetry, has a clear appearance, consisting of 3 verses, and the first half of the verse is repeated, each verse ending with a repeated poem, the origin of the song The story in the poem is preserved in sharply busy ballads. The number of stanzas is equal to the number of stanzas in each row. It consists of 8 or 10 lines and is written on different topics.

The Pléiade added an outdated ballad genre to the new look of the sonnets and rooms. In the late 18th century, the ballad emerged as a weapon in the illumination of English and German traditions that served to put an end to the ballads of Romanticism. From the outside in the field of literature, the word ballad has become the epitome of modern song, and gradually, in a pleasant general sense, it was the end of the twentieth century. Due to the fact that certain features of the ballad were incorporated into other genres, such works were called by common names (for example, ballads-poems, ballads-symphonies, etc.).

François Villon signs the balloon ses ballades en mettant un acrostiche dans l'envoi. C'est le cas de la Ballade de la Grosse Margot, de la Ballade de bon conseil, de la Ballade des contre vérités, du Débat du cœur et du corps de Villon. Ou de la Ballade pour prier Notre Dame, tirée du Grand Testament: Vous portâtes, digne Vierge, princesse, Iésus régnant qui n'a ni fin ni cesse.

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Le Tout-Puissant, prenant notre faiblesse, Laissa les cieux et nous vint secourir,

Offrit à mort sa très chère jeunesse;

Notre Seigneur tel est, tel le confesse:

En cette foi je veux vivre et mourir.

Certains commentators who are interested in the acrobatics of one of the most popular ballads in the jargon of the Stockholm manuscript for attributes of the paternal cellar of Villon, the fact that you do not need to try the argument.

François Viyyoon used the acrotic genre in his ballads. For example, in the ballad "Gross Margo", "The ballad about good advice", "The ballad about the arguments of the body and heart of Viyon" you can find this genre:

Meaning: You, queen, virgin, have ascended to greatness in chastity and purity (just like the Virgin Mary).

There was no stopping and no ending in Jesus (that is, during his reign).

O Almighty, You know our sins and our shortcomings

Give the heavens a chance and enslave us,

O Allah, I repent again and again, grant me a beautiful death

Only then do I want to live and die. (translated by our J.M.)

Apparently, oda and balla are lyrical genres perfected in French poetry. The predominance of the spirit of praise in the room, and the fact that the ballad is written in verse and based on event, are the hallmarks. It is clear from the above considerations that these genres were first and foremost leading in world poetry and also in French literature.

1.2. Characteristics of sonnet and elegy genres.

Sonnet - (Italian "sonetto" - "sound") is a common lyrical genre in world poetry, which first appeared in Italian literature in the XIII century. The sonnet is based on strict rules. It consists of 4 verses, the first and second verses consist of 4 verses (quatrain), the third and fourth verses consist of 3 verses (terset). It consists of a total of 14 verses, often rhyming in the form a-b-b-a, a-b-b-a, d-d-e, e-f-e (there are other variants). It first appeared in Italian literature in the 13th century. Sonnet Dante and Petrarch played an important role in the formation of the sonnet as an independent type of poetry. In British literature, Shakespeare contributed greatly to the development of the sonnet. This type of poetic form has been widely used, especially by symbolist poets. Becher's contribution to the enrichment of the theory of sonnets is great. He called the sonnet one of the brightest dialectical forms of art. He called the first four verses of the sonnet quatrain as a thesis, the second four quatrains as antitheses, and the synthesis of the last two trinities.

The rhymes in the sonnet should be complete and resonant. The sonnet must meet such requirements not only in form but also in content. For example, the first paragraph states the main idea, the second paragraph develops the idea, the third paragraph describes the solution, and the fourth paragraph describes the conclusion.

Many people have a general idea about the sonnet. Not everyone knows that a sonnet is not just a 14-line poem, but a complex and

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extremely masterful form of poetry. In French literature, beautiful examples of classical sonnets can be found in the works of Pierre de Ronsard. The movement of the sonnet from Italy to France has a historical development. In French literature, many poets have written in this genre, including Pierre de Ronsard, Clément Marot, Charles Baudelaire, Stéphane Mallarmé, and Paul Verlaine.

Charles Baudelaire is a poet, critic, essayist, and translator, founder of aesthetics and symbolism that influenced the development of French classical poetry. He excelled in the sonnet genre:

A passer-by

La rue assourdissante autour de moi hurlait.

Longue, mince, en grand oeuil, douleur majestueuse,

Une femme passa, d'une main fastueuse

Soulevant, balançant le feston et l'ourlet;

Agile et noble, ave sa sa jambe de statue.

Moi, je buvais, crispé comme un extravagant,

Dans son oeil, ciel livide où germe l'ouragan,

La douceur which fascin et le plaisir which tue.

Un cclair… puis la nuit! - Fugitive beauté

Dont le regard m'a fait soudainement renaître,

Ne te verrai-je plus que dans l'éternité?

Ailleurs, bien loin d'ici! trop tard! jamais peut-être!

Car j'ignore où tu fuis, tu ne sais où je vais,

O toi que j'eusse aimée, ô toi qui le savais!

To the transient woman

I met a woman, in surans.

The sign of mourning is on the calm, moonlit face

Delicate in the eyes of dignity

The street was flooded.

Feelings rose, the body fell silent.

Whispers on the lips are a sad expression,

Dreams hit me hard, at the bottom.

I'd like a bottle of poison.

It burned for a moment ... a curtain of darkness.

The living pupil crushed my heart.

Will you meet again, that love figure,

What if I travel the worlds in Vasling's hopes?

The brutal abstract blow of fate,

I wish I could feel it.

This sonnet by Charles Baudelaire is written on the theme of love. In fact, it is traditional in world literature. In the flood of the street, the lyrical hero meets a woman in love and awakens love for her. "Living Pupil" represents the beloved woman. The disappearance of the "veil of darkness" signifies the pain in the heart of a lover. The lover does not want to turn away from the path of "love". Hence, the sonnet reflects the feelings of love in the agony of love from beginning to end. The form consists of 14 rows. The first 8 lines consist of a quatrain, the last 6 lines of a reverse triple band.

Auguste Mangeot published in Le Monde musical the sonnet suivant qu'il trouvait admirable bien qu'adressé par un correspondant anonyme:

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Musically, you put me in a palais enchanté

Auul duquel menaient d'insignes avenues

Nuit et jour, des vitraux aux flammes continues,

Glissait une adorable et vibrante clarté.

Et des chœurs alternant, - dames de volupté,

Oréades, ondins, faunes, prêtresses nues,

–Toute la joie ardente essorait vers les nues,

And all the langueur and all the beauté.

Sur un seul vœu de moi, désir chaste ou lyrique,

Ta fertile magie a toujours, ô music:

Bercé mon tendre songe ou mon brillant désir.

Et quand viendra l'instant ténébreux et suprême,

Tu sauras me donner le bonheur de mourir,

En refermant les bras sur le Rêve que j'aime!

Mal lui en prit car le poème contenait un acrostiche contre lui («Mangeot est bête»). Son auteur n'était autre que Willy avec lequel il s'était violemment querellé.

Auguste Mangeot's sonnets have been published in Le Monde musicale. The content of this sonnet is as follows:

Kuy, navo - you made me like a charming, magical palace on the threshold of famous alleys.

You trembled softly and reverently night and day in the ever-burning scenes. Alternate choirs, delighted ladies

Oaths, fawns (god of fertility in Greek mythology), coxswains

All the excitement that flies in the sky

And all the fatigue and all the beauty.

My solitary, pure poetic wish

Ox, navo, your always rich, magical tune

It shook my delicate, tender thoughts, my shining desires.

When darkness, darkness, and the last chance arrive

On my favorite fantasies,

It can be said that the beautiful examples of the classical sonnet were further developed in the works of such famous poets of world literature as Boccaccio, Dante, Becher, Petrarch, Bryusov, Ronsar, Clement Maro, Baudelaire.

A bouquet of sonnets is a work of poetry consisting of fifteen sonnets and 210 verses. The bouquet of sonnets has such a complex structure that the first stanza of each sonnet begins with the last stanza of the previous sonnet, the last sonnet is called the trunk. The main sonnet consists of the first verses of fourteen sonnets. In the same way, the sonnets are firmly connected. Because bouquets of sonnets are one of the most complex poetic forms, many poets have not had the privilege of creating such a work. Many poets who aspire to create a bouquet of sonnets are obsessed with dry form, unable to express a deep meaning. The bouquet of sonnets was first created in European literature in the XIII century. Only Russian poets V.Bryusov (1873-1924), Vyacheslav Ivanov (1866-1949), M.Voloshin (1878-1932), I.Selvinsky (1899-1968) achieved this honor.

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Beckern's "Victims of Germany's Second World War" is a beautiful example of a bouquet of sonnets. For the first time in Uzbek poetry, Barot Boykobilov was able to create a bouquet of sonnets about Uzbekistan.

Usmon Nasir's sonnets in Uzbek poetry were a continuation of the tradition in world literature. It should be noted that Rauf Parfi's research in the genre has become a phenomenal phenomenon in twentieth-century Uzbek poetry. The poet was able to master the achievements of world poetry and create great examples of sonnets. We will try to base our comments on the example of the series of sonnets "Ona Turkiston", which created a lyrical image of the poet Abdullah Qadiri. This series was written in 1967 at a time when it was difficult to tell the truth about A. Kadyri. The fiery lines that unite the three sonnets sound like Abdullah Qadiri's monologue. At the same time, it captures the pains hidden in the depths of the poet's heart.

The first sonnet begins as follows:

History in the depths of my memory,

It's a good story to tell.

I'll be a stranger like a captive bird,

Clouds cast shadows in my soul8.

The events of the distant and recent past of our people, according to the poet, are a noble story. At the same time, it is not difficult for the clever reader to feel the reference to the great writer's historical novel "Last Days". The lyrical protagonist compares himself to a "captive bird." Indeed, the captive bird is Abdullah Qadiri, who was oppressed in a repressive environment.

In this way, the poet begins to think about the "candle flickering in the distance, the ominous wound of ancient sorrow." This expression has metaphorical content. The reason is that the "flickering candle in the distance" is an expression of Qadiri's dreams, and the "ominous wound of ancient sorrow" reflects the period of repression.

It's as if my hands are being handcuffed.

My body begins to mix with the soil,

This is the heart of the world (255).

The truth about the great writers and poets who were persecuted during the years of independence began to be told. Otakhan literary critic U.Normatov's article "The Last Prayer of Qodiri" is significant in that it covers the details of the writer's death. In this case, the scientist relies on the memoirs of A. Kadyri's son Masud aka. According to the memoirs, the writer's friend Mirolim Mirkomilov, a gardener, witnessed the tragic death. He had a garden by the Bozsuv River. On the night of October 4, 1937, when A. Kadyri was shot, he was in the same place and heard a familiar sound during the night riots in the ravine behind the garden. It was Qadiri's voice. Mirolim listens to the conversation between the father Tatar commander and A. Kadyri. Before his death, the great writer, knowing that the commander was a Tatar, asked for water and asked him to pray two rak'ahs. The commander agreed and was sentenced9 (2, 232). The above lines also contain references to this historical fact. Consequently, the image of A. Qodiri, whose hands were handcuffed and whose body was buried in the ground, reflects the bitter truth that the poet understood.

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In addition, the cry "He is in my heart, but he did not fit, why my country" reflects the image of a true patriot.

The second sonnet is also a logical continuation of the above lines. The great pain that A. Kadyri ate was his desire to liberate the country:

See history. I have a curtain,

I miss this place, this Motherland ...

I'd like a steel dagger ...

I was forbidden to shoot at the battlefield (1, 255).

CONCLUSION

After all, the realities of recent history, the various massacres that took place, reflected the glorious struggles of the true sons of the people like A. Kadyri for freedom, the tragic fate. Indeed, the writer is ready to hold a steel dagger in his hand to defend the Motherland. In this case, the "sharp stone" also represents A. Kadyri.

The third sonnet has a concluding content:

Life is short-lived,

Take the gold leaves and go.

Your eternity gives comfort,

An early break in my life (256).

Human life is like a rushing river. The golden leaf is the poet's unique metaphor. It has a hint of the fall of life. The eternity and beauty of the homeland comforts the writer, whose life is "cut short".

Oh, Mother Turkistan, I sing, burning,

You gave me the courage of the world.

I now understood the Turkish world

Here I am, ready to die (256)

It reflects the image of a writer who had great courage in his heart for Mother Turkestan and stood up to death. The homeland is such a high feeling that it is not enough to sing it with the tongue. That's why the writer wants to "burn it".

In the sonnets we have analyzed above, the scenes of Abdullah Qadiri's burning heart for the country are artistically expressed. At the same time, the endless pains and pains in the heart of the great writer shook the heart of the poet R. Parfi, stirred his emotions. It should be noted that each metaphor and symbol used by R. Parfi served to vividly express the lyrical image of A. Qadiri.

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Stockpiling And Chips Nature Of Substance Treated Potatoes Under Standard Condition

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ABSTRACT

The medicines were duplicated threefold. Evidently sound tubers > 60 gram weight after various substance medicines were put away in bamboo racks and wooden plate, separately at Kumaltar and Daman for 120 days. Perceptions were recorded on weight reduction rate , growing rate, numbers and weight of fledglings and quality boundaries for chips. Twofold fumigation with CIPC was viable for restraint of growing and decrease of postharvest misfortune as long as 120 days in both the areas. Then again the better shade of the chips was created by multiple times hydrogen peroxide treated potatoes.

KEYWORDS

Potato stockpiling, growing, Post-reap treatment, hydrogen peroxide, calcium chloride, chips handling

INTRODUCTION

The high temperature and lack of time for preparing ranchers urge to deal their item at least following reaping. The semi short-lived and massive nature of potato tubers are exposed to nonstop weight reduction and growing during stockpiling. For putting away potatoes, cold store is ideal for holding significant stretch.

Indigenous techniques for potato stockpiling (spreading tubers under floor, putting away in canisters and hanging in bamboo containers and so on) are most savvy and acknowledged

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by Nepalese ranchers for transient stockpiling to get better cost. Be that as it may, growing and weight reduction are serious issues in these techniques because of higher temperature. Growing causes incredible weight reduction and diminishes tuber quality. Weight misfortunes because of growing and decaying have been assessed from 10-40 % under on-ranch stockpiling condition in India.

To defeat growing and higher weight reduction countless synthetic compounds, for example, ethylene, nonanol, chlorprophan, maleic hydrazide (MH), carvone,abscisic corrosive, indole acidic corrosive, clove oil, mint oils, hydrogen peroxide maleic hydrazide, (MH) have been tried and utilized in numerous nations since quite a while past. Among them the utilization of CIPC hold business significant in world for sprout concealment and better quality support. Kleinkopf et al. Single treatment with CIPC @ 40 - 60 ml t-1 of potato was successful for stifled fledgling development and decreased stockpiling misfortune as long as 90 days under pile (18-32 ° C and 52-88 % R.H) and pit stockpiling (19-27 ° C and 69-92 % R.H.) Nonetheless, its viability on field pressure potato, fluctuating temperature and stickiness away may cause disappointment of fledgling hindrance. Numerous basic oils (Spearmint oil, Peppermint oil, Mint oil, Clove oil and so on) separated from plant materials indicated great option in contrast to CIPC for sprouts concealment. These oils have been ensured and are being utilized for natural potato creation. Frazier and Kleinkopf additionally detailed that hydrogen peroxide and its subsidiaries were discovered climate amicable and are permitted by the government natural norms. These elective mixes are false "sprout inhibitors" but rather harm the creating sprouts and smother sprout prolongation.

MATERIALS AND STRATEGIES

1. Fumigation with CIPC @ 40 ml ton-1 potato before capacity.

2. Fumigation with CIPC @ 40 ml ton-1 potato before capacity and 45 days after capacity.

3. Fumigation with hydrogen peroxide @ 40 ml ton-1 potato before capacity.

4. Fumigation with hydrogen peroxide @ 40 ml-1 to1n potato before capacity and 45 days after capacity.

5. Fumigation with calcium chloride @ 40 ml-1 ton potato-1 preceding stockpiling.

Growing Rate

Third arrangements of perceptions were recorded on growing rate, quantities of fledglings per tuber, sprout weight (g kg-1 tubers) at 30 days stretches after development of fledglings. A tuber was viewed as grown when it had in any event one fledgling estimating 5 mm long.

Decreasing Sugars

Decreasing sugars was dictated by utilizing dinitrosalicyclic colorimetric strategy by recording the absorbance perusing in spectrophotometer at 575 nm. To figure the milligram diminishing sugars per 100 gram new weight of potato, a standard bend was plotted with various centralization of glucose (0.00125, 0.0025, 0.05, 0.01, 0.02, and 0.04 mg glucose-1ml water on X-pivot and retentive perusing on Y-hub. The retentive perusing of tests were recorded and aligned based on standard bend

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and introduced as milligram lessening sugars per 100 gram new weight of potato.

Chips Characteristics

The fifth arrangements of perception were recorded on chips characteristics as chips tone, freshness, taste and by and large agreeableness of chips. For assurance of chips characteristics, arbitrarily chose 10 potato tubers were stripped and cut into cuts of 1.4 mm thickness with a hand worked slicer. Great and flawless cuts were washed completely in virus water to eliminate the surface starch and sugars. These cuts were spread in paper towel to eliminate surface water and afterward singed quickly in palm oil at 180° C till halting of the air pockets.

Growing And Fledgling Weight

The growing was seen following 60 days of capacity at Khumaltar and following 90 days at Daman. Medicines contrasted fundamentally on growing rate at 60, 90 and 120 days after capacity in mid slope . At 60 days, control treatment had the greatest growing (52.9 %) while there was no growing on different medicines. At 90 days the most extreme growing rate (59.50 %) was likewise seen on control treatment and it was the base (2.60%) on multiple times fumigation with CIPC. At 120 days of capacity, growing rate contrasted fundamentally among the medicines at Khumaltar. At Daman, growing was altogether varied at 90 and 120 days of capacity.

Growing of tubers during capacity brought about extensive expansion in absolute weight reduction because of vanishing. Fledglings itself is the immediate weight reduction and higher penetrability, higher surface zone of fledglings and quicker metabolic exercises additionally expanded loss of water from the potatoes. He revealed that utilization of CIPC decreased growing of potato in pile stockpiling and no growing in pits. Additionally, the impact was more at higher elevation which was as a result of the lower temperature. The higher dry issue and explicit gravity on control treatment in this investigation could be because of vanishing of more water through fledglings. Dry issue rate and explicit gravity when capacity regardless of synthetic medicines was higher in the potatoes which were filled in high slope.

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Afzali's Rhythm In "Majma' U-L-Masoil"

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ABSTRACT

Majma'u-l-masoil was written in the 18th century by a poet named Afzali alias. It is a work on jurisprudence. The article first analyzes the types of rhymes and rhyming parts used in Majma'u-l-masoil. It was found that the muqayyad-i mujarrad type of rhyme, the vasl, xuruj, mazid and noyira types of absolute rhyme were used.

KEYWORDS

Manuscript, manuscript fund, art, Afzali, "Majma'u-l-masoil", jurisprudence, poetry, rhyme, mujarrad, vasl, xuruj, mazid, noyira.

INTRODUCTION

In Central Asia, along with the ancient secular sciences, special attention was paid to the study of the Koran, hadith and related sciences, which led to the spread of works on Islam in a scientific and artistic style. [Arifdjanov, Z., 2020; Nizamova, F., 2019; Rustamiy S. A., 2017; Rustamiy, S., 2016; Rustamiy, S., 2018; Rustamiy, S., & Gulomova, H., 2020; Rustamiy, S., Nasirova, M., Sagdullaeva D., 2020; Rustamiy, S., 2019; Shoaliyeva, N., 2019; Karimov N.R., 2019; Karimov, N., & Doniyorov, A., 2019]. Many copies of them are also stored in the manuscript funds available in the Republic of

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Uzbekistan. One such work is Afzali's Majma'ul-masoil.

As a preferred poet, he pays great attention to the content as well as his art in writing "Majma'u-l-masoil". His skillful use of elements such as weight, rhyme, radif, using the requirements of phonology, serves to create the poetic perfection of the work.

THE MAIN FINDINGS AND RESULTS

Afzali's Majma'u-l-masoil is written in a poetic form in which the verses of each verse are rhyming (each verse consists of two verses). Rhymes are sorted, a-a, b-b, v-v ... etc. So, this work is masnavi.

Rhyme elements

"Sound itself has several appearances, which add beauty to speech in varying amounts and degrees. The most beautiful and most used of these is the consonant at the end of the word, from which the masters of the word make Saj in rhyme and prose in poetry "[Rustamov A., 1987].

The fact that Majma'u-l-masoil is written in a poetic style requires special attention to the use of rhyme in it.

It is well known that all the words that are repeated in the rhyming verses after the rhyme are called "radif".

Words such as "erur", "bilin", "khoshachin", "hama", "masal", "durust", "ayladim", "etti bil", "desa" and "bilan" were used as radifs in the play.

"Durust" radifi example:

Gar ru'us-i masala bo'lsa durust,

San amal qilsang bo'lur anga durust [Afzali. Majma' ul-masoil, 49b].

"Ayladim" radifi example:

Man "Xulosa"din muni nazm ayladim,

Afzaliy toliblara bazm ayladim [Afzali. Majma' ul-masoil, 51a].

"Ayladi" radifi example:

Afzaliy cho'lda yurub nazm ayladi,

Ko'rub ul "Muxtor" din bazm ayladi [Afzali. Majma' ul-masoil, 52a].

If a repeated word or words are in front of a rhyme, it is called 'hajib'. In the following examples, the words "bu", "qildi" come in the form of hajj:

Afzaliy sargashta cho'lda bu masal.

Nazm etib bazmina to'kti bu asal [Afzali. Majma' ul-masoil, 59b].

Bu "Muhiyt"din Afzaliy bil qildi nazm,

Toliba ajnosidin qildi bu bazm [Afzali. Majma' ul-masoil, 63b].

The rhyme includes elements such as raviy, ta'sis, daxil, ishbo, qayd, ridf, vasl, xuruj, mazid, noyira. The following elements of rhyme are found in Afzal's work.

The raviy may be in the following cases:

1. If the rhyme is between the core and the core, the core is at the end. "m" in the words Kirom and Tamam in the examples, like "b" in the words Javob and Savob:

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Aylasun har rakatayna, ey kirom,

Tasmiya har, bil namozidur tamom [Afzali. Majma' ul-masoil, 72b].

Man baqavli sohibin aytay javob,

Bu javobim bil sahih hamda savob [Afzali. Majma' ul-masoil, 74a].

2. At the end of the addition with the core when it is between the core and the attachment. In the examples, such as "l" in the words of oshal-amal, "o" in the words of jazmho-muqtado:

Yo ingichka bo'lsa barmaqdin o'shal,

San xijob aylab anga qilma amal! [Afzali. Majma' ul-masoil, 73a]

Yoki tasmi' etsa ul bo jazmho,

Makruh o'lg'ay ul namoz, ey muqtado [Afzaliy. Majma' ul-masoil, 72b].

3. The sound that is repeated at the end of these suffixes when it is between the suffix and the suffix is called raviy [Rustamov, A., 1979, p.74]. In the examples, such as "r" in the words erur -deyur, "g" in the words biling-qiling:

Bu masoil "Tuxfatu-l-fuqaho" erur,

Afzaliy nazm aylabon sanga deyur [Afzali. Majma' ul-masoil, 74b].

Haddi qibla bu erur bizga biling,

Bu asahdur siz amal munga qiling! [Afzali. Majma' ul-masoil, 75a]

Ta'sis. Afzali used the ta'sis sparingly. The "o" sound in front of a consonant sound that comes before a short vowel in front of the narrator of rhyming words is ta'sis [Rustamov, A., 1979, p.77]. For example, the sound "o" in the words "Qozi" and "Rozi":

Bu zamonda har kishi qozi(y) erur,

Har zamon o'lumina rozi(y) erur [Afzali. Majma' ul-masoil, 117a].

In the following verse, the sound "o" in the words "Kofiy" and "Vofiy" is an example of an institution:

Bu rivoyat bilsangiz "Kofiy"dadur,

Ham "Muhiyti Muxtasar", Vofiydadur [Afzali. Majma' ul-masoil, 84b].

In terms of internal weight, it is called short-voiced ishbo [Rustamov, A., 1979, p.77].

It is in these words that we can see that the sounds "z" and "f" come in the input function, because the input is a repetitive consonant sound between the narrator and the object in the rhyming words.

This means that the "i" sound that comes after the "z" and "f" sounds is ishbo. But because the facility is rarely used in the play, both the input and output associated with it are naturally rare.

Qayd

Note. If one of the following ten consonant sounds comes next to Raviy, that is, if there is no vowel in the middle, it is called a note: b, n, z, r, s, f, x, sh, g, h [Rustamov, A., 1979, p .78]. The following verses used by Afzali are marked with "z" in the rhyme, "r" in the rhyme of shar-

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far, "r" in the rhyme of all fragments, and "h" in the rhyme of dahr-qahr:

Afzaliy Kofuriydin nazm etti xush,

Toliba "Hamodiy"din bazm etti xush [Afzali. Majma' ul-masoil, 105a].

Pok bo'lg'ay uchida, ey ahli shar',

Qil amal budur rivoyat asli far' [Afzali. Majma' ul-masoil, 105b].

Gar valiy yobsa o'lukka parchalar,

Ul bo'lur haqqi imom, ey barchalar [Afzali. Majma' ul-masoil, 89a].

Bilki qozi uch erur, ey shoh-i dahr.

Man bayon ettim, manga san qilma qahr [Afzali. Majma' ul-masoil, 116a].

Afzali used the record less.

Ridf-i asliy

There are two types of ridf, one type is called "ridf-i asliy" and the second type is called "ridf-i zayid". The vowel "o" before the narrator and the vowels "u", "o'", "I" and "e", which are elongated in terms of weight, are called "ridf-i asliy" [Rustamov, A., 1979, p.78]. For example:

Lek qavl(i) ba'zi etibdur halol,

Mo''tabar ermas bu qavl, ey zimajol [Afzali. Majma' ul-masoil, 189b].

Ko'rub Afzal bu nazmin bog'ladi bil,

Tama'gin ko'nglini xush dog'ladi bil [Afzali. Majma' ul-masoil, 182b].

Afzaliy ko'rdi hadis ul Rasul,

Nazm etibdur tolibo san qil qabul [Afzali. Majma' ul-masoil, 188a].

Afzali used the rhymes "o" in the rhymes "halal" – "majol", "bag'" – "dog", "Rasul" – "Kabul" and "u" in the rhymes of these examples.

Vasl

Any consonant sound that comes after the narrator and any vowel sound that is elongated in terms of weight is called "vasl" [Rustamov, A., 1979, p.79].

Az baroyi onki ushbu amr anga

Lozim ermish, bo'lma *bohas* [1] san manga [Afzali. Majma' ul-masoil, 116a].

Ikki muslim bir-bira jang etsalar,

Bas, mubohdur anda yalg'on aytsalar [Afzali. Majma' ul-masoil, 118a].

Ko'rdi ul tanbih, bildi g'ofilin,

Nazm etib Afzal eshit, ey oqilin [Afzali. Majma' ul-masoil, 120b].

[1] Has (s) (Arabic).– targ'ib, tashviq.

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In the examples "anga" – "manga" in the words of "g", "etsalar" – "aytsalar" in the words "s", "g'ofilin" – "oqilin" the "I" in words is vasl.

Any vowel that comes after Vasldin and is considered elongated in terms of weight is called a 'xuruj'. In the above bytes "etsalar" – "aytsalar" in the words of "l", "g'ofilin" – "oqilin" in the words of "n", in the following bytes "Muxtoriydin" and "ro'ziydin" the "n" sound in his words formed xuruj.

Afzaliy nazm ayladi "Muxtoriy"din,

Ham yana "Sharhi muloyim ro'ziy"din [Afzali. Majma' ul-masoil, 108b].

The consonant that comes after the xuruj and the vowel sound that is elongated in weight are called mazid [Rustamov, A., 1979, p.80]. In the following verses of Afzali, the sound "r" in the rhymes omdur-hamdur and the sound "d" in the rhymes ahlidadur-sahlidadur are mazid.

Oni uchun bal vasiy ko'p omdur,

Kimki fahm etmas, bu so'z ul xomdur [Afzali. Majma' ul-masoil, 106a].

To'rt xislat bil tamug' ahlidadur,

Do'zaxiydur kimsa kim, sahlidadur [Afzali. Majma' ul-masoil, 121a].

The "r" sound of the Ahlidadur-Sahlidadur rhymes in the example is Noyira. The reason is that "all the consonants after the mazid and the vowel sounds, which are considered to be elongated in weight, are called" noyira "no matter how many" [Rustamov, A., 1979, p.80].

Types of rhyme

Rhyme is divided into several types according to the presence of the elements listed above. "A rhyme is called a muqayyad rhyme if it ends with a narrator and does not add vasl, xuruj, mazid and noyira to it." [Rustamov, A., 1979, p.81]. There are seven types of Muqayyad rhyme, five of which Afzali used:

The first of these types is the muqayyad-i mujarrad rhyme. Its feature is that it is "ta'sis, daxil, ridf and qayddan", that is, limited to the narrator itself" [Rustamov, A., 1979, p.81]. For example:

Ul-ki ta'sir aylag'ay-kim, ey falon,

Suls-i molidin beringlar ul zamon [Afzali. Majma' ul-masoil, 133b].

Bu mushobih so'zga qilsang san amal,

Begumon bo'lg'ay sani ishing asal [Afzali. Majma' ul-masoil, 134a].

Avvalan bad xuy bo'lsa ul xotun,

Yana ko'zi ko'k esa az bas zabun [Afzali. Majma' ul-masoil, 156a].

Naql erur hazratdin, ey shoh gado,

Ummat o'lsang jon so'zumga qil fido [Afzali. Majma' ul-masoil, 156a].

Bir ajoyib mas'ala ko'rdum bu kun,

O'qubon ko'nglumg'a tushti yuz tugun [Afzali. Majma' ul-masoil, 168b].

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There are many examples of muqayyad-i mujarrad rhyme in the play.

The second type is the institutional muqayyad rhyme. Example:

Bu zamonda har kishi qozi(y) erur,

Har zamon o‘lumina rozi(y) erur [Afzali. Majma’ ul-masoil, 117a].

The third type is the institutional and internal muqayyad rhyme, with the example “z” repeated between the narrator and the institution in the rhymes “qozi (y)” – “rozi (y)” of the above verse being an example of this type.

The fourth type is the rhyme of the original rhyme. Example of type of rhyme:

Dar shari’at bu ravodur, ey kirom.

Taxt g’usla, g‘usla bo’lg’ay bil tamom [Afzali. Majma’ ul-masoil, 62b].

Afzaliy ko’rdi “Xizona” ham “Fusul”,

Nazm etibdur tolibo, san qil qabul! [Afzali. Majma’ ul-masoil, 69b]

Bo’ldi yuz o’n to’rt sura, ey hakim,

Barcha Qur’on man sanga aydim salim [Afzali. Majma’ ul-masoil, 186a].

The fifth type is the rhyme mufradli muqayyad and the sixth type is the rhyme complex muqayyad rhymes, which Afzali did not use.

Seventh round - Noted Muqayyad rhyme. This type of rhyme is rare in the play. For example:

“Muxtasari viqoya”din nazm ayladi,

Afzaliy toliblara bazm ayladi [Afzali. Majma’ ul-masoil, 112a]

Bas, duxul etmak qabulg‘a shart erur,

Kimki tafriq aylasa ul mard erur [Afzali. Majma’ ul-masoil, 112]

Thus, in the work “Majma’ul-masoil” there are no types of established and internal muqayyad and complex muqayyad rhyme.

There is also an absolute rhyming type of rhyme, which can be vasl or xuruj, mazid or noyirali. For example:

Bu rivoyat Lomashi, No‘‘moniyda,

“Hayrat ul-fuqaho”, “Viqoya xoniy”da

Ham “Hidoya”, “Muxtasar”, “Qironda”dur,

Afzaliy, nazmu dil jon tandadur [Afzali. Majma’ ul-masoil, 61a].

In the example, in the words “Nu’mani” – “khaniyda”, “l” is vasl, “y” is xuruj, and “d” is mazid, so this rhyme is a vasli, xuruj, mazid type of absolute rhyme.

In the next verse, the words “Qirondadur” – “tandadur” contain the first “d” vasl, the second “d” xuruj, the “u” mazid and the “r” noyira, so this rhyme can be a vasl, xuruj, mazid and noyira type of absolute rhyme.

Afzaliy ko‘rdi “Xulosa” yuzidin,

Nazm etib Amniya Shaybon so’zidin [Afzali. Majma’ ul-masoil, 58a].

Since the words “yuzidin” – “so’zidin” in the example contain “l” vasl, “d” xuruj, “l” mazid and “n” noyira, this rhyme belongs to the vasli,

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xurujli, mazid and noyira types of absolute rhyme.

CONCLUSION

1. In "Majma'ul-masoil" the muqayyad-mujarrad type of muqayyad rhyme is the most active, vaslli, xurujli, mazidli and noyira types of absolute rhyme are used moderately, the note rhyme is rarely used.
2. Afzali strives to make the work easy to read, understand and memorize, in which he is content with very simple types of rhymes.

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Features Of Influence Of Industrial Enterprises Almalyk City On The Geological Environment

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ABSTRACT

The article considers that the course of more than 5 decades as a result of the infiltration of contaminated waters of open pits, dumps, slag accumulators of the copper smelting plant (CSP), the production association (PA) "Ammophos", tailing dumps of copper concentrating factories (CCF -1 and CCF -2), as well as due to the leakage of reagents from the sulfuric acid shop through rocks that are not consistent in area and insignificant thickness of loess-like loams, and the penetration of polluting components into the aquifer occurs. Due to the action of the infiltration flow, a change in the chemical composition of soils occurs on solid soil particles, a number of chemical compounds are sorbed.

The article provides recommendations for reducing the pollution of the geological environment.

KEYWORDS

Technological processes, geosystem, geoecology, natural landscape, tailing dump, self-cleaning process, water-bearing rocks, adsorption, infiltration, chronic pollution.

INTRODUCTION

The development of industry within the Tashkent region caused an anthropogenic metamorphosis of the qualitative composition of both surface and groundwater interconnected with them. Only within the valleys of the Akhangaran river, there are, respectively, about 20 or more industrial, municipal and other enterprises, which are

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concentrated, mainly in the cities of Almalyk, Akhangaran and also the adjacent territories.

MAIN PART

In the Almalyk mining and industrial region, the development of the mining and processing industry, urban construction, urban economy, along with great importance in the economy of the republic, has a significant negative impact on the environment. At the same time, its intensive change and deterioration of the state of geoecological conditions occur, the natural landscape changes, peculiar forms of relief are formed, represented by quarries, dumps, tailing dumps of JSC Almalyk Mining and Metallurgical Combine (AMMC), Ammophos Production Association and other industrial enterprises. Without touching on the issues of technology for the extraction, transportation and processing of raw materials, we note that now an important task is the further development and implementation of technological processes for the processing of massive industrial waste products in order to reduce environmental pollution. [1; 2]

RESULTS AND DISCUSSIONS

When analyzing the impact of industrial waste on the natural environment, special attention is paid to the following factors: area of distribution, impact on the relief, soil, surface and ground waters.

At present, the area of land on which the waste of copper concentrating factories (CCF-1 and CCF-2) is located, and the waste of the copper smelting plant (CSP) and production association Ammophos is more than 10 km2. The base of the tailings storage ponds (old) of the CCF, slag storage ponds of the CSP and waste of the Ammophos production association is the II accumulative terrace of the Syrdarya complex of Quaternary deposits. It is represented from above by a thin (0,5-1,5 m) sandy-loamy soil-vegetation cover, below by gravel-pebble deposits with a thickness of more than 15-20 m and with a groundwater depth of 8-10 m and more. [3]

In the areas below the industrial sites of the JSC Amalyk Mining and Metallurgical Combine and the Almalyk Chemical Plant, groundwater salinity is 0,8-1,0 g / l and depending on the mode of operation of the pollution source, the season of the year, etc.

Localized contaminated areas are noted below the tailing dump at the copper concentrating factories (CCF). Here, in groundwater, the manganese content occasionally exceeds the MPC. Among other pollutants, molybdenum, copper, lead, zinc in concentrations up to 0,5 MPC were recorded.

The increased areal pollution of groundwater in the middle and lower parts of the Akhangaran river valley is associated with nitrogenous compounds, which tends to change the quality of groundwater towards deterioration.

The combined tailing dump (new) CCF-1 and CCF-2 are located within the III terrace of the Holodostep erosion-accumulative cycle, represented by a 2 and 3 m cover of loam, and below by coarse (gravel) sediments.

Uplands formed from waste products of the Ammophos Production Association, CSP, tailing dumps CCF-1 and CCF-2 (Fig. 1), exceeding the absolute elevations of the territory by 15-35 m. The natural

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microreliefdisappeared, a new anthropogenic relief was formed.

Fig. 1. Waste locations of PA "Ammophos" (3) and slag from CSP (4)

The thickness of the soil and vegetation layer on the territory is 0,2-0,5 m. Due to the action of the totality of soil organisms, chemical and biochemical reactions, plants ha-ve the opportunity to feed on organic substances, the required amount of which in the last century Liebig called the law of minimum [1]. Now this regularity is violated by the presence in soils of increased concentrations of nitrogen, Na, NO2NO3 and SO-24, SO-3NH44, HF.

The change in the properties and composition of soils that make up the territory occurs in three directions. This is, firstly, the compaction of rocks under the body of storage ponds, which leads to a change in the physical and mechanical properties, an increase in moisture and a decrease in the porosity of rocks, a change in density, strength parameters. Thus, the density values of sandy loamy-loamy soils from the weight of technogenic massifs change from 1,45 to 2,20 g /cm3, porosity from 55% to 40%, the value of the angle of internal friction from 28 ° to 24 °, shear resistance depending on moisture and soil density from 0,062 to 1,175 MPa.

In the zone of influence of the tailing dumps CPF-1 and CCF-2 (Fig. 2), due to the action of the infiltration flow, changes in the physical composition of soils occur, readily soluble compounds are washed out (bicarbonates - HCO3-1. Sulfates - SO4-11. Chlorides-Cl-1), a number of chemical compounds are sorbed on solid soil particles: copper, cadmium, bismuth, lead, molybdenum, manganese, zinc, rhenium, arsenic and others [3;4].

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Fig. 2. Tailings dumps CCF-1 and CPF-2

There is information about intense contamination of the soils of the area around the tailing dump to a depth of 10 m with heavy metals and other toxic elements (lead, zinc, arsenic, copper, antimony, tungsten, vanadium, etc.) reaching 50-80 MPC. Copper pollution of soils sac companied by carbonate pollution [5].

The main sources of pollution of surface and underground water bodies are the mines of Kurgashinkan, Kauldy, Sary-Cheku, Kalmakir, waste (abandoned quarry filled with contaminated water) (Fig.3), tailing dumps CPF-1 and CPF-2, dumps of PA Ammofos, CSP, sulfuric acid workshop and other facilities of the enterprise (Fig. 1).

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Fig. 3.Kurgashinkan (1) and Kalmakyr (2) deposits.

The ores of the Almalyk ore region contain many minerals represented by chemical compounds: $3MgO\ 4SiO_2\ H_2O$, Al_2O_3, $4SiO_2\ H_2O$, $CuFeS_2$, Cu_2O, Cu_5FeSO_4; CuS; FeS_2; Fe_2S_3; Sb_2S_3; FeAsS; As_2S_3; HgS; CoAsS; As_2O_3; MoS_2; Ag_2S; S; Fe_3O_4; Fe_2O_3; $CuSiO_3$; HH_2O; $PbSO_4$; PbS; ZnS; $ZnSO_3$; $BaSO_4$ and others. Dumps of PA "Ammophos" contain: $CaSO_4\ 2H_2O$ или (CaO; SO_3; H_2O); $MgCO_3$; SiO_2;Fe_2O_3; P_2O_5; HF;and etc.

CSP dumps contain: FeO; Fe_2O_3; Fe_3O_4; ZnO; CuO; CaO; $FeOSiO_2$; Al_2O_3; Al_2O_3;As_2S_3; As_2O_3;SiO_2; FeAsS.

With the assistance of groups of bacteria, converters of mineral substances, when deposited in ore dumps containing the above chemical compounds, chemical weathering occurs. It is known that these basic bacteria are capable of leaching copper and other non-ferrous metals, sulfide compounds. Ferrobacillus Ferrooxidons bacteria can oxidize 0,02% Fe (3) in three days [6;7]. The optimum temperature for the activity of bacteria is 28-30°C, which is typical for this area. Iron oxidation by bacteria occurs according to the reaction:

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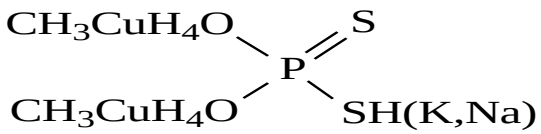
$$2FeSO_4 + 0{,}5O_2 + H_2SO_4 \rightarrow Fe_2(SO_4)_3 + H_2O$$
$$FeS_2 + 3{,}5O_2 + H_2O \rightarrow FeSO_4 + H_2SO_4$$
$$2FeS_2 + 7{,}5O_2 + H_2O \rightarrow Fe_2(SO_4)_3 + H_2SO_4$$
$$S + H_2O + 1{,}5O_2 = H_2SO_4$$

Copper minerals are chemically and bacterially oxidized:

$$2CuFeS_2 + 8{,}5\,O_2 + H_2SO_4 \rightarrow 2CuSO_4 + Fe_2(SO_4)_3 + H_2O$$
$$CuFeS_2 + 2Fe_2(SO_4)_3 = CuSO_4 + 5FeSO_4 + 2SO$$
$$Fe_2(SO_4)_3 + 6H_2O \rightarrow 2Fe(OH)_3 + 3H_2SO_4$$
$$4Cu_2S + 9O_2 = 4CuSO_4 + 2Cu_2O$$

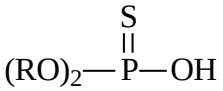
In the wastes of the tailing dump of the MOP, the predominant ions are Cu^{2+}, Fe^{3+} and they can be oxidized by the residues of flotation reagents added at the factories.

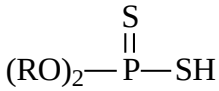


Interacting with Cu^{2+} and Fe^{3+} ions

$$4(RO)_2P_5S + 2Cu^{2+} \rightarrow ((RO)_2P_5S)_2Cu_2 + ((RO)_2P_5S)_2$$
$$6(RO)_2P_5S + 2Fe^{3} \rightarrow ((RO)_2P_5S)_2 + 2Fe((RO)_2P_5S)_2$$

Ditophosphates are often present in the waters of tailing dumps, where intense water filtration occurs.





Reactions of this type can take place in the tailings of the concentrating factories. The process of pollution as a result of infiltration of water from open pits, dumps, slag ponds, sedimentation tanks (tailing ponds) CCF-1 and CPF-2 (Fig. 4), as well as leakage of reagents from the sulfuric acid shop through the rock aeration zones occurs for 5 decades. So, the filtration zone of the Akhangaran river valley is represented mainly by rocks with high water filtration properties (up to 10 m^3/day). The rate of spread of pollution depends on many factors: on the natural protection (covering of the aquifer with poorly permeable sediments); due to the lack of a high-quality insulated bedding at the base of the waste storage; from a sharp rise in the level of groundwater: from abundant atmospheric precipitation; due to the emergence of the water-bearing rocks of the first aquifer from the surface. [5].

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Figure: Sediment tank CCF-1 and CPF-2

The groundwater of Quaternary sediments within the region, due to the insignificant thickness of the weakly water-permeable loess-like loams, is poorly protected from the harmful effects of technogenic loads and there is a possibility of rapid penetration of polluting components into the aquifer.

In the Akhangaran valley, water-bearing rocks come to the surface and do not have a regional aquiclude. They are the main source of water supply for large settlements of the Pskent region, located hypsometrically below the Almalyk industrial region.

As it is known, submitted by R. Carbienar, the chemical pollution of groundwater at the first stage, which is temporary, then becomes chronic. In case of chronic pollution, a group of pollutants has an inhibitory effect on the self-cleaning process [7].

Mechanical contamination of surface waters is an occasional one-time discharge of waste (sludge, slag, etc.) by Ammophos Production Association, CCF-1, CPF-2, CSP, sulfuric acid workshop and other enterprises into canals and ditches as a result of pipeline accidents, tailing dumps , which are no exception in this respect.

This information shows the general nature of the pollution. However, this is not enough and it is necessary to determine the necessary indicators that follow in the whole region and depend on the branch industry and the type of industrial enterprise.

The main tasks of further research can be considered the study of quantitative factors characterizing the variability of the natural geological environment under the influence of the industry of the region.

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CONCLUSIONS

Thus, the fastest solution of urgent problems of minimizationthe harmful influence of industry on the natural environment, processing of existing man-made massifs (waste) and the introduction of waste-free production technology will improve the state of geoecological conditions and prevent environmental pollution.

Water protection measures in the identified areas with different ecological conditions are as follows:

1. For areas with favorable ecological conditions (right-bank parts of the Akhangaran river valleys), preventive water protection measures are recommended. This is to avoid the extent to which the dilution capacity of the soil flow is fully utilized. There should not be placed facilities based on technology that use accumulators of liquid waste, from which highly concentrated effluents are filtered (chemical, metallurgical, mining, oil-extracting industries, and other plants).

2. For areas with a conditionally favorable ecological state, where a negative trend of deterioration in quality is currently outlined, it is required to prevent the construction of new large industrial facilities. In existing industrial enterprises, a clear organization of water consumption accounting and strict regulation of consumption, the fight against losses and leaks are necessary.

3. For areas that are already polluted and have substandard waters in an unfavorable ecological state, it is recommended to improve the hydrochemical situation at industrial sites, increase the degree of wastewater treatment at treatment facilities, improve the technological process, and reduce the technogenic load.

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Factors Affecting Grain Storage Processes On Quality Indicators

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ABSTRACT

In practice, the durability of the combine harvester is of great importance because during this period the seeds acquire a conditioning character during cultivation and meet the requirements of state standards for sowing quality. Technological longevity is a term in which baking, fodder or technical properties must be preserved during the grain harvesting period.

For cereal or polluting mixtures in accordance with current standards, seeds of wild plants and some cultivated plants that belong to them breathe during storage, they undergo the last ripening processes from the collection and bruising under certain conditions. These include all the patterns and features inherent in the main type of culture that makes up the grain mass.

KEYWORDS

Economic characteristics of grain, its conditional character for growing seeds, state criteria for the quality of sowing, technological durability, admixtures of pollutants, metabolism, the vital activity of grain mass, physiological and biochemical processes, improper organization of storage of grain mass.

INTRODUCTION

Grains and seeds of a particular plant are considered living organisms during collection, transportation and storage. Consequently, constant metabolism is a necessary condition for the survival of living matter, which reflects the vital activity of the grain mass. The main

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form of life is a gas exchange (breathing). Also, many lots of grain and seeds undergo physiological and biochemical processes called post-harvest ripening, and finally, as a result of improper storage of the grain mass, a germination situation occurs, which is practically unacceptable.

MATERIALS AND METHODS

Buyers of grain and seeds (seeds, technological and consumer) the period during which they retain their properties is called their durability. Seed production has long-term biological and economic sustainability. First, at least one seed must germinate in the grain mass.

There are three types of seeds of biological long-term stability: 1- seeds of macrobiotics, shelf life from several days to 3 years (rye); Seeds of macrobiotics 2, tolerance 3-15 years (wheat); seeds of macrobiotics, resistant to 15-100 years (alfalfa seeds, etc.).

In practice, grain durability is of great importance. This is the period during which the seeds are conditioned for germination and meet the requirements of state planting quality standards. Technological longevity is the period during which the grain must maintain its intact, fodder or technical properties.

For grain or mixtures of contaminants in accordance with current standards, the seeds of the corresponding wild and some cultivated plants breathe during storage, where, under certain conditions, they undergo post-harvest maturation and germination. They can be considered as belonging to all the laws and characteristics of the main type of crop that makes up the grain mass.

It should be borne in mind that the moisture content of polluting seeds, therefore, the respiration rate in the early stages of storage is usually higher than the moisture and respiration rate of the main species. They allow the grain mass to self-moisten and heat up. For these reasons, immediately after harvest or grain harvest, the infected seed must be removed immediately upon delivery to the plant. If this is not possible, the grain should be cleaned in the first days of storage.

The temperature as a result of the active vital activity of the components of the grain mass is called spontaneous heating. Spontaneous healing occurs in the grain mass under the influence of various environmental factors. As a result of the rapid respiration of the grains and the heat generated by the seeds of wild plants, microorganisms, insects and channels, the heat is retained in the grain due to poor heat transfer. As a result, heating starts at this moment. When spontaneous heating begins, the temperature first rises to 55-65 °C in some parts of the grain mass, and then in all its parts.

The rate of development of spontaneous heating in grain heaps can be different. In some cases, the temperature rises to 50 °C a few days after the start of the process, and sometimes for a very long time.

This temperature difference is due to many reasons and can be divided into three groups: the state of the grain heap; condition and construction of warehouses; storage conditions of grain heaps and methods of monitoring them.

Grain dump condition. Characteristics of all conditions and indicators, in particular, the intensity of the heating process is greatly

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influenced by its humidity, temperature, physiological activity and the composition of microflora... The low capillary moisture content of the grain mass (condensation of water vapour) significantly affects the intensity of heating. The more free water in the grain mass, the more intense the spontaneous heating.

Spontaneous heating of the grain mass is accompanied by moisture, and also depends on temperature. Experiments have shown that spontaneous heating develops very slowly at a temperature of 10-15 °C. At temperatures below 8–10 °C, the grain mass practically does not heat up. Spontaneous healing occurs mainly at high temperatures. Spontaneous heating by 23-25 °C increases several times, and the grain temperature quickly reaches 50-55 °C. The temperature then gradually decreases to ambient temperature, but the grain becomes completely unsuitable for use as seeds, food and livestock.

Numerous experiments have shown that microorganisms activity also causes spontaneous heating. The process will take place as follows. At the beginning of the process, microorganisms multiply rapidly, especially epiphytic bacteria and fungi; development of the process (temperature rise to 25-40 °C), constant multiplication of microorganisms, growth of moulds and actinomycetes, reduction of epiphytic microflora; -the process continues (the temperature rises to 40-50 °C) - epiphytes completely disappear, thermophilic bacteria accumulate, the total number of microorganisms decreases; - the end of the process - the microorganisms continue to decrease.

At the beginning of the self - heating process, only moulds remain not to multiply, but to change species. The exchange is dependent on temperature and humidity, and the process begins with the development of Alternaria fungi, which are then replaced by Aspergillus and Penicillium.

The state of the warehouses during self-heating of the grain mass. The condition and structure of warehouses are subject to spontaneous heating. The degree of waterproofing of the warehouse, thermal conductivity and structural elements, air circulation, etc. will also depend.

How well the warehouse is waterproofed, as well as the heat if it has walls, floors and a roof with low permeability, then the air is better controlled and as a result less self-heating. Poor insulation of walls, roof and floor allows additional moisture to penetrate the grain, which causes it to heat up.

The height of the grain pile depends on the condition of the grain mass to be determined. The dirtier and wetter the grain, the higher the pile should be so low. Silo from chilled and dried grain mass, the elevators can be placed at a height of 20-30 m.

Uncontrolled processing of the grain mass also leads to overheating may cause. Any heating process, even the initial heating stage, leads to a loss of dry matter and a decrease in grain quality. The rate of loss and degradation of dry matter depends on the end temperature of the spontaneous heating and how long the grain has been in the heating state. The self - heating process of grain causes the following changes:

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- Signs of novelty (colour, smell, taste and lustre)
- As a result of changes in its chemical composition, technology, food products and changes in vaccine prices; - changes in the quality of seeds.

When the grain mass heats up on its own, its colour changes dramatically and becomes darker or dark brown. Grain at the final stage of heating is darkened by microorganisms. Studies have shown that the quality and colour of self-heating grains vary. The darker and more pigmented the grain is, the lower its nutritional, technological and nutritional value. However, it should be noted that the quality of seeds (germination, germinating feed) of grain decreases in the early stages of spontaneous heating.

It is known that grain products contain a lot of dry matter during storage and decreases. Thanks to this, a special natural reducer was introduced into the stored products. The natural reduction of stored food is specially formulated for both laboratory and production environments. These standards are used as a control in determining the number of products in grain enterprises. It should be noted that the quality of the products is preserved with a natural decrease. If a batch of grain is stored for more than one year, the natural loss is 0.04% for each subsequent year or the corresponding number of months.

CONCLUSION

Numerous experiments show that if the storage process at any enterprise is organized on a scientific basis, organizational and technological measures are taken in a timely manner, the decrease in the quality and quantity of products will be minimized.

This means that during the storage of grain, their moisture content, the absence of various impurities, and storage conditions are important, which affect the quality and durability of the grain mass.

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The Desert Tourism And Opportunities For Its Development (On The Example Of Bukhara Region)

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ABSTRACT

The territory of Uzbekistan consists of temperate and subtropical desert zones. 88.6% of Bukhara region is desert. Ancient roads in the desert part of the region (Bukhara - Karshi, Bukhara - Khorezm, etc.), water bodies (Amu-Bukhara canal, abandoned lakes, cisterns, mineral springs and wells, etc.) and special reserves (state orders, reserves, etc.), ancient cities (Varakhsha, Poykent, Vardonze, etc.), historical monuments and shrines can serve as tourist attractions.

In this article we will discuss the desert tourism and opportunities for developing it in Bukhara region.

KEYWORDS

Tourism, desert tourism, opportunities, Bukhara region, Jayran ecological center, reserve.

INTRODUCTION

Today, tourism is one of the fastest growing industries in the world. Human interest in different countries and regions, the picturesque nature of states, the diversity of their economies and the social lifestyles of their inhabitants cause millions of people around the world to travel as tourists every year. In addition, each country has created specialized tourism networks based on its natural conditions, national mentality of its population and unique history. And natural conditions play an important role in the

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formation of the tourism industry. For example, the northern countries have more winter tourism, the Alpine countries have more mountain tourism, the coastal countries have more beach tourism, and the Sahara countries have more desert tourism. Similarly, the forest tourism, steppe and pasture tourism, river and lake tourism along major rivers and lakes have been formed in the forest zone area by regions of the world.

MATERIALS AND METHODS

Some local scientists (Z.M. Akramov, A.Abdulkasimov, I.K. Nazarov) also acknowledged that more than 70% of our country is occupied by deserts. Desert areas occupy the western and central parts of the republic, including Ustyurt, Kyzylkum, Lower Zarafshan, Karshi Desert, Mirzachul and others.

The territory of Uzbekistan consists of temperate and subtropical desert zones. The temperate deserts include the Ustyurt Plateau, the northern foothills of the Amu Darya, and the subtropical deserts include the Amudarya delta, Kyzylkum, Lower Zarafshan, and the foothills of the Kashkadarya foothills.

These natural landscapes are effectively used in various sectors of the national economy of the Republic of Uzbekistan. In particular, desert areas, which make up more than 70% of the country's territory, have great potential. Bukhara region is one of the regions in the south-west of Uzbekistan, located entirely in the desert zone. Naturally, the territory of the region is occupied by the Lower Zarafshan district and a large part of the Kyzylkum desert. The desert part of the region is widely used today in industries such as mining (mining, fuel, construction materials, etc.), animal husbandry (Karakul) and transport. However, the tourist potential of the deserts is also unique.

88.6% of Bukhara region is desert. Ancient roads in the desert part of the region (Bukhara - Karshi, Bukhara - Khorezm, etc.), water bodies (Amu-Bukhara canal, abandoned lakes, cisterns, mineral springs and wells, etc.) and special reserves (state orders, reserves, etc.), ancient cities (Varakhsha, Poykent, Vardonze, etc.), historical monuments and shrines can serve as tourist attractions.

In addition, the issuance of a number of resolutions and decrees by the President of the country over the past 3-4 years is the basis for further development of the industry. And it requires the further development of not only domestic but also foreign tourism in the regions and the effective use of existing opportunities.

There is an opportunity to organize year-round tourism in the desert areas of Bukhara region in the state orders and reserves. For example: the Bukhara Specialized Jayran Reserve which was founded in 1977 and is located 42 km southeast of Bukhara near the Bukhara-Karshi highway. Initially, it was referred as the" Bukhara special care facility for the breeding of the gazelle" and its task was to investigate the problems of breeding, biology and rational use of population resources of this unique animal species. According to the recommendation of the scientists, 5145 hectare desert landscapes (erosion subsidence) between Momojurgoti and Saritosh plateaus were allocated for the establishment of the reserve. This area, where the desert and fauna are widespread, is fully compatible with the natural areas inhabited by

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the gazelle. In addition, the Amu-Bukhara Canal flows from the south of the reserve.

As a result of research conducted by scientists, the number of rare animals in the reserve area has increased. Initially, 43 gazelle were protected, but today 1,045 gazelle, 172 Turkmen kulans, 17 Przewalski's horses, 2 Hongul (Bukhara deer), 52 Bukhara mountain sheep and other species are protected.

A policy has been pursued to expand the area of the Jayran Eco-Center, which specializes in the breeding of rare species of animals. On February 2, 2009 by the decision of the Bukhara regional khokimiyat No. 80 9363 hectares of land were transferred to the balance of the eco-center, the area of which reached 16.5 thousand hectares. In 2011, with the sponsorship of the Shurtan Gas Chemical Complex, new sites were added to the territory of the eco-center. The territory of the ecological center "Jayran" is conditionally divided into two parts. The area of the first is 5,000 hectares, where rare animal species are bred. In the second part, with an area of 11.5 thousand hectares, there is an adaptation center. It is bred naturally for Turkmen slaves, Przewalski's horses and gazelles.

The tourist potential of the Bukhara specialized reserve "Jayran" is incomparable. In the charming desert nature, unique animals and unique landscape, you can relax, unwind, restore health and enjoy the beauty of nature. In addition, the convenient geographical location of the eco-center allows it.

Any tourist visiting the Jayran Reserve can have such opportunities:

- Rest (relaxation) in the vast desert nature;
- Restoring health by enjoying desert landscapes;
- Knowledge of desert animals and their biology;
- Familiarity with desert flora and its peculiarities;
- Joining the conservation of biodiversity and nature conservation in the desert;
- Achieving an increase in environmental culture through information on hunting tourism, hunting;
- Organization of field trips and field (mobile) lessons for pupils and students in the nature of the desert, in natural laboratories, etc.

Based on the above, it is expedient to further develop domestic tourism in the reserve "Jayran". First of all, it is necessary to take measures to attract schoolchildren and students. And the promotion of the "Jayran" reserve in educational institutions and mahallas, roundtables aimed at improving nature conservation and environmental culture among young people give good results. Regular updating of the site of the eco-center "Jayran", the organization of online tourist routes around the reserve will also have a positive effect.

At present, the Bukhara specialized reserve "Jayran" has begun practical work to further improve tourism and the formation of tourist infrastructure. In particular, the site of the reserve has been established including the establishment of a museum in the eco-center and the construction of a hotel and a conference hall in the reserve. There is no doubt that the construction of these facilities in the near future in the reserve "Jayran" will

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develop not only domestic but also foreign tourism.

It is also possible to create tourist centers and nodes along water bodies in arid areas. And hydrographic objects play a key role in the development of arid areas. Freshwater rivers and canals play a special role in the development of desert regions. In particular, the importance of the Amu-Bukhara machine canal in the socio-economic life of Bukhara region is incomparable. At present, a total of 314.9 thousand hectares, including 275.0 thousand hectares in Bukhara region and 39.9 thousand hectares in Navoi region, are irrigated by the Amudarya River. However, the level of use of the canal in other sectors of the economy, especially for recreational purposes, is not satisfactory. On the banks of the Amu-Bukhara machine canal (Phases I-II) there are wooded, bushy groves that can be used for recreational purposes. In the wooded groves with a width of 8-12 meters along the water, dark poplar (type 2), willow, jiida, wicker reed, willow, ordinary reed paths were formed (Table 1).

Table 1

Types of recreation of the Amu-Bukhara machine canal

Types of recreational use	Location features	Access to facilities	Names of recreational areas	Availability of infrastructure
Swimming in a boat	The width of the canal is 10-14 m, the width of the water level is 14-16 m, the depth is 4-6 m.	Bukhara - Karavulbozor bus route	Gavan bridge - Karavulbozor bridge	The roads to the destinations are paved. Infrastructure is not available.
Fishing (sport)	Amu-Bukara machine channel (I-II turns) shore rocks	Bukhara-Karavulbozor route bus route	Gavan bridge - Karavulbozor bridge	The roads to the destinations are paved. Infrastructure is not available.
Travel tourism	Study of flora and fauna of the region	Bukhara-Karavulbozor route bus route	In the area where the Jayran Ecological Center is located	The roads to the destinations are paved. Infrastructure is available.

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Restoration of health	Arranging a rest on the slopes around the canal	Bukhara-Karavulbozor route bus route	In the area where the Bukhara-Karshi road crosses	The roads to the destinations are paved. Infrastructure is not available.

The table was compiled by the author.

As the table shows that the Amu-Bukhara machine canal can be used for recreational purposes such as boating, fishing (sports), travel tourism, rehabilitation. However, the lack of infrastructure limits the use of the canal area for recreational purposes. Therefore, in the near future it is advisable to build modern hotels (for example, near the Jayran Ecological Center) and public catering establishments.

In addition, there is an opportunity to implement daily tourist routes through the desert areas of the region. Such routes can be implemented in such ancient cities as Varakhsha, Poykent, Vardonze, as well as in the tourist centers around the Bukhara Dessert Oasis & Spa and the Todakol Reservoir. You can also visit more than 10 "tourist neighborhoods" and "tourist villages" in the region, where you can enjoy the conditions created and the rich national traditions, customs and crafts of our people.

In short, the desert regions, especially Bukhara region, have great tourist potential. In particular, the ancient roads in the desert part of the region (Bukhara - Karshi, Bukhara - Khorezm, etc.), water bodies (Amu-Bukhara machine canal, abandoned lakes, cisterns, mineral springs and wells, etc.) and special protected areas (government orders, nurseries, etc.), the use of ancient cities (Varakhsha, Poykent, Vardonze, etc.) as tourist facilities has great prospects. Currently, some of them are used in tourism, especially domestic tourism. However, in the future, by improving the tourist infrastructure, there is an opportunity to use these facilities as objects of international tourism. And it is necessary to group these facilities in terms of tourism and to increase the number of media outlets informing tourists about these tourist facilities, as well as to develop advertising and propaganda work. In addition, further improvement of modern tourist infrastructure around tourist facilities will serve to increase the flow of tourists.

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The Role Of Physical Exercises In The Development Of Consciousness

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ABSTRACT

This article deals with the importance of exercise in the development of consciousness. Here, in the examples, one can see the positive effects of exercise on human health, on performance and life. The article will be useful to all interested readers.

KEYWORDS

Physical exercise, health, movement, thinking, physical labor, activity, mind.

INTRODUCTION

Exercise improves their ability to think, plan, and their math skills. Exercise is associated with increased activity in the areas of the brain that are responsible for integrated thinking and self-control. In physically active people, the so-called area of the executive brain functions associated with planning, logic, abstract thinking and social behavior increases, and your mind will also be awake.

Today it is impossible to find a single sphere of human activity that is not related to physical culture, since physical culture and sports are generally recognized material and spiritual values of society as a whole and of each person individually.

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Historically, physical culture has developed primarily under the influence of the practical needs of society in the full-fledged physical preparation of the younger generation and the adult population for work. At the same time, as the systems of education and upbringing were developing, physical culture became the basic factor in the formation of motor skills and abilities. A qualitatively new stage of understanding the essence of physical culture is associated with its influence on the spiritual sphere of a person as an effective means of intellectual, moral, aesthetic education.[1]

Unfortunately, many people do not follow the simplest, science-based norms of a healthy lifestyle. Some become victims of inactivity (hypodynamia), which causes premature aging, others go overboard in food with the development of obesity, vascular sclerosis, and in some cases, diabetes mellitus, which is almost inevitable in these cases, while others do not know how to rest, be distracted from work and domestic concerns, are always restless, nervous, suffer from insomnia, which ultimately leads to numerous diseases of the internal organs. Some people, surrendering to the addiction to smoking and alcohol, actively shorten their lives.

MATERIALS AND METHODS

A person satisfied the natural need for movement throughout his life in the labor process. With the development of scientific and technological progress, the living conditions of people began to change. A characteristic feature of these changes was the steady reduction in the share of physical effort in work and life. Such specialties as diggers, hammer-cutters, lumberjacks, blacksmiths began to disappear, and their functions were transferred to combines, automatic machines, robots. Workers began to transform themselves into automatic line operators. In the field of production and science, computers are increasingly used. Over a short historical period in the last 60-70 years, the share of muscle labor in the sphere of material production has decreased by almost 200 times.[1]

The living conditions, which previously required significant expenditures of physical labor, have also changed. Vacuum cleaners, floor polishers, washing machines appeared that freed people from physical exertion. Economists have calculated that there are, on average, about 100 different technical devices for every inhabitant of the Earth, the overwhelming majority of which facilitate or replace physical labor.

The process of urbanization of the population has significantly intensified. The growth of large cities led to the development of urban transport, elevators, telephones, television, which contributed to a decrease in the physical activity of people.[2]

As a rule, a person after work, having got home in public transport, spends the rest of the time reading or watching TV. The researcher found that the increasing number of obese schoolchildren is due to the fact that these boys and girls spend several times more time watching TV than their rural peers. Statistics also show that pathological changes in the circulatory system, respiratory tract and nervous system in cities are one and a half to two times higher than in rural areas.[6]

Thus, scientific and technological progress, along with the improvement of living and

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working conditions in a modern society, creates the preconditions for a sedentary lifestyle. Restriction of the function of movement causes a special condition - hypokinesic syndrome or illness. Physical inactivity (or hypokinesia), like rust, corrodes professional performance, worsens health, and shortens life expectancy. Lack of movement is the onset of diseases, the leading place among which is cardiovascular pathology: hypertension, atherosclerosis, ischemia, heart attacks, etc.

The essence of the influence of movements on the body is as follows. Movements, even relatively simple ones, are carried out with the participation of a large number of muscles (for example, about 90 muscles are involved in the act of breathing). The work of some muscles is aimed at ensuring the main motor act (purposeful action), the contraction of others helps to ensure that the movement is coordinated, the activity of the third muscle group creates the most favorable body posture for this movement by distributing muscle tone.

Locomotor activity is a process in which not only muscles are involved, but also many parts of the nervous system from peripheral nerves to the higher centers of the cerebral cortex. Signals appear in the working muscles that have a stimulating effect on the central nervous system, supporting the performance of the nerve centers. The systematic flow of such signals has a positive effect on the development and functions of the brain, the state of the autonomic nervous system.

Sensory organs - analyzers take part in the organization of movement as an apparatus of control and information. The cardiovascular, respiratory, endocrine systems, digestive organs, excretions, etc. are involved in providing movements with everything necessary. The more varied the motor activity, the more perfect the structure of the body, the higher the level of functional capabilities, and longer life. For example, the lifespan of different species of animals, approximately the same in size and weight, depends on the lifestyle: the rabbit lives on average 5 years, the hare - 15; mouse - 2 years, bat - up to 30; cow - 20-25, horse - 40-50. Life expectancy is proportional to the degree of physical activity.[2]

For the normal functioning of the brain, it is necessary that impulses from various systems of the body come to it, the mass of which is almost half of the muscles. Muscle work creates a huge number of nerve impulses that enrich the brain with a stream of influences that keep it in working order. When a person performs mental work, the electrical activity of the muscles increases, reflecting the tension of the skeletal muscles. The higher the mental load and the stronger the mental fatigue, the more pronounced generalized muscle tension. The connection of movements with mental activity is characterized by the following patterns.

During intense mental work, people have a concentrated facial expression, pursed lips, and this is all the more noticeable, the stronger the emotions and the more difficult the task that has to be solved. When trying to assimilate any given material, a person unconsciously contracts and strains the muscles that flex and straighten the knee joint. This happens because the impulses coming from tense muscles in the central nervous system stimulate the activity of the brain, helping it

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maintain the desired tone. Activities that do not require physical effort and precisely coordinated movements are most often accompanied by tension in the muscles of the neck and shoulder girdle, as well as the muscles of the face and speech apparatus, since their activity is closely related to the nerve centers that control attention, emotions, and speech. If a person writes quickly and for a long time, the tension gradually moves from the fingers to the muscles of the shoulder and shoulder girdle. By this, the nervous system seeks to activate the cerebral cortex and maintain efficiency. Prolonged work becomes addictive to these stimuli, the process of inhibition begins, performance decreases, since the cerebral cortex is no longer able to cope with nervous excitement and it spreads throughout the muscles. It is possible to extinguish it, to release muscles from excessive tension with the help of active movements, physical exercises.

RESULTS AND DISCUSSIONS

The tone of the nervous system and the performance of the brain can be maintained for a long time if the contraction and tension of various muscle groups rhythmically alternate with their subsequent stretching and relaxation. This mode of movement is typical for walking, running, skiing, skating, etc. Successful mental work requires not only a trained brain, but also a trained body, muscles that help the nervous system to cope with intellectual stress.[5]

Stability and activity of memory, attention, perception, information processing are directly proportional to the level of physical fitness. Various mental functions largely depend on certain physical qualities - the strength of speed, endurance, etc. Therefore, properly organized physical activity and optimal physical activity before, during and after the end of mental work can directly affect the preservation and increase of mental performance.

Normal vital activity of the body is possible only with a certain organization of various muscular loads, which are constantly necessary for human health. It is a combination of a variety of motor actions performed in everyday life, movements, organized and independent physical culture, sports and the term "physical activity". [3]

It is the level of physical activity during the holidays that reflects the natural need of young people for movement.

The specific part of physical education contains the solution of motional problems: the formation of physical qualities, abilities and skills of motion control, as well as the possibilities of rational use of physical potential.

It is possible to show the influence of physical exercises on the mental development of children with the normal development of the child's body. If you think that it is possible to choose exercises only for training brain activity, then you are deeply mistaken. This has long been proven by science.

Exercise has an indirect, but irreplaceable, positive impact on a child's successful intellectual development. Stimulating the development of the child's body towards the logical mind at first (initial school years) can bring an advantage over peers in this area, but over time this advantage will decrease due to the poorly developed physical body.[3]

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The main feature of the human body is that it grows and develops, and these processes can only take place successfully with regular physical activity. The optimal routine of physical activity should consist of morning exercises, outdoor games and activities, as well as light physical activity in the evening.

The lack of the necessary minimum of movements indirectly has a very negative effect on mental development. This is expressed in such tendencies: breathing becomes shallow, the metabolic rate in the body decreases, blood stagnation in the legs is observed, which leads to a decrease in attention, weakening of memory, and a decrease in the speed of mental operations.

Physical activity will contribute not only to the development of a healthy body:

- An active lifestyle enhances capillary blood circulation, which contributes to the flow of nutrients to all organs and systems of a person. The brain is no exception, active blood circulation enhances brain activity.
- The brain receives nerve signals from receptors located throughout the body. Exercise increases the flow of nerve impulses to different parts of the brain, which helps it develop harmoniously.
- For the successful functioning of the brain, nutrients are needed, which can only be obtained through the digestive system, which works much more efficiently after light physical activity. Improves appetite, liver and kidney function.

Exercise is undoubtedly very beneficial for mental development.

The use of physical exercise as a means of active recreation.

Distinguish between passive and active rest, associated with motor activity. Physiological examination of active rest is associated with the name of I.M. Sechenov, who for the first time showed that changing the work of some muscles by the work of others better contributes to the restoration of strength than complete inaction.

This principle became the basis for the organization of recreation in the field of mental activity, where appropriately selected physical activity before the start of mental work, during and after it has a high effect in maintaining and increasing mental performance. [4]

No less effective are daily independent physical exercises in the general mode of life. In the process of their implementation, a "dominant of movement" appears in the cerebral cortex, which has a beneficial effect on the state of the respiratory and cardiovascular systems, activates the sensorimotor zone of the cortex, and raises the tone of the whole organism. During active recreation, this dominant contributes to the active course of recovery processes.

An active lifestyle enhances capillary blood circulation, which contributes to the flow of nutrients to all human organs and systems. The brain is no exception, active blood circulation enhances brain activity.

Nerve signals from receptors located throughout the body enter the human brain. Exercise increases the flow of nerve impulses to different parts of the brain, which helps it develop harmoniously.

Morning hygienic gymnastics is the least difficult, but quite effective form for accelerated inclusion in the working day. It

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speeds up bringing the body to a working state, increases the flow of blood and lymph in all parts of the body and speeds up breathing, which activates metabolism and quickly removes decay products that have accumulated overnight. Systematic exercise improves blood circulation, strengthens the cardiovascular, nervous and respiratory systems, improves the activity of the digestive organs, promotes more productive activity of the cerebral cortex. [4]

Daily morning exercises, supplemented by water procedures, are an effective means of increasing physical fitness, fostering will and hardening the body.

Dynamic exercises such as jogging, skiing, cycling, swimming involve a large amount of mechanical work that requires significant energy consumption. Physical activity intensifies metabolism and significantly increases blood circulation.

When performing muscular work, the heart is forced to throw out many times more blood into the vascular system than in a calm state. The pressure in the central blood vessels increases, which greatly increases the speed of blood flow throughout the body.

The work of scientists in recent years has shown that during physical activity, the intensity of blood circulation in the muscles increases several times, and in the brain - only by a few percent.

In a healthy body, the risk of overfilling the brain with blood is excluded. This is facilitated by a reliable defense system that passes to the nerve cells as much blood as is necessary for their normal functioning.

Thus, the effect of intense physical work on the brain is manifested in the activation of the functions of the corresponding defense systems, which is the most important condition for training them and increasing their efficiency. The special value of dynamic exercises such as running, skiing, backpacking, etc. lies in their diversity. They contribute to the expansion of the range of actions of the protective and adaptive apparatus of the brain.

CONCLUSION

So, physical culture is presented as the most important basic component of the formation of the general culture of a person.

1. Regular physical education and sports are the universal means that can help everyone resist the tense rhythm of life, neuropsychic overload, including mental work.
2. Even simple techniques of self-control before starting regular physical education and sports can reveal the degree of adaptation of the body to physical activity.
3. The concept of the nature of health is a continuum, where at one pole is the point of view that health is the absence of diseases, the ideal state of well-being, the property of people that can be used without caring about it at all; on the other - health as a sustained balance, as a "tool for use in the environment in which we live".

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EFFECTS OF TRAINING ON THE BRAIN

Exercise bike	the best tool against stress
Running	relieves depression, helps to overcome laziness, overcomes fatigue
Cardio exercise	enhances a passion for reading and learning.
Heavy exercise	helps to focus
Aerobic exercise	increases the ability to acquire knowledge and has a positive effect on increasing self-esteem
Swim in the morning and in the evening	gives cleanliness and lightness, evening swimming strengthens nerve fibers
Regular exercise	helps to get rid of insomnia
Every physical exercise	produces the hormone of happiness in our body

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Innovative Pedogogical Technologies For Training The Course Of Physics

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ABSTRACT

The article discusses the use of innovative technological methods in teaching physics, the combination of information technology, modern pedagogical technologies and interactive methods to improve the effectiveness of teaching. This article is intended for physics teachers, professionals, and students.

KEYWORDS

Information technology, interactive method, innovative pedagogical technologies, technological developments, laboratory, modern laboratory equipment.

INTRODUCTION

The task of modern education is not just to communicate knowledge or to turn knowledge into a tool for the creative development of the world, at the present stage of development of society, the requirements for the preservation and development of the student's personal qualities, the development of his creative potential and intellect, life value orientations come to the fore.

The question of how to purposefully develop the intellect of a student, his creative thinking, form a scientific worldview and an active life position, using special pedagogical means, remains open. This is the number one problem of modern innovative searches.

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In innovative processes, the goal of learning is to develop students' opportunities to master new experiences based on the formation of creative and critical thinking, to provide conditions for such development that would allow everyone to reveal and fully realize their potential: physical, spiritual and intellectual.

MATERIALS AND METHODS

Let's define the term innovation processes from a historical and scientific point of view:

An innovation is an implemented innovation that provides a qualitative increase in the efficiency of processes or products in demand by the market.

The term "innovation" comes from the Latin "novatio", which means "update" (or "change") and the prefix "in", which translates from Latin as "in the direction", if translated literally "Innovatio" - "in the direction of change" ... The very concept of innovation first appeared in scientific research in the 19th century. The concept of "innovation" received a new life at the beginning of the XX century. in the scientific works of the Austrian economist J. Schumpeter as a result of the analysis of "innovative combinations", changes in the development of economic systems.

Innovation is not just any innovation or innovation, but only one that seriously increases the efficiency of the current system.

Accordingly, it is necessary to clearly define and differentiate the concepts of "innovative educational technologies" and "innovative education". In this way:

Innovative educational technologies and programs are any educational technologies that are the result of the innovative activity of teachers who created and developed them;

Innovative education is only those innovative educational technologies and programs where the result of the innovative activity of teachers is the creation (generation) of innovative ideas by the students.

Innovation in education, understood in a broad sense as the introduction of a new, change, improvement and improvement of the existing one, can be called an immanent characteristic of education, arising from its basic meaning, essence and significance.

The main functions of the teacher's innovative activity include progressive (so-called defect-free) changes in the pedagogical process and its components:

1) Change in purpose;
2) Change in the content of education;
3) New teaching aids;
4) New ideas of education;
5) New ways and techniques of teaching, development, education of younger students, etc.

Depending on the area in which innovation processes take place, the following innovation processes can be distinguished:

1) In the content of education;
2) In technology;
3) In the organization;
4) In the system and management;
5) In educational ecology.

Innovative technologies for teaching physics (research, play, discussion, etc.) should include such types of student activities that are

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characterized by their subjective position in the lesson, since the activities of students in the lesson are determined not only by the content and structure of physical knowledge, but also by their individual needs and interests.

The methodology of using innovative technologies for teaching physics will be effective if they ensure the full inclusion of students in cognitive activities in the lesson, which involves independent receipt and analysis of results, an interactive form of organizing search activities, a positive emotional attitude of students to the content of the lesson and their orientation towards achieving success in educational activities.

The science of molecular physics studies the phenomena associated with the interaction and collective motion of a large number of particles (molecules, atoms) that make up macroscopic systems in various states of aggregation. Students should be familiar with the methods and models used in the study of this section of general physics, have theoretical and practical knowledge and skills sufficient for a successful assessment in their field in the future. 'Ladi. Advances in molecular physics have led to the development of various fields of science and technology, such as the explanation and study of atmospheric phenomena, the illumination of gas discharge processes, the field of vacuum and cryogenic technology, and biology with kosmosis and capillary action in living organisms. can be used in the study of related processes, in the production of compounds and alloys with various parameters, in thermodynamics, chemistry (gas laws), in the analysis of statistical processes and in many other areas.

RESULTS AND DISCUSSIONS

The following requirements apply to the knowledge, skills and abilities of students in the natural sciences. Student shoud know:

“Although the laws governing atoms and molecules are the laws of quantum mechanics, most of the properties of bodies are not related to the quantum nature of atoms and molecules, but to the fact that they contain an excessive amount of atoms and molecules. know the causes of surface tension forces and capillary phenomena on the surface of a liquid;

- To be able to calculate the parameters of the gas state for a given state, the change in the internal energy of the gas in various processes, the work done, the amount of heat received or transferred, the thermal signature of the gas corresponding to certain conditions, using the laws of an ideal gas and the equations of state of an ideal gas. be able to count and find their names;
- To know the number or proportion of gas molecules moving in a certain range of speeds, the reasons for migration in gases and liquids, the values of the migration coefficients, the average free path of molecules and migration, be able to know the values of the coefficients, which causes the difference between the states of an ideal and a real gas, calculate the state parameters real gas based on the knowledge gained;
- Be able to explain the basic laws of thermodynamics, the principle of operation of heat engines and their maximum efficiency, explain the causes of anisotropy in the phenomena of crystals, calculate the parameters of crystal unit

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cells, determine the planes and directions of crystals, the quantum theory of heat capacity of solids and have skills.

We will consider the use of modern technologies using the example of the plot of the movement of objects shot at an angle to the horizontal and relative to the horizon In the lectures.

The technological map of the course is presented in the following table:

Subject	**The movement of the object horizontally and at an angle to the horizontal**	
Goals and objectives	For the teacher: -Formation of the necessary knowledge on the subject; -Overview of technology and literature on the topic; -Increase student activity.	For students: -Get information on a new topic; -Explore new concepts on the topic; -Increase in self-activity.
Content of training materials	The movement of objects at an angle to the horizontal and to the horizontal. Flight range, maximum climb balance, ascent time, flight time, normal, tangential and full acceleration. The speed of an object at an arbitrary moment in time, the radius of curvature of its trajectory, the angle relative to the horizon.	
Learning technologies	Forms: lecture, collective, pair; Methods: discussion of baxs, BBB, cluster; Methods: explanation, speech technique; Tools: multimedia, drawings, visual aids; Control: supervision, mutual control; Rating: rating.	
Expected results	For the teacher: Achieving the expected result, the formation of the necessary knowledge on the subject, to establish independent learning of students.	For students: get the necessary knowledge of the subject, have a complete understanding of the movement of objects, shot at an angle to the horizon and to horizon, understand the concepts. study
Analyzing the results and making changes	Search for new technologies for the next lesson, preparation of new visual aids and materials, independent creative assignments, increasing the activity of students.	

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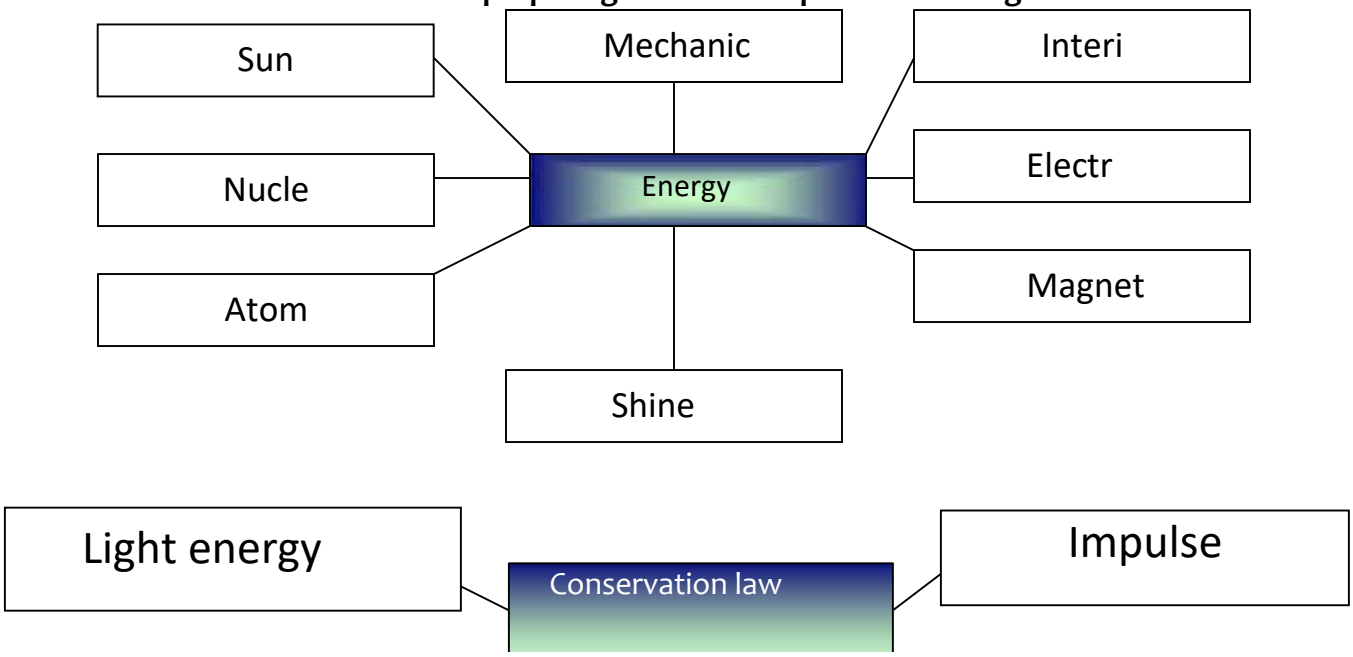
It is advisable to organize the lesson according to the following plan:

1) The movement of an object shot at an angle to the horizon
2) Maximum lifting height
3) Flight range
4) Climb time and flight time
5) Radius of curvature
6) The movement of a horizontally shot object
7) Flight time
8) Flight range
9) Normal, tangential and full acceleration

Educational technologies improve the efficiency of solving physics problems.

Methods of preparing students for problem solving:



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Below is a flow chart of a physics course on solving problems related to the law of conservation of mechanical energy.

1.	Subject:	Solving the problem on the topic "The Law of Conservation of Mechanical Energy".
2.	Goals, objectives	Explaining to students the goals and objectives of problem solving. Broader understanding of the practical meaning of the law of conservation of energy. Students will be able to master the handouts on the topic individually and in groups, as well as control the level of mastering the texts of the handouts through conversational discussions. Assessment of knowledge.
3.	The content of the learning process	Explaining to students the general aspects of problem solving and the specifics of each topic. Enumeration of algorithms for solving problems related to the law of conservation of energy, as well as analyze each sequence in the algorithm with students, draw conclusions. Solving the problems in several ways and geting the same result. Creatively adapt to the content of the problem in a new context arrange and work independently.
4.	Technology of implementation of educational process	Method: oral presentation, conversation discussion. Form "Networks" and "Computer technologies": practical exercises in small groups and teams. Tool: handouts, texts. Method: drawings, computer slides.

Each lesson of the subject studied by the teacher, as well as the above flowchart for each lesson, allows him to present and understand the subject as a whole (for one semester, one academic year), the beginning of the entire educational process, helps them see the goal and the achieved result. In particular, the construction of a technological map, focused on the abilities and needs of the student, brings the teacher, as a person, to the center of learning. This improves the effectiveness of training.

Consideration of students as individuals in the learning process, the use of various pedagogical technologies and modern methods allows them to think independently, freely, creatively, responsibly, conduct research, analyze, effectively use scientific literature, and most importantly, enhances their interest in science and their chosen profession.

Achieving such a result requires the use of innovative technologies in practice, in the learning process. They are very different. Let's

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dwell on some of them. The modern methods presented in this article, as well as technological trainings that help increase the effectiveness of learning, help students develop the ability to form logical, intellectual, creative, critical, independent thinking, become competitive, mature professionals and develop the necessary professional qualities.

Technological map of laboratory works in physics.

Subject:	Determination of the focal length of the converging and diffusing lenses.
Objective Tasks	Informing students about the types of lenses, their using, about disadvantages and conducting experiments. Study of methods for determining the focal lengths of lenses, calculation of lens parameters.
Content of the educational process	Lens. Lens type, basis of optical instruments, lens position in microscopes. Formula for calculating the focal length of a thin lens. The Methods for creating an image of an object on collecting and diffusing lenses.
Technology of implementation of educational process	Method. Oral presentation. Conversation discussion. Form: Laboratory. Working in groups and teams. Medium: convex and concave lenses, light source and object, optical base, screen, ruler and caliper. Method: Based on finished devices and drawings. Control: Verbal control. Calculation of results. Counting errors. Self-control. Evaluation: Based on a reward points system.
Expected results	Teacher Students will be able to cope with laboratory work in a short period of time. Increases studencheskuyu activity. This causes students to be interested in the lesson. At the same time otsenivaetsya bolshinstvo studentov. They dostigayut postavlennoy pered soboy tseli. Student Acquires new knowledge. Ustroystva razvivayut ability to work with instruments. Nauchatsya works individually and in groups. Conversation improves. Learn self-control. The ability to remember increases. Get a lot of information for a short period of time.

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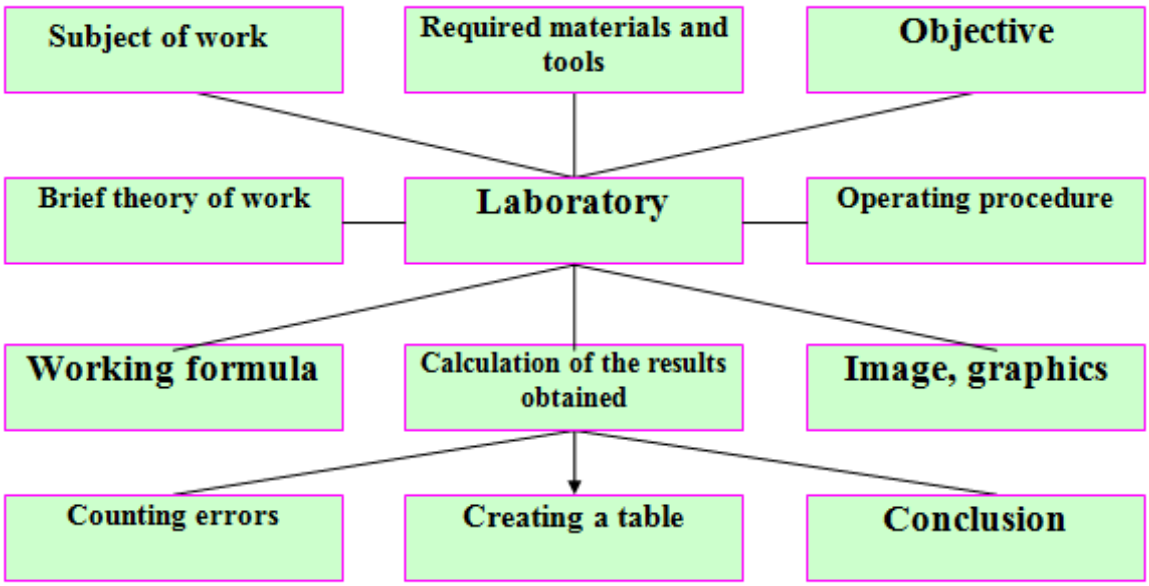
Future plans	Teacher Working on yourself to apply methods and technologies to engaging students in science in the classroom. Linking the topic to everyday life and applying it to science and technology. Improving pedagogical skills. Student To learning to work independently with literature. Be able to freely express your opinion. Computer observation and results of materials related to this laboratory. Developing the ability to come to a decision by analyzing your own opinion and opinions

The procedure for carrying out laboratory work and reporting.



CONCLUSION

The use of modern technologies in education plays an important role in improving the quality of education. The implementation of the national curriculum requires improving the quality of education. In this regard, modern technologies penetrate into various fields of education.

Methods of applying modern technologies in the process of teaching physics were demonstrated. The use of modern technologies increases the activity of students and thereby stimulates them to acquire in-depth knowledge. Also, the practical application of theoretical knowledge helps

them develop skills, develop creativity and develop the ability to work independently. This, in turn, gives them the opportunity to use them in their future activities.

The use of modern technology in all types of lessons, including lectures, practical exercises and laboratory exercises, allows students to gain solid knowledge.

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The Issue Of Harmony In Central Asian Architecture

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ABSTRACT

In this article, the author analyzes the specific scientific and spiritual law of medieval oriental architecture, as well as the similarity of building methods and the peculiarities of architectural style and artistic symbols, creating a form that ensures the harmony of shapes and is the basis for geometric analysis. The differences and similarities of ancient monuments in Uzbekistan are also shown. In particular, the constructions of ancient buildings in Shakhrisabz, Samarkand and Khorezm.

KEYWORDS

Art, architecture, harmony, law, building decorations, patterns, expediency, artistic emblem, decor, style, method.

INTRODUCTION

The art of architecture, as the literary philosopher Abdullah Sher points out, was originally derived from man's need for a place to live, but his divine aesthetic nature demanded that it become more and more beautiful. This requirement was later applied to the post-mortem "abode" - the mausoleum. After that, the palaces of the rulers, the offices, various official and unofficial service buildings, temples were built according to this law of beauty. These include the Al-Humro Mosque in Spain, the Cologne Mosque in Germany, the Nurillaboy Palace in Khiva, and others. [1] Over the centuries, we consider the name as a work

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that has acquired the meanings of body-like, harmonious, harmonious in form, perfect, perfect in all respects, and specially designed for a real example of architectural monuments.

METHODOLOGY

The art of architecture has a very ancient history. These palaces, pyramids, madrasas, some dorilfuninu* minarets and other monumental buildings, built in harmony with the genius of the architect, are unique and priceless treasures that testify to different periods of human development.

The unexplained historical puzzles of architectural heritage are still innumerable. In particular, one of the important issues is to determine the order of geometric harmony of shapes.

In his treatise on the theory of poetry, Ibn Sina called his fundamental work on the laws of the art of poetry "Al-Qanun", and Abu Raykhan Beruni called his book on astronomy "Masud's Law". Our great philosophers Abu Nasr Farobi, poet and artist Sodigbek Afshor called his treatise on fine arts "Qanun as-suvar".

Similarly, the field of architecture had its own "Laws". These laws contained basic criteria that were considered important for a particular scientific and spiritual field.

The word "law" itself is derived from the Greek word "kanna", which means a measuring stick. Therefore, as a constant tool of architects, as a standard of measurement of gas used in architecture, later the work in all areas became the "law" that determines the order.

There is also some historical evidence that there was some kind of specific architectural "law" that defined a special geometric harmony in the countries of the ancient East, Egypt, Greece. The remarkable and perfect architectural monuments of those countries are connected with the notions of harmony. Many books were written and researched about these monuments, but the secrets of architectural law, which were the original source of geometric harmony in them, have not been revealed. [2]

RESULTS

The most common and fundamental type of art in which the concept of harmony is manifested as architecture. The beautiful buildings, built with a wonderful harmony in the national architecture of the East, have fascinated people for centuries and evoked aesthetic pleasure in them.

Mosaic collections were used in the 14th century in the tombs of Abu Sayyid Mekhnavi and Turabek Khanum in Old Urgench. The combination of color patterns with brick patterns in them was widely used at the first time. At first they appeared in Khorezm, then in the cities of Mavoraunnakhr. The best examples of them are preserved in addition to the Turabekkhanim Museum in Old Urgench, the White Palace in Shakhrisabz and the monuments of Timur and the Temurids in Samarkand.

By the end of the fourteenth century, a single art school had already been formed from a community of locals and newcomers. As a

* Dorilfunun (Arabic) is the name of an educational institution in the Middle East. In some countries (for example, Iran), a secondary school is used, and in some countries (such as Turkey), a university is used as a university. It was also used as a university in Central Asia in the 1920-30y.

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result of the synthesis of art (except for sculpture), the best works of the period – the mausoleum of Gor Amir, Bibikhanim Mosque, a number of mausoleums in the Shakhizinda complex were created. In addition to beautifying the front, they used wall paintings in the interiors, gold reliefs in the form of paintings, medallions, flowers, creating an artistic harmony of the material. The success of the interior and exterior of the buildings was directed to a general law of harmony of decorations. Therefore, it is safe to say that the category of harmony plays an unequal role in the transformation of architecture into an art form. Because it always reflects as the highest aesthetic feature in improving the architectural environment. This explains the existing concept of aesthetics called architecture with the category of harmony between this feature. The development of patterns coincides with the study of mathematics and other exact sciences in the Eastern Muslim world. Moreover, the study of the proper placement of parts i.e. geometry has become widespread in architecture. In the practice of training strong architects, it was considered necessary to study these methods. Architectural monuments in Bukhara have been preserved from the X century to the present day. [3]

Harmony is seen in medieval Eastern architecture as a formative, form-processing method that ensures the existence of shapes, and as a key to geometric analysis by systematizing the proportions of shapes. Because it is a unique graphical framework that is extremely necessary in coordinating the forms of project design being developed for the architect. Harmony combines different dynamic squares and their derivatives into a single center through straight and diagonal axes, creating a specific graphic matrix to create and align the architectural form. In this case, the architect, based on the part, makes a plan of the built building and makes the necessary design calculations. This ultimately creates the appropriate dimensional shape of the building. Without harmony, a building cannot be a masterpiece of art, it will remain as one of many ordinary buildings. There is no doubt that the Uzbek architecture was influenced by various architectural traditions, such as Arab-Islamic architecture, Persian, Azerbaijani architectural methods, etc. It is no exaggeration to say that the architecture of Amir Temur and the Temurids in Uzbekistan is the pinnacle of the art of the Islamic region. The architecture of this period began with the mausoleum of Akhmad Yassavi in modern Kazakhstan, the mausoleum of Gori Amir in Samarkand and even the great surviving buildings in Herat, Bukhara, Tashkent and others. ends with monuments. Geometric patterns played an important role in the architecture of the X-XII centuries. The architecture of this period begins with the mausoleum of Akhmad Yassavi in modern Kazakhstan and ends with the mausoleum of Gori Amir in Samarkand and even the great surviving buildings and other monuments in Herat, Bukhara, Tashkent. Geometric patterns played an important role in the architecture of the X-XII centuries.

The encyclopedia of the life and work of Amir Temur, Zafarnoma, written by the great scholar Sharafiddin Ali Yazdi, says about the Aksaroy: "... on the pleasant and captivating soil of Kesh, where the fragrance of the flowers and the taste of the water come from. He set up the throne here with the intention of resting, singing the hymn of joy. He ordered

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the construction of the Shakhrisabz fortress. Inside the city, a palace was built in accordance with the decree, which was unquestionably executed. [4]

They laid the foundation of such a magnificent building that it has two towers, a high and a wide ridge, the circumference of the dome is thirty feet to thirty feet, and the dome is twelve feet to twelve feet. On the qibla* side of the large dome of the chorsupa* at the top of the enlightened tomb, there is a house-church where people gather on both sides, and two other chorsupa, each (size) of thirteen and a half gasses. The walls and the dome of the mausoleum were to be decorated with tiles, and the tomb with white stone.

"Even though Gardun, an old engineer, had traveled around the world for so many years, he had never seen such a beautiful building before. The building was so high and extraordinarily attractive ..." [5]

Historians say that the Amir Temur Mosque, named after Bibi Khanum, was the most unique monument built by the great Temur and the Temurids. Such a majestic mosque has never been seen before. It was built by Amir Ali Temur in 1399-1404 in honor of the conquest of India.

Commenting on the history of its construction, historian Ali Ghiyosiddin writes: "On the fourth day of the holy month of Ramadan (80 May 10, 1399), he (Amir Temur) chose the best place in the capital city for the mosque. Well-known masters and architects designed this huge building and immediately began to lay its foundation ..." [6]

Its total area was 167 x 109 meters, with tall buildings in the corners. The mosque has come down to us almost in ruins. Only the lower part of the northwest tower has survived. The foundation of the mosque is made of stone; the walls are made of baked bricks. Today, it consists of 6 unconnected architectural pieces: a high-rise building with an altar in the courtyard, a small copy of it on either side, a split roof of the mosque at the bottom, and a separate minaret in the northwest. Previously, these pieces in the mosque were combined with three rows of white marble, lightly arched porches with columns, and on top of them were 400 domes. The body of the columns, each 3.5 meters apart, is decorated with carved patterns, and the top is decorated with colored tiles and muqarnas*. There are four porches, each with an outer gate. Marble slabs were laid on the courtyard of the mosque in accordance with the law of harmony. There is a roof at the entrance. The upper part of the roof collapsed

* The qibla (Arabic: قِبْلَة, romanized: qiblah, lit. 'direction') is the direction towards the Kaaba in the Sacred Mosque in Mecca, which is used by Muslims in various religious contexts, particularly the direction of prayer for the salah. The Kaaba is a sacred site built by the prophets Abraham and Ishmael, and its use as the qibla was ordained by God in several verses of the Quran revealed to Muhammad in the second Hijri year. Prior to this revelation, Muhammad and his followers in Medina faced Jerusalem for prayers. Most mosques contain a mihrab (a wall niche) that indicates the direction of the qibla.

* Chorsupa - clay platform for sitting or lying.

* Muqarnas (Arabic) - a type of architectural decoration; an intricate shape formed by the overlapping of arched bowls (nests). It is widely used in architecture to decorate the top of the altar, rafters, shelves, etc. Which have a base of 4,6,8 corners, in the form of a dome, a semi-dome, the space between the walls and ceilings of buildings, the head of columns and so on. Initially simple in shape, it later took on a complex appearance and began to be used for decorative purposes.

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during the 1897 earthquake, the rest is 33 meters high and 46 meters wide. The roof is extremely majestic, with an 18.8-meter-wide arch in the middle. The side towers are higher than the roof. On the inside of the roof there is a smaller second porch. It had a carved marble-framed gate. The double-layered gate is made of seven different metal alloys – "khafta jush", which later disappeared. It is said to have been taken away by the Russian colonialists. There were two spiral staircases on the side wings of the roof. Up the stairs - to the arched platform, which leads to the tower. The wide surface of the roof is decorated with glittering tiles, colorful, shield-like patterns. The main altar building of the mosque gives a very good idea of the architecture of the time of Amir Temur, the style of harmony in it. The main building has a roof on the side, a porch in the center and two polygonal towers in the corners. The room behind the roof is lined with simple but majestic hand-painted shapes. The main patterns are made of clear, lavish bricks, the range of which is filled with blue rivets and white stones. Hand-painted shapes and intricate inscriptions, such as ivy, form an integral part of the building's decoration. The surface of the roof wall is covered with cross-section tiles. Two small tiled buildings, mainly a piece of decoration, flower stalks, flowerbeds, stems, buds and leaves are cut separately from a special piece of floor tiles and the pottery is placed together without leaving any gaps. These tiles, especially the nile-colored ones, shine like clear glass. The two small buildings with the altar next to the mosque are distinguished by the simplicity of the patterns and the coziness of the dome, although it is mainly a small repetition of the altar room. Gold embossed wallpaper was widely used in the interior of the mosque, along with decorative ornaments. The mosque is decorated with star-studded stars, three-tiered inscriptions with small muqarnas, and white stone frames. [7] From the harmony of an object one can distinguish internal harmony or harmony with external harmony or form harmony. The form of harmony of natural objects is more or less related to the content of harmony. The harmony of non-natural objects does not correspond uniformly to the content of harmony.

Looking at the architecture of Khorezm, medieval Khorezm masters were well acquainted with the columnar domed structures and used them in their practice (Kek Shabbaz Mosque). Khorezm Friday mosques are very unique. These are religious buildings, which have no portals, domes, courtyards, porches. Hypostyle halls are built with bars and flat columns have light structures (Friday mosques in Khiva, Khazarasp). Their columns and doors are decorated with unique carved patterns.

Khorezm towers are harmonious monolithic compositions decorated with a stalactic look. In them the lamp is not architecturally separated. The body of the towers is decorated with colorful decorative arches. By occupying the city, they create an expressive silhouette, emphasizing the compositional axis of the city.

CONCLUSION

In general, in the analysis of medieval monuments in Central Asian architecture, we see similarities in form and style of construction, as well as peculiarities in the style and artistic symbols of architecture. In particular, the monuments of Uzbekistan are distinguished by their harmonious

construction and design. Furthermore, the architecture of Central Asia laid the foundation for the development of the theory of geometric decoration based on the methods of harmony.

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Factors For The Development Of Aesthetic Education In Modern Pedagogy

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ABSTRACT

The music lesson is a leading scholar in the system of music education, because it covers sounds in a general way. Music lessons are different from other science lessons in that they are less artistically interesting and give children more creative pleasure, arousing emotional feelings and figurative experiences. Music, in particular, has a great positive effect on the mental and moral development of children.

KEYWORDS

Music, aesthetic education, music lesson, cognition, vocals.

INTRODUCTION

The teacher imparts knowledge to the students, guides the process of its reduction, checks and controls the actions of the students. These features provide a certain level of structure and consistency of the lesson. Before beginning the explanation, it is important to determine how well the students are prepared to master the new material and what knowledge they have. Teaching in the classroom is based on the general psychological characteristics of students from this group. The explanation is given to all

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students at the same time and what each student has the opportunity to be a teacher. As the child experiences the first relationship and knows what is around him, he begins to develop an aesthetic taste. The most intensive period of its formation is the school years, during which the child has the opportunity to regularly get acquainted with musical activities, his musical and creative abilities are actively developing. In educational work, the teacher draws the student's attention to the aesthetic qualities of life and art - music. It should be noted that a young person is more capable than an adult of direct emotional evaluation of everything he perceives. He simply decides whether he likes the choice or not. Gradually, the student develops a set of concepts that express personal recognition and goodwill. The fact that the child chooses the works that he likes more than others is an indication of his aesthetic taste. Aesthetic taste will be more specific and pedagogically controlled than other indicators of aesthetic maturity in the student. The teacher now has the opportunity to show the student that he or she will grow in the future based on his or her knowledge of artistic or, more broadly, musical-aesthetic preferences.

The student can answer the question of what kind of music they like the most. This music will be an indicator of the student's musical or aesthetic taste, and may even help him to understand his ideal, but there may not be concrete examples that represent the ideal. The instability of the concept of aesthetic ideal is characteristic of primary school children. The student may be interested in something as he learns. Adventure, interest in science fiction, passion for vocal and instrumental ensembles, passion for art television can be replaced by amateur art, and so on. At the same time, children develop the ability to evaluate the ideological and artistic content of the work, strengthen their interest in art and music. The task of music lessons is to teach children to be active in beauty, to have a creative approach to music. can be achieved. However, in the classroom, the understanding of music is the basis for all types of student activities. Understanding music is necessary for a full understanding of the life around you, because ultimately the ability to delve deeper into the essence of the work of art and the aesthetic thing in life contributes to the full development of the student's personality. Music lessons have the following tasks: to introduce students to the world of the great art of music, to teach them to love and understand music, along with its very rich forms and genres, in other words, to teach students music culture as part of their spiritual culture. The more active and purposeful a modern music lesson is, the higher the level of music education, not just music education. Music lessons are the basis of music education in primary school. The course consists of three interrelated sections: group singing, music literacy, and listening to music. These sections have recently been enriched by playing musical instruments, vocal improvisation, and movement to the sound of music.

One of the main tasks of music education for primary school students is to form an interest and love for music, to communicate with music, to enjoy music aesthetically, to understand its vital meaning. Children between the ages of seven and eight are not yet fully absorbed in music, nor are they able to reflect in their minds the musical image that is emerging today. At the same time, they can

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easily determine the general mood, notice the simplest means of musical expression, speed, enthusiasm, register. In order to organize an intensive and developmental complex of aesthetic education of the child in each school, it is necessary to eliminate the notion that the tasks and objectives of aesthetic education are one-sided. Understanding the beauties of the nature of our country, its surroundings, the beauties of relationships and science, the development of physical perfection has a much greater educational effect than just communication with literature and art. In order to develop children's understanding of music - the basis of music education - it is necessary to allow them to experience in practice the variety of emotions, often expressed in choral or instrumental music. Singing as a group also has the potential to have an aesthetic impact on the performers and the audience. It facilitates media communication through music in cohesive movements. It helps to unite many souls into one strong feeling soul. That is his great educational potential. It doesn't matter what kind of song they sing to bring up their children properly. It is important to use songs on topical issues, as such songs inform children about all the thoughts and feelings of our people, bring school life closer to today's events. All the students of the school sing songs about the holidays of our people, about childhood and youth. The beauty of Mother Nature and the hard work of the people associated with it also delight students. The whole class sings as a group. It is true that children who sing incorrectly at first interfere with the general song, the purity of the tones: but it should be remembered that children's ability to listen to music and voice, although not well developed, gradually develops in the process of learning. Vocal development is a long process. That's why we cannot deprive students of the opportunity to develop both by listening to music and by not having a good voice. The skills and competencies a student acquires are directly related to the age characteristics of his or her growth and cognition. The national education system plays an important role in improving the quality and effectiveness of lessons in educational institutions. Of course, this is an important psychological experience; first of all, it is caused by the decision of each person, the layers of this nation.

While teaching music lessons at educational institutions, it is highly beneficial that the classes are based on our national heritage. In the course of the lesson, especially by teaching songs that glorify Uzbek customs, the ideas of national mentality are formed in the minds of young people, reflecting on their traditions, dressing, and Uzbek cuisine. It is necessary to use national values wisely and develop the ability to feel the national tones, especially, in the process of spiritual upbringing of young people. If we want to glorify Uzbekistan, its ancient history and bright future, to keep it in the memory of generations, we must first of all bring up our great composers, great writers, great poets, great creators. As the great writer Chulpan said, the idea that a nation lives if literature lives is a clear example of this. Therefore, the art of music plays an important role in educating the younger generation. It is no exaggeration to say that the art of music is one of the rarest monuments of the national identity of our ancestors.

It should be noted that the Uzbek folk, classical songs and hymns are based on folklore or texts related to classical poetry. Poetic works

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created by representatives of classical literature are highly valued by our people as examples of high creativity.

In the course of research on the pedagogical basis of the organization of music and aesthetic education and upbringing through classical music, we are convinced that there are serious and unresolved issues in the organization and teaching of classical music in secondary schools. These include, but are not limited to:

1. Inadequate training of teachers in Uzbek classical and makam music in secondary schools;
2. Lack of special methodology to ensure the quality and effectiveness of the process of theoretical and practical study of classical music;
3. Lack of special sound library, visual and technical aids due to the priority given to singing and listening to classical works in school education;
4. Lack of popularization of experiments on pedagogical, methodical, didactic organization of lessons on classical music and creation of special methodical manuals.

Solving these problems creates an opportunity for the works of acquainting students with the art of Uzbek classical singing in secondary schools, and instilling in them a respect, love for national folk music, a desire to study them, and thus educating them in the spirit of national ideas and ideology to be effective.

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The Creation Of Electronic Educational Resources On The Subject "Ecological And Socio-Economic Problems Of Modern Energy"

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ABSTRACT

This article focuses on the negative impact of the development of modern energy on the environment and the problems of reducing and preventing this impact. The role of the education system in solving such a global problem and the use of modern information technologies are discussed in article.

KEYWORDS

Energy technologies, atmosphere, Earth's hydrosphere, lithosphere pollution, ecological situation, environmental energy, Google service.

INTRODUCTION

Society was able to satisfy its needs almost without compromising harmony with nature for many years when people's energy needs were relatively small. However, the situation has changed significantly with the growing industrial burden of humanity, which relies heavily on advances in energy technology. Changes in the chemical composition of the planet's atmosphere, pollution of the Earth's hydrosphere and lithosphere, the threat of the "greenhouse effect" on the Earth on a global scale, radioactive contamination of the region, the real threat of environmental disasters as a result of accidents at nuclear power plants, oil

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and gas production and oil refineries, complexes for the processing of chemical raw materials and radioactive waste - all this is not a complete list of phenomena that arise in the consequences of anti-environmental activities of energy facilities.

The modern world is faced with another serious problem that is relevant in addition to the difficult environmental situation at the same time. This is a question of ensuring the energy future of civilization.

The many regions of the world face severe energy supply challenges even today. On the whole, this has a very negative effect on the rates of their socio-economic development, leading to an increase in social, political, environmental and other contradictions in society. The limited reserves of mineral fuels, the continuous growth of the world's population, the steady growth of human needs for energy have highlighted the special urgency of the energy problem, putting it on a par with global problems such as the environmental safety of the modern world.

MATERIALS AND METHODS

The problem of correctly determining the socio-ecological prospects for the development of world energy has become a problem of the prospects for all mankind naturally. This task is to indicate one of the most important conditions for society to enter the path of sustainable development, which was discussed at the UN Conference on Environment and Development in Rio de Janeiro in particular (Brazil, June 1992 .).

A significant reduction in environmental energy conflicts can be achieved, provided that the energy needs of society are met and strict compliance with strict environmental protection requirements and savings in the use of natural energy resources at this stage. As a result of the analysis of possible ways to achieve this goal, the following can be singled out as priorities of the environmental strategy for the development of world energy in the early stages of overcoming the environmental and energy crisis:

- Improving the environmental performance of existing power systems and other energy and industrial facilities;
- Energy saving and rational use of natural resources;
- Improving the structure of theworld fuel and energy balance, mainly due to the increa se in the share of natural gas as an environmentally friendly fuel;
- Development and implementation of environmentally friendly technologies for the production and consumption of energy.

There is a figurative expression that we live in three eras of "economy, energy, ecology." ... At the same time, thinking about ecology as a science and image is attracting more and more attention of mankind.

The ecology is viewed as a science and educational discipline designed to study the relationship between organisms and the environment in all its diversity. In this case, the ecology means not only the inanimate world of nature, but also the influence of certain organisms or their communities on other organisms and communities.

The Modern ecology can be considered as a science that studies the interaction of organisms, including humans, with the

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environment, determining the degree and permissible limits of the impact of human society on the environment, as well as the possibilities for reducing or completely neutralizing this impact. From a strategic point of view, it is a way for people to survive and out of an ecological crisis that is global (or growing) on a global scale.

It is becoming more and more obvious that a person knows very little about the environment, about the mechanisms by which he lives, especially about the environment. Disclosure of these mechanisms (patterns) is one of the most important tasks of modern ecology.

Thus, the semantic, political, philosophical aspects of the term "ecology" acquired a social character. It is associated with the humanization of the natural and technical sciences and began to penetrate into almost all areas of knowledge, which is actively being introduced into the humanities. At the same time, ecology is viewed not only as an independent science, but also as a worldview designed to cover all sciences, technological processes and areas of human activity.

Thus, it is recognized that environmental training should be conducted in at least two directions through the study of special integrated courses.

Tht great attention is paid to respect for nature, cultural heritage and social preferences in addition to environmental education. The solution to this problem is also very problematic without serious general environmental education.

To improve the quality of education in this area, it is especially important to create e-learning resources aimed at studying the environmental, socio-economic problems of modern energy.

An electronic training resource is a training tool that helps to conduct lessons on the study of environmental, socio-economic problems of modern energy. This resource can be used to organize students' independent work in the study of theoretical materials, to organize practical and seminars, for leadership and self-government. It can include many software tools, from illustrative materials and hyperlinked text documents to laboratory object emulators.

An e-learning resource should solve the following tasks:

- Equipping the educational process with educational, methodological, reference and other materials that improve the quality of education;
- Development of a tool for planning and organizing work to improve the educational and methodological base of an educational institution;
- Providing one hundred percent equipment of the educational process.

An electronic educational resource developed on a specific topic reflects the modern level of development of science, a logical and consistent presentation of educational material, the use of modern methods and techniques to accelerate the educational process, deep assimilation of educational material by students. It should be able to acquire skills to use in practice.

The modern trends in the development of society are directly related to the development of the information environment. The 21st

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century is the century of informatization, which covers all spheres of activity, including education. According to the Concept of informatization of the education system in Russia for the period up to 2020, informatization is a fundamental and most important task at the present stage. In addition, the modern information society is rapidly becoming mobile. This means that access to information and services is provided to users constantly, regardless of time and location.

Priority development of the information space of mobile education requires constant access to electronic educational resources and services, including at an educational institution, at home, on the road. This applies to all participants in the educational process: students and their legal representatives, teachers, leaders of the education system. The mobility of each participant in the educational process is becoming a prerequisite for success in the new information society. To provide such mobility, "cloud" technologies have appeared, the leaders among which are various Google services.

Google Services is a holistic system that anyone with a Google account can access. These web applications require only a browser and an Internet connection from the user.

The organization of mobile education through the use of Google services has several advantages:

- Access to information from any device connected to the Internet;
- Independence from the operating system and software on the local computer;
- The ability to use various applications for free;
- Joint work with data for reading or editing;
- Efficiency.

Among Google services, the most popular and contributing to the solution of basic educational tasks, one can single out “Google Docs”, “Google Forms”, “Google Drive”, “Google Site”. These services allow not only to develop and provide access to electronic educational resources, but also contribute to the organization of communication and collaboration of students, help the teacher to monitor and evaluate educational achievements, remotely manage learning and create an individual learning strategy in accordance with the needs of all participants in the educational process.

1. Using the service "Google Docs" in the educational process.

Today there are many office programs that allow you to create documents, such as the Microsoft Office suite of applications. However, they make it possible to use a ready-made document or make changes to it only after obtaining individual access to it. These programs do not provide mobility of the process of creating and adjusting content.

Service "Google Docs" is a text editor that allows you to create and format documents, as well as work on them together with other users [8]. In the educational process, it will come in handy in the case when the teacher needs to draw up a congratulation on a holiday or an invitation to a parent meeting, write a short biography of all students in the class, write a mini-essay, draw up a reference outline, etc. This service does not require a special

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installation on a computer. To work with it, just go to "Google Docs" in the browser (service address —docs.google.com).

In addition to the capabilities of standard text editors, the Google Docs service has a number of additional advantages, the main of which are:

- Several users can work with a Google document at the same time, and they have access to them. They can make any edits to the document, edit it, leave their own comments about the content of the document, its design, communicate via chat in real time;
- The service supports a large number of popular formats (docx, pdf, odt, rtf, txt, html);
- When working with the service, the history of all edits ever made to the document is always saved, which is very important when correcting the content;
- It is possible to create and edit Google documents on iPhone, iPad and Android, which ensures the mobility of the process;
- If necessary, it is possible to work with the service in offline mode;
- It is possible to select access rights for each user or for individual groups. The service has three modes of collaboration on a document: editing, reading, commenting. Depending on what functions you assign to your students;
- Documents created in the service are automatically saved on Google Drive and can be viewed from any computer or mobile device (you just need to know the password to log into your account and have access to the Internet).

Google Docs is simple enough to work with. It has a conceptual interface and reference information with instructions for creating text documents. The service offers several steps in working with a document: creating a document; alteration; invitation of co-authors.

All documents presented in this service can be displayed on the page as a list or grid. In addition, for a faster search for the required material, all documents can be sorted by viewing date, by date of changes, by name.

The use of the Google Docs service in the educational process is not limited only to the collaboration of teachers and students. This resource can be used for joint methodological work of teachers within one or several educational institutions, for organizing joint thematic activities of parents, students and teachers, as well as for carrying out project and educational research activities within the framework of associations of interests or extracurricular activities.

2. Using the service "Google Forms" in the educational process

Google Forms is a feedback tool. With the help of the form, you can conduct various polls, quizzes, create questionnaires, tests. To do this, the user sets up a questionnaire with the required fields, sends a link to it to the participants and gets access to statistics based on the responses received. Forms can be designed to your liking, supplemented with images and videos. When you create a form, a Google spreadsheet is automatically created, which automatically accumulates the results of filling out the form. The table provides convenient options for storing and processing the collected data.

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The Google Forms allows you to create the following types of questions:

- The short text (the respondent is asked to enter a short answer);
- The long text (the respondent enters a detailed answer);
- One of many answer (the respondent must choose one answer from several);
- Several of the many (the respondent can choose several answers);
- Drop-down list (the respondent selects one option from the drop-down menu);
- Scale (the respondent should rate using a numerical scale, for example, from 0 to 10);
- Grid (the respondent selects specific points in a grid of columns and rows).

The main advantages of using the Google Forms service are:

- Ease of use, the interface is convenient and understandable, the form does not need to be downloaded, sent to your respondents and received from them by mail the completed version;
- Accessibility - the form is stored in the cloud and will remain accessible from any device, if there is a link;
- Individual design - the ability to create your own design for the form, choose a template from a large number of available ones or upload your own;
- Mobility - "Google Forms" is adapted for mobile devices. You can create, view, edit and send forms from your phone and tablet using a lightweight mobile with full functionality.
- Comprehensibility - "Google Forms" collects and professionally draws up statistics on responses, you do not need to additionally process the received data, you can immediately start analyzing the results.

CONCLUSION

In conclusion, we can say that the current level of scientific progress and existing developing technologies provide the basis for optimistic forecasts: humanity is able to overcome the risk of crisis, the risk of depletion of energy resources and environmental problems caused by intensive production. There are real opportunities to switch to alternative energy sources (inexhaustible and environmentally friendly).

Modern methods of obtaining energy from these positions can be considered as a kind of transitional. The question is how long this transition period lasts and what are the options for its reduction ...

The use of Google services plays an important role in the training of environmental and energy specialists, providing them with continuous professional development..

The using of the Google Docs service in the educational process is not limited only with the joint work of teachers and students. It can be used for joint methodological work of teachers, for organizing joint activities of parents, students and teachers, for carrying out project and educational research activities.

Google Forms is a feedback tool. With its help, it is possible to organize effective work to control the educational activities of students, to identify the educational needs of all participants in the educational process.

The Google Drive service is organically included in the educational process, making it more dynamic and effective. The service allows

organizing joint activities of teachers and students, makes it possible to work together remotely from each other, create a library of didactic materials and Olympiad tasks, methodological piggy banks to improve the efficiency of the educational process.

The service "Google Sites" allows any participant in the educational process to access the necessary information at a convenient time, will ensure the mobility of the educational process.

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Describe The Inconsistency Of Observational Results With Theoretical Models In Explaining The Evolution Of Planetary Disks

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ABSTRACT

This paper discusses the incompatibility of theoretical models and observational results, which is one of the most pressing issues in astrophysics today, and points out the shortcomings of theoretical models in the formation of planets as a result.

KEYWORDS

Planets, protoplanetary disk, accreditation, accreditation disk, planet formation.

INTRODUCTION

In planetary population synthesis models, some basic parameters of disk structure and mass growth rate are compared with observations. Such a comparison means, on the one hand, confirming the assumptions of the models and, on the other hand, that the current models need to be reconsidered.

Although it is now widely accepted that exoplanetary systems are not the same, scientists are debating how to explain their

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formation and diversity. In particular, one of the main shortcomings of this work is the correct explanation of the properties of protoplanetary disks, the location of the planets, in modern models of planetary formation.

In recent years, much effort has been put into models of disk evolution, planetary formation, and population synthesis. The exact properties of the disks during planetary formation, from the tiny grains of dust to the formation of life factors, and the precise process that regulates the transition from interplanetary to planetary nuclei, are still unknown.

ANALYZES

According to theoretical models, planets are formed from dust and gases in the disks around young stars. These discs are a natural result of the process of star formation, which means that all young stars can have a planetary system. Circular star discs evolve over millions of years, eventually spreading, and the process of nuclear accretion is compared to the time when planets formed. This means that the processes of evolution and proliferation of disks play a crucial role in the formation of new planetary systems and contribute to the development of interplanetary diversity.

Based on theoretical data, spectroscopy of young stars reveals a wide range of infrared wavelengths, continuous emissions, and storms around a rotating dust star that form a star and form planets around it at an evolutionary stage. [1] The process of planet formation is divided into the following stages:

1. Star formation.

2. Huge disk.

3. Protoplanetary disk.

4. Disk distribution.

We know from theory that the planet formed, formed, and spread in the protoplanetary disk phase. But observations show that there are large planets in the giant disk phase. [2]

This means that in the third stage of the theory, the planet is not formed but is formed in the second stage earlier. The protoplanetary disk does not form a planet in the phase, but the planets formed at this stage determine their location. Only observational and theoretical data are relevant in the first and final stages. In the first stage, the star is born, and in the last stage, it becomes a unified system.

Based on observational data, we divide young stars into two categories:

1. Classic stars.

2. Weak stars.

These data were obtained from spectral analysis of young stars and were based on the strength of the emission line.

99% of the dust and gas that forms around young stars is gas, 1% is dust. With the help of the Spitzer Space Telescope, we can study the location of nearby stars and make detailed observations of the system. Using a telescope, we can identify a population of young stars with dusty discs. The infrared photosphere has high emission power lines. [3]

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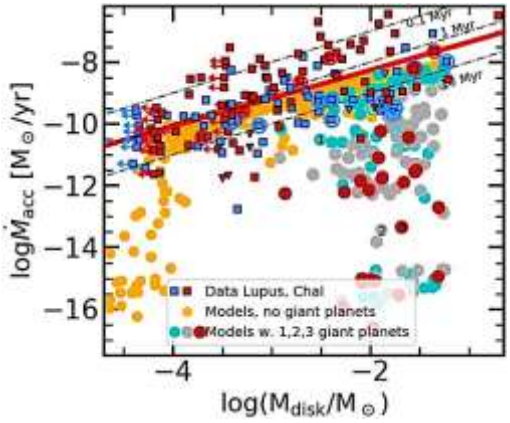

Figure 1

The blue circles indicate the level of mass accreditation and the mass of the disc for the population of discs observed in the location models of Lupus, red symbols and chameleon stars. Square-sized characters are disks with protoplanetary disk mass and mass accreditation speed; the poles are separated by squares showing the upper limits of the disk mass, the downward-facing triangles are separated by unknown accretors (the mass accreditation rate refers to objects corresponding to chromosphere emission) and the transition disks. The results are shown in red, which is consistent with the theory. Orange for giant planets, blue for one giant planet, gray for two giant planets, and brown for three giant planets.

Observations have shown that many theories about the four stages from the appearance of dust disks to the transition to the system state have not been proven. The following conclusions can be drawn from the observational theory: dust discs can form and spread in the first stage before the final stage. In this case, no system is formed around the star. The second step shows the exact fragmentation of the disks over time.

It should be noted that, the formation or initial evolution of an electron layer of longer wavelengths may be the result of the accumulation of the first dust or two generations of dust formed in a km-long interplanetary collision formed in a million years. [4]

We know that the planets were discovered around the stars of the main sequence. From the time of the giant disks to the time of the exoplanets, the synthesis models of the planetary population are finalized and developed based on the basic properties of protoplanetary disks.

If the disk mass around the young stars is 80% of the star mass, the lifetime of this model remains uncertain. That is, it will not work. However, 10% to 20% of the section is only suitable for models of disks with unformed giant planets. [5]

Strong photovoltaic winds cannot reproduce transitions when the mass of the planet's disks is 80%. [6]

Based on the data currently being discussed by world scientists and resolved as a result of observational data as opposed to theoretical data, we can say that if the mass of the disk is

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greater than the mass of the star, the propagation accreditation rate of the disk will be greater possible.

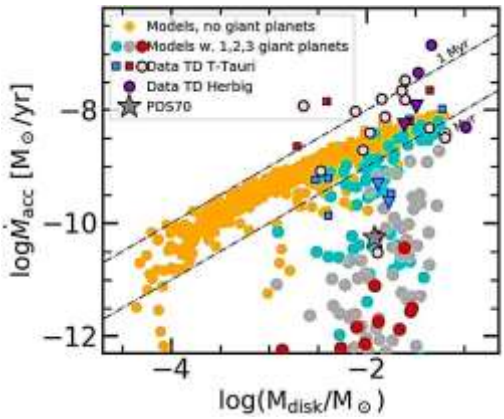

Figure 2

Here $M_{\odot}$ is the accreditation rate, M_{disk} is the disk mass that forms the planet. Empty circles are for transition disks. Pink characters Disks orbiting Tauri stars. Purple circles are for discs that revolve around the stars Herbig and Pinilla.

However, there are a number of important differences. We can see that the accreditation rate is equal to the distribution (90.9%) of the data at any disk mass instead of the main location of the models (~3). This happens in part. This is because the models presented in this study are not combined with the usual observation uncertainties.

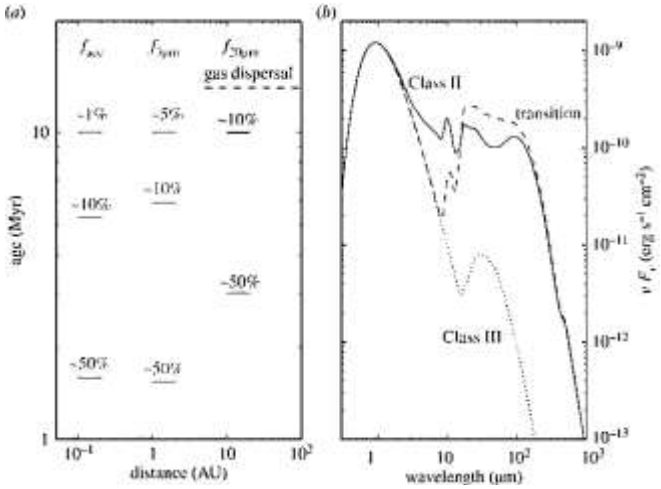

Figure 3

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A) The propagation time (dust and gas) of the rotating star disks and the distance to the star.

B) Category 2 full disk, transition disk and third stage broken disk are described. [7]

Based on these observations, we can understand a sharp decrease in accreditation rate and disk density during the transition to the exoplanetary phase. As the antigravity pressure increases, it moves toward the final stage and the disc begins to spread. This period gives rise to different periods depending on the differences in the masses of the disk and the star.[8]

Observations show that population models resulting from theoretical calculations can only be applied to medium-sized protoplanetary disks. The meridian dimensions of the bumodels show a lower value. At the same time, the ratio of disc mass differences is not the same when compared to theoretical models. This is because of the very small amount of dissociation that takes place over a viscous period of time.

In contrast to the models obtained from the observations in the models based on theoretical data, the real-time gaps in which the dust gaps are compared during the gas diagnostic transition did not take into account the limitations in the development and propagation of the discs. Observations show that there is a gap in the giant disk and protoplanetary disk phases that weakens the planet that falls into this space and disintegrates as a result of the disk's accreditation rate as it enters the protoplanetary phase.

CONCLUSION

Even the most advanced photovoltaic model of the theoretical model does not include all the solutions to the processes of planet formation. We need models that include hydrodynamics to determine the profile of stellar heating sources, disk chemistry, dust evolution, wind speed, transition periods, and emission directions.

The relative values of gas and dust in the disk play a key role in determining how the disk develops and propagates. The period of quantitative modeling of planets begins only after the quantitative indicators of disk propagation have been determined by observation-limited modeling.

Most theoretical models are suitable for smaller disks, which are smaller than expected. These models are not considered an important model on giant disks.

Observational and theoretical models have been widely developed in recent years, making it difficult to make classical views of disk evolution and distribution.

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Media Development Of Lawyers As The Tool Of Media Competence

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ABSTRACT

The article reveals the essence of the concepts of "Information and communication space" and "communicative potential" even only professionally make sense only in a society that acquires the features of the created information society, which is the heir to the postindustrial era.

KEYWORDS

Media, Social Networks, Media Competence, Internet technology.

INTRODUCTION

The information society, the noospheric civilization, the information space, cyberspace, the information environment, virtual reality - these words have become familiar not only in the pages of scientific and popular publications, but also in everyday speech. Mass consciousness strongly links these terms with computers and telecommunications. At the same time, computers and communications have at their disposal vocabulary and conceptual tools of the existential plan - they travel on the Internet, enter it, live in it. Writers and filmmakers, who have long been fond of this topic, regularly throw out another clone of the Lawnmower on the market. Programmer slang, and behind it the logical constructs of clearly "machine" origin, are increasingly being introduced into everyday life. There are new

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areas of artistic creativity and new genres related to computer technology, such as computer games, computer animations, which force us to recognize the fact of the birth of a special computer aesthetics and, perhaps, the formation of a virtual culture in general.

Philosophers, economists and political scientists talk about the transition to the information society, which should replace the post-industrial. This puts informational content on a par with the concepts of a global socio-political and economic plan.

It makes us treat computers and networks not only as technical achievements and means of simplifying the life of modern man, but also as distinctive beings that open up other life worlds to humanity.

Something similar happens with the perception of time - its marks, allowing to see the events in their sequence, the virtual computer environment as if erases and confuses. Information about the events of the past, stored on the Internet, is very different from the one we can get, flipping through the yellowed newspaper pages. Actualization of the past is carried out by referring to the appropriate information resource, and it immediately becomes on a par with the present. In other words, the time frame of the actual is arbitrarily extended, and the past, present and future (the future can be modeled with the help of modern prognostic tools) are just as arbitrarily rearranged.

It is clear that the computer not only transfers to some other point of the same space-time, but allows not only to enter another space, but also to re-create it, to build a new life plan.

What is the information society, in which, apparently, and we have to live?

The information society is a global economic, political, anthroposocial and technological project that involves a controlled civilization transition to a world social structure, in which the system of mass communications will play a dominant role in all areas of life. computer telecommunications technologies, in particular Internet technology.

The project, prognostic and scenic nature of the information society is manifested, in particular, in the formulation of national programs and concepts of transition to the information society, as well as programs for informatization of various sectors of activity, primarily science, education, management, politics, etc. P.

The concepts of the information society, for all their pragmatism and concreteness, are accentuated as utopias, anti-utopias and practicals (Alvin Toffler), i.e. orient themselves to a global ideal composed of the values of ecologism, humanism, anti-universalism, anti-totalitarianism, pluralism, priority of the spiritual and cultural over utilitarian, civilizational.

The technological dependence of the information society does not exhaust the deep philosophical, social and socio-political meaning of this concept. The doctrine of the information society reflects the transition of civilization from the industrial to the post-industrial phase of development. The concept of "post-industrial society" was introduced by Bell (1973) 1, in accordance with the periodization scheme of the historical civilization social process, involving three

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stages: pre-industrial (agrarian), industrial and post-industrial.

Post-industrial society is characterized by the following features:

1. the reorientation of the economy from commodity production to service;
2. Determination of intellectual technologies in the technological and production spheres;
3. the decrease in the significance and fundamental nature of material ownership in the system of values;
4. increasing the importance of knowledge as the basis of technological and socio-political structures of society;
5. the shift of semantic and axiological accents in the structure of social organization;
6. reorganization of the cultural sphere, implying an imperative orientation to the priorities of intellectualism and the transformation of the ethics and morality of the individual, self-determined through the awareness of oneself as a producer of knowledge;
7. the emergence of the dominant "university" (education, science) as a system-generating social factor.

Just as an enterprise (firm) has been a key institution in the last hundreds of years thanks to its role in organizing the mass production of goods-things, the university, or some other form of institutionalizing knowledge will be a central institution for the next hundreds of years thanks to its role as a source of innovation and knowledge.

The third period (2000-2003) - the commercialization of web media - was accompanied by the so-called investment boom. It was characterized by a change in market conditions, in particular, a weakening of the political component of information activities and the arrival of commercial firms in the network. This period can be called the dotcom period, when the market saw an effective PR-tool on the Internet and began to actively sponsor its own Internet projects.

The expanded construction of dotcoms recruited both new networkers and old-timers to the network. As a positive result of this period, it should be noted not only that a wide consumer audience was accustomed to the network, which was able to obtain information about the necessary goods and services optimally and quickly, but also the fact that the skills of designers, coders and speechwriters.

Formed a community of professionals Internet publications. Specialized itself professional activity in the network. The distinctions between the language and the style of the Internet publication were published from publication in any other information channel.

Characteristic of this period is also the emergence of many professional consulting, design and programming firms. They were focused on the creation and maintenance of Internet projects, as well as the emergence of new markets, such as the domain name market.

Many analysts believe that the dot-com crisis is prevailed by the transition to a new economic and information model, which is integrated in the ideology of Web2.0 services. Therefore, the fourth period of development of the Internet and Internet journalism can be called the period of Web2.0. Thus, it can be considered

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that the dotcom crisis created conditions for a new technological revolution in the network and a paradigm coup in the network interaction formats.

The fourth period of Web2.0 (2003 - to the present) is characterized by dramatic changes in terms of content, user and market. The term "Web2.0" coined by Tim O'Reilly. By this term it is simpler to understand everything as a certain combination of interactive services with a number of specific properties. Moreover, these properties can hardly be collected in a certain system. For example, the method of recognizing Web2.0 is explained in the article "25 facts about Web2.0", published in the magazine "Big City" in August 2006, as follows:

Various Internet services that have appeared on the list of broken dotcoms and based on the principles of collectivism, cooperation, openness, accessibility, interactivity can be called Web2.0, without fear that someone will accuse you of dilettantism. If any Internet service gets better due to the fact that more people use it, this is almost certainly Web2.0. If you are offered a lot of some great services, two gigabytes of memory, the most accurate map in the world and at the same time do not ask for any money for it - this is almost certainly Web2.0. If there are only amateur enthusiasts all around and there is not a single professional who receives a salary for this, then Web2.0 is also certain. If you can take and correct this article with your own hand - this is also probably Web2.0. If for the definition of a resource terms such as Ajax, RSS, AdSense, tags, blogs are used, it most likely has something to do with Web2.0.

In fact, O. Reilly carried out what is called rebranding in the PR language, making the very concept of WEB the brand, and provided it with the property of versality. Thus, Web2.0 means that the network has changed significantly in relation to its original appearance. In other words, the network itself has become positioned as a product and as a brand. One hundred and only to implement the operation of naming, as many users actually saw the new phenomenon (Google, for example, contains more than 9.5 million links to Web2.0), and some producers of information resources and software immediately used it as a flag.

Web2.0 develops on the basis of integrations: the goals of the author and the reader — societies of co-authors appear; roles of the author and reader in the functionality of the user; the goals of the producer and the user in the partner projects; roles of producer and user in the user's functionality; the possibility of creating and perceiving content in one tool; opportunities to work with the content and the ability to change the tool itself.

The ideology of Web2.0 is fundamentally oriented towards a horizontal system of relations and does not work in hierarchical structures. Web2.0 and the related concepts “Folksonomy”, “Social Networks”, “Blogs”, etc., cannot be attributed solely to technological innovations. In fact, all this in one form or another has already been present in the global networks. It is rather a new ideology, not a technology. This, therefore, should not be about the possibilities of various network services, but about the perception of their audiences and nurturing on this widely and quickly mastered communicative soil of

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new forms of sociality and, possibly, political behavior.

However, volunteers armed with "smart" search programs can also take on analysis and expertise. So it is not clear why to study as a journalist if every housewife can manage information. The fears of professionals are understandable, since they feel that the center of informational activity is indeed shifting towards the Internet, where everyone can be a journalist to himself. In other words, work in a prestigious publication, identification with any media magnate today does not guarantee the success and popularity of a journalist. Consequently, the advance of amateurs through the Internet is a personal threat to the professional.

Such controversy really takes place, but the situation is not as pessimistic for professionals as it seems at first glance. It is just that what has acquired the name of the "professional revolution", in particular the trans-professionalization of journalistic activity, takes place. The emergence of Web2.0 allows for other reasons to construct a scheme for the periodization of the development of the Internet and, accordingly, Internet journalism: the emergence of the Internet as a means of self-expression and communication, amateur forms of addressing audiences (stage 1); the opening of the Internet as a media channel (stage 2); the opening of the Internet media as a business resource (stage 3); the emergence of social networks and other services Web2.0 (4th stage).

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Praises About Hussein Boykaro In Alisher Navoi's "Khazoin Ul-Maoniy" Collection

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ABSTRACT

The article analyzes the preface of "Khazoin ul-Maoniy" and the interpretations of Hussein Boykaro in the poet's ghazals.

KEYWORDS

Divan, ghazal, preface, literary critic, relations of Alisher Navoi and Hussein Boykaro.

INTRODUCTION

Hussein Boykaro was a ruler who controlled the Timurid kingdom for a long time and a great poet who made a great contribution to the development of the literary and cultural environment in Herat. That is why Alisher Navoi in his epics "Khamsa", "Majlis un-nafois", "Lison ut-tayr" and other works dedicate special chapters and large lyrical fragments to the hymn of Hussein Boykaro. There he was described as a benevolent, wise and just ruler of a great state. It is no exaggeration to say that the reason for this was, of course, the desire to see Hussein Boykaro as the image of a perfect king. This desire is reflected in the preface of "Khazoinul – maoniy" and in poems of various genres in the divans.

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It is known that "Khazoin ul-maoniy" is a huge collection of almost all lyrical heritage of Alisher Navoi. It contains poems of the poet in 16 different genres of classical poetry. The poet wrote a preface to this collection. The preface includes information on the biography of the poet, his literary activity, the history of his works, its peculiarities, literary and aesthetic views. In particular, the poet pays great attention to the description of the relationship between himself and Hussein Boykaro. In the preface, Hussein Boykaro was portrayed as the first editor of the poet's poems and a sponsor of their efforts to pass them on to future generations.

Hussein Boykaro instructed Navoi to collect all his poems and compose four divans: "Avtualy, you have wrote two divans according to my order. I also wawnt to have one more divan written by you". It is noted in the preface that Hussein Boykaro instructed the poet to collect all his poems and place them in four divans, stating that he was ready to support Navoi in every way, materially and spiritually during this huge and arduous work: "... There was no progress in the improvement of the two divans in the past, and no guidance or grace was attached to the picture. Chun's weakness is apparent to us, it is clear to us with compassion and kindness, and it is the solution to your problems with mercy and kindness."[1,15]

Inspired by the high attention and respect of Hussein Boykaro, Navoi set out to create a huge college. The poet summarizes the poems he has written before, edits them. In this way he delivered his collected ghazals to the Sultan Sahibkiran.

It is noteworthy that Hussein Boykaro not only read Navoi's poems and enjoyed them endlessly, but also eliminated some of their shortcomings: "... From his treasury, he turned the gems of rubies and pearls into jewels, and numbered each ghazal in its proper place "[1,17].

The fact that Hussein Boykaro edited Navoi's poems as early as the 1470s was acknowledged in the preface to "Badoe' ul-bidoya". This testifies to Hussein Boykaro's deep study of poetry at that time and his high poetic talent.

In the preface, Hussein Boykaro's creative people, in particular, Alisher Navoi and his attitude to his work, his generosity, his qualities as an intelligent poet were recognized in high spirits. These issues are gradually reflected in the poems of "Khazayn ul-Maoniy".

MATERIALS AND METHODS

There is a more uplifting spirit in the ghazals and verses associated with the hymns and descriptions of Hussein Boykaro, as in the preface to "Khazaynul-maoniy". That is, they are strong in praising Hussein Boykaro as a just and generous, enlightened ruler. Also in "Khazoinul-maoniy" a special place was given to ghazals and verses that illuminate the biographical places between Alisher Navoi and Hussein Boykaro. Many of the poems also reflect Hussein Boykaro's qualities as a reformer of Navoi's poems. Based on this, the ghazals and verses dedicated to Hussein Bayqara can be grouped as follows:

1. Ghazals and verses praising Hussein Bayqara as a just king.
2. Ghazals and verses, which are an expression of the relationship between king and poet.

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3. Ghazals and verses reflecting the qualities of Hussein Boykaro as an intelligent poet.

In almost all his works, Alisher Navoi put forward the idea of a struggle for a just and enlightened king and a centralized state. According to Navoi, the socio-economic and cultural development of the country, the peace of the country depends primarily on the ruler himself, his personal qualities.

In almost all his works and lyrical poems written by Navoi, Hussein Boykaro after coming to power, is repeatedly praised and proud of him as a just, patriotic king, a generous patron of literature and art, science and profession. There were both truth and exaggeration in these descriptions. In this case, Navoi, on the one hand, glorifies and supports the positive qualities of the king, on the other hand, seeks to eliminate some of the negative aspects of the character of the ruler through praise.

According to Navoi, the qualities of King Ghazi are innumerable, it is a desire to write them down:

Ким тузай мастона Шоҳи Ғозий авсофида савт,

Бу кўнгил гар бўлса, ўз ҳолида гар ҳам бўлмаса [1,48].

In one verse, the poet emphasizes that his kingdom will be perfect and enduring only when he is ready to relinquish the kingdom when the time comes and become a poor person:

Шоҳға шоҳлиғ мусалламдир агар бўлғай мудом

Шоҳлик таркин қилиб, дарвеш ўлур ният анга [1,29].

According to Navoi, only Hussein Boykaro was the only king who was always ready to "leave the kingdom" and live poorly. The kingdom is only an "image" of Hussein Bayqara, and his "biography" (inner world, qualities) is dervishism:

Мумкин эрмас шоҳлар ичра бўйла ниятлиғ, магар,

Шоҳи Ғозийким, муяссар бўлди бу давлат анго.

Шоҳлар дарвешию, дарвешлар шоҳики бор,

Шоҳлик сурат анга, дарвешлик сийрат анга.

In this philosophical poem on the subject of "king and dervish" (king and beggar), Navoi also states that Hussein Boykaro achieved such a career and state because he was humble, just and poor. Not only does it emphasize, but it also promotes a virtuous, just ruler.

Navoi believes that the country should be ruled by an intelligent, just, noble king. Such a wise and just king is Hussein Boykaro. The door of oppression is always closed from the justice of King Ghazi. That is, Sultan Hussein will never rule the country with oppression:

Эй Навоий, эрмас ул зот кўзи уйқудаким,

Зулм эшиги Шоҳи Ғозий адлидин масдуд эрур [1,157].

Because of the king's justice, his abode became a refuge for the widows and the needy, and a

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place of refuge for the khans. Therefore, may God Himself use the door of King Ghazi:

Шоҳи ғозий эшигин Тенгри басе тутсунким,

Нотавонларға паноҳ ўлдую хонларга малоз [1,152].

Hussein Boykaro was given such a state and rank because he was a just king who first stroked the heads of the poor. Sultan Hussein Boykaro Navoi, who achieved such a great career as the sky, can also reach the sorrows:

Навоий оҳи навосози шоҳ Абулғозий,

Сипеҳр мартаба Султон Ҳусайн Бойқаро [2,40].

That is why Navoi equates the threshold of Shah Ghazi's residence with the circumambulation of the Ka'bah:

Эй Навоий Каъбаи мақсуд васлин истасанг,

Шоҳи ғозий қасрининг даргоҳи олийшонин ўп [1,88].

The relationship between Alisher Navoi and Hussein Boykaro has long been studied unilaterally in literature. The contradictions between them were sometimes exaggerated. This issue has been discussed in the research and articles of many literary scholars. In particular, Professor Abdukodir Hayitmetov's article "Navoi's Persian Letters" clarifies this issue.

It is known that from time to time there were some disagreements between Hussein Boykaro and Alisher Navoi. This, of course, is explained by the fact that Hussein Boykaro was the ruler of the time in the first place, as well as by the contradictions of the period in which they lived. Therefore, no matter how much Alisher Navoi gained respect in the presence of the king, he always had to take precautions and be polite in the palace:

Шаҳ ҳаримида, Навоий, неча топсанг эҳтиром,

Билгил ўз ҳаддингни-ю, беҳад риоят қил адаб [4,38].

In the above article, A. Hayitmetov thinks about a Persian letter from Navoi, noting that in its content there is a hint of a coldness between the king and the poet, but it did not last long.

It is worth remembering the relations between Hussein Boykaro - Majididdin - Alisher Navoi. Majididdin Muhammad, who was first a propeller at Hussein Boykaro's palace and later promoted to the post of prime minister due to a two thousand district money incident, was a man of extremely bad character. Navoi suffered greatly from his actions. In general, many sources say that the coldness between Hussein Boykaro and Alisher Navoi and the fact that the poet was sent to Astrobod was largely due to Majididdin Muhammad.

The following two ghazals from Alisher Navoi's "Favoyid ul-kibar" are an expression of the poet's experiences and tenderness at that time:

Қайси бир туҳматки бизга қилмади нисбат рақиб,

Қайси бирники эшитқач қилмади бовар ҳабиб?

Чун рақибимға рақиб эрди ҳабиб, эрдим тирик,

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Найлай ўлмайким, ҳабибимға ҳабиб ўлмиш рақиб [2,54].

The opponent is throwing innumerable slanders at the lyrical protagonist, and the poet is astonished that his sibling believes in one slander, if not another. The poet was heartbroken that "Habib" (Hussein Boykaro) was a rival to his rival. Now the rival has become a friend of the lyrical hero's habib, from which the poet is deeply distressed. Now let's look at the ghazal bytes with the radif "Friend":

Қилди душман раҳм, баским қилди жавр изҳор дўст,

Эй кўнгул, душман топ эмди, тутмағил зинҳор дўст.

Ҳар замон душманларим озурдадур, эй дўстлар,

Баски, ҳар дам еткурур мен зорға озор дўст [2,92].

Navoi's lyrical protagonist is dissatisfied with the fact that he is hurting his friend more than his enemies. From such a friend, it is better to face the enemy than the conversation of a friend. Even the hearts of some of his enemies were offended by his friend's annoyance to the poet at every moment.

It is possible to imagine that the above verses reflect some contradictory relations between Hussein Boykaro and Alisher Navoi. However, it is natural that the relations between the king and the poet did not continue in this way.

Шодмен гўё фироқ айёми бўлди муртафиъ

Ким, ҳабибим келмагига етти ҳар ёндин хабар [2,180].

Another quality of Hussein Boykaro is reflected in the ghazals of Khazaynul-Maoniy. These are the character traits of the ruler as a clever poet. It is known that Hussein Boykaro, well versed in Persian-Tajik language, wrote beautiful poems in Turkish and arranged the divan, inviting other poets to write in their native language. As one of the great representatives of the literary environment of Herat, he constantly followed the works of his contemporaries - Abdurahmon Jami and Alisher Navoi, and praised them. He was proud to live at the same time as them. He admits this in his works. A genius poet like Navoi, in particular, regularly read and observed his poems, edited them, and took care to consolidate his lyrical heritage in the form of "mutaaddid" divans. This is evidenced by the prefaces. Although the issue is exaggerated in the prefaces, there is a real truth behind it. Although the poems of a great poet like Navoi were small, it was necessary to make corrections, to have great talent for reform, and to have a deep knowledge of the most delicate aspects of poetry. Hussein Boykaro had such qualities. Indeed, in Navoi's ghazals, too, Hussein emphasizes that Boykaro was a man of great subtlety in the science of poetry:

Эй Навоий, хурдаи назминга ислоҳ истасанг,

Шоҳ Ғозийдан жаҳонда хурдаданроқ йўқ киши [1,606].

Edited poems are also filled with more subtle forms, as the delicate king shines his rays over his head:

Навоий хурдаи назмингни андоқ айладинг таҳрир,

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Ки, сочқай хурда бошинг узра шоҳи хурдадон кўргач [1,117].

According to the poet, if the sultan looks at his poems "with kindness", they will inevitably find honor as a sermon on the days of Eid:

Эй Навоий, дурри назминг хутбадек топқай шараф,

Лутф ила қилса назар байрам куни султон санга [2,22].

On the whole, Hussein Boykaro's contribution to the consolidation of Alisher Navoi's lyrical heritage and its preservation for future generations was enormous. The poet points out that if Hussein Boykaro had not looked at the surface of compassion, his poems would have disappeared like a drop of water that had sunk into the ground:

Ҳар гавҳари туфроғ уза бир қатла су янглиғ

тушгач адам ўлғай,

Гар қилмаса ишфоқ этибон Хусрави Ғозий

назминг сори парво [1,673].

CONCLUSION

In general, the issues raised in the prefaces have gradually found expression in poems of various genres, which have taken place in the divans. In particular, in the poet's poetry, the relationship between Navoi and Hussein Boykaro was manifested in many ways. Indeed, in the poems of the poet, the spirit of interpreting Hussein Boykaro as a just and national ruler, a generous and caring leader and a wise poet is strong. Also, the conflicting relationship between the poet and the ruler of the time, as well as some of his contemporaries, which has caused much controversy in recent times, is sometimes reflected in an open, sometimes veiled state.

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Policy Of Repression: Difficult And Complex Years For The People

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ABSTRACT

The article examines the innocent victims who were selfless representatives of the Karakalpak people, such as Ubaydulla Baoetdinov (Khan Maksim), Kutlymuratbiy (Bala biy), Inayat bolis Niyazov, Ollo'r Dustnazarov, Kasym Auebaev, Kasim Aoezov in the Bolshevik government during policy of repression. It is estimated that 70% of the representatives of the Karakalpak Autonomous Region were arrested under the name "public enemy", as a result of which the population became afraid and the policy of totalitarianism was intensified.

KEYWORDS

Counter-revolution, policy of repression, “public enemy”, Ajina bridge, slander, memory book.

INTRODUCTION

As we study the history of our nation, one of the most complex and difficult periods in our history was the policy of repression pursued by the Soviet government in the 1920s and 1940s. In this way, the Soviet government tried to destroy any opposition, any dissent in government policy, any critical opinion, any prominent, leading political statesman of any nation, all forms of democracy. It could not have been otherwise under the totalitarian

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regime. The policy of repression was carried out in Uzbekistan, as well as in all the republics of the former Soviet Union, including Karakalpakstan.

According to some sources, 3,778,000 people were charged with counter-revolutionary activities in the former Soviet Union, of which 768,098 (20%) were shot dead, 2,369,000 were imprisoned for various periods, 765,000 were deported and relocated [1. 18].

There were several waves of repression in Karakalpakstan between 1920 and 1940. This period left tragic traces in the history of the Karakalpak people and took away from us the most advanced, educated and courageous children of the people.

The policy of repression in Karakalpakstan began with the establishment of Soviet power. The reason was that the forced establishment of the Bolshevik government led to popular uprisings against them in 1917-1922. The major leaders of the revolt, such as Ubaydulla Bao'etdinov (Khan Maqsym), Kutlymuratbiy (Bala biy), Inayat bolys Niyazov, Ibrayim Adilov, Seytnazar Pirnazarov and others, were arrested. Some of them were shot, the others were exiled. This was the first policy of repression in Karakalpakstan [3. 239].

MATERIALS AND METHODS

The next stage of the policy of repression in Karakalpakstan was carried out in 1928-1930. During this period, local statesman, on the one hand, and scholars, who played an important role in the spiritual life of the people, on the other, were repressed. In 1929, the former head of the Karakalpak Autonomous Regional Court, Abdijalil Ismetullaev, and the participants of the uprising led by Barlykbay Bolis Nurymov (Takhtakopir uprising) were severely punished. Alshansky, the OGPU's deputy plenipotentiary in Kazakhstan, was in charge of punishing them. 232 people were arrested as defendants. 104 of them were found guilty under Article 58, Sections 1-2-4 of the Criminal Code of the RSFSR, 52 were sentenced to death, and the rest to various terms of imprisonment. The leaders of the uprising Abdijalil Ismetullaev, former deputy chairman of the Chimbay district executive committee Matkarim Bekanov, Askar Urumbaev, Khojakhmet Ernazarov, Orazymbet Ayteshev, Najim Ibragimov, Pakhratdin Munaydarov (former chairmen of the volost executive committee) and the others were shot. [3. 241]. In addition, in accordance with the decision of the meeting of the Plenipotentiary Representation of the OGPU "Trinity" in Kazakhstan, Article 58, Parts 1-2, Article 59, Part 1 of the Criminal Code of the RSFSR, 18 of the 49 people were sentenced to death on January 3, 1930, the sentence was performed on the same day in Kungrad [1. 20].

Another tragic aspect of the repressions of 1928-1930 was aimed at destroying the spiritual wealth of our people. During these years, in connection with the transition to the Latin alphabet in our country, the Bolsheviks tried to destroy all books and manuscripts written in Arabic script. The scribes and Eshan were arrested. Among them Inayat Eshan Bakhaoatdinov, Khalila Akhun Atauliev, Pakhratdin Eshan Munaydarov, Tansyk Khoja Orumbayev, Karimberdi Akhun Nurullaev were found guilty under Article 58, Part 2 of the Criminal Code of the RSFSR and sentenced to death [3. 241]. In addition, Idris Ishan Shyrazatdin oglu, Ilyas Ishan Idiris oglu, Najim Ishan Tajetdinov, O'ayis Ishan, Nurilla Akhun

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Pirlepes oglu and other scholars of the Karakum Eshan dynasty, who gained prestige among the peoples of the whole Turan Valley, were unjustly severely punished.

Another mass repression in Karakalpakstan took place in 1936-1938. The center charged the leaders of the local party-Soviet bodies with being called "Trotsky-Bukharans," "counter-revolutionaries," and "nationalists." Secretaries of regional committees, heads of departments, the chairman of the Council of Ministers, his deputies, people's commissars, first secretaries of district party committees, heads of district executive committees, 70% of their deputies were arrested as "public enemy."

RESULT AND DISCUSSION

One of such brave Karakalpak boys was Olloyor Dustnazarov, who was the first secretary of the Karakalpak Autonomous Region Party Committee in 1924-1925. He was arrested by the NKVD on January 25, 1935 in Moscow on charges of "contact with counterrevolutionary organizations" and sentenced to 10 years in prison. However, on November 10, 1937, the "Trinity" group of the NKVD in the Leningrad regional administration reconsidered the case of O. Dustnazarov and sentenced him to be accused of being "public enemy", and the verdict was executed on December 8, 1937 [2. 418-419].

On December 13, 1938, a trial was held in Tashkent against 50 Karakalpak officials. 40 of them were convicted under Articles 57 1b, 58, 63, 64, 67 of the Criminal Code of the UzSSR and sentenced to death. The verdict was executed in Tashkent on the same day and they were buried without a shroud in the depths of the Ajina Bridge. Each of the others was sentenced to 10-15 years in prison [1. 21]. Among them are Kasym Auezov, Abio Kudabaev, Koptileo Nurmukhammedov, Oteniyaz Bekimbetov and regional secretaries I. Aliev, K. Baltaev, K. Alimov, K. Allabergenov, People's Commissars T. Nizamatdinov, A., Bekmuratov, Chairman of the Supreme Court A. Pirnazarov and others who took an active part in the restoration of statehood and the development of our national culture were shot and buried on top of each other.

According to some estimates, 10,000 people were persecuted in Karakalpakstan between the first half of 1934-1939. In 1939-1940, the NKVD of the USSR fabricated 168 "counter-revolutionary" criminal cases involving false witnesses and slander and handed them over to court. [3. 245].

On May 1, 2001, the Presidential Decree "On the establishment of the Day of Remembrance of the Victims of Repression" was adopted. It was emphasized that under the totalitarian regime millions of innocent people died, many families were ruined, and many children were separated from their parents. In order to restore truth and justice, to respect the courage of our oppressed compatriots, to instill in our compatriots, especially the younger generation, a sense of respect for their memory, the annual Day of Remembrance of the Victims of Repression is set for August 31.

CONCLUSION

Work in this direction continued, and the Karakalpak branch of the Fund for the Memory of the Martyrs of the Republic of Uzbekistan took measures to establish the names of the

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boys who died for the freedom of the Motherland and the people in Soviet times. On the basis of sources in the central and republican archives, the names of about 5 thousand repressed were established. In 2003, based on this information, the monograph "Political Victims in the History of the Republic of Karakalpakstan" was published.

Indeed, we have no right to forget our compatriots, who were persecuted on false accusations when they served the good of the country under the Soviet totalitarian regime, they will forever remain in our hearts.

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